

SDT 501 UB-C Software Defined Transposer/ Re-Transmitter

OPERATION MANUAL

3 OPERATIONS

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3.1 INSTALLATION

3.1.1 INSTALLATION PROCEDURE CHECK OFF

Some procedures in this section contain steps preceded by a check box. Fill out or initial each step as it is completed.

3.1.2 SITE SELECTION

Use the following specifications to establish criteria for site selection and equipment installation.

3.1.2.1 MOUNTING SPECIFICATIONS

- **Mount.**
 - A floor-standing, open rack or permanent structure with vertical mounting members conforming to EIA Standard 310 is recommended.
- **Environment.**
 - Ambient temperature: 0°C to +45°C (room temperature or below is ideal)
 - Relative humidity: 10% to 90%, non condensing
- **Clearance.**
 - No clearance is required for sides.
 - At least 1 U free space above and below the equipment is recommended to obtain adequate cooling.
 - Access to the front requires approximately 20 centimeters clearance for making connections.
 - Access to the rear requires approximately 20 centimeters clearance for making connections.

3.1.3 UNPACKING

The containers used to ship a SDT ARK 1 transposer / re-transmitter will vary with the number of options ordered. If there is any external damage to the containers, inform the shipping company and request that an agent be present during unpacking. Carefully unpack the boxes (no special instructions are required) and note any damage making pictures if possible.

After all items are unpacked, check the equipment received. If there are any damages or shortages, notify the carrier and Screen Service BT immediately.

3.1.4 EQUIPMENT MOUNTING

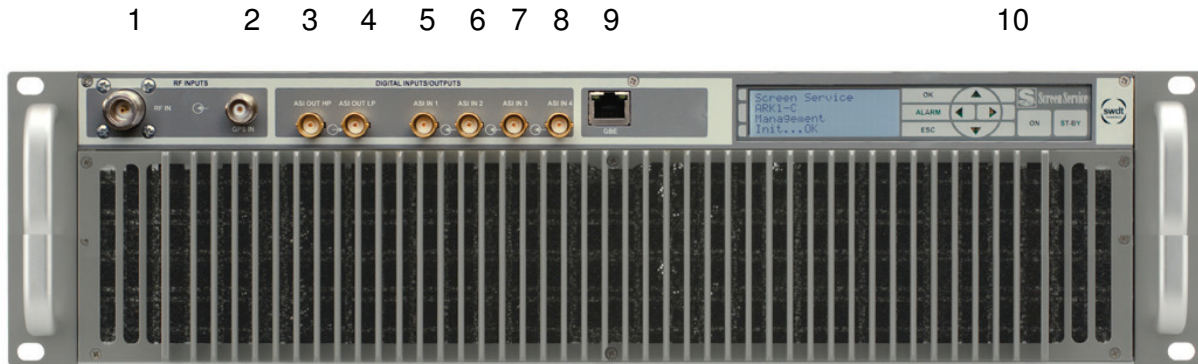
Install the transmitter in an EIA (Standard 310) 19 inch rack as follows:

- ❑ Place the equipment into the rack (2 units), align the mounting holes, and secure in place with four rack screws.
- ❑ If configured to operate, make sure the "LINE" switch on the front panel of the POWER SUPPLY & METERING module is OFF.
- ❑ Connect the power cord to an operating power source.

Note: We warmly suggest the installation of spike suppressors, line conditioners, isolation transformers or other devices useful to protect the equipment.

- ❑ Connect the transmitting antenna cable to the "RF OUTPUT" connector in the rear panel.
- ❑ Connect the, RF, GPS, ASI, SNMP PORT, AUX REMOTE, 10 MHz, 1PPS and the IF monitor to the relevant input / output connectors on the front and rear panel.
- ❑ REMEMBER TO CONNECT the equipment to the GROUND using the relevant screw located on the rear panel.

3.1.5 FRONT PANEL

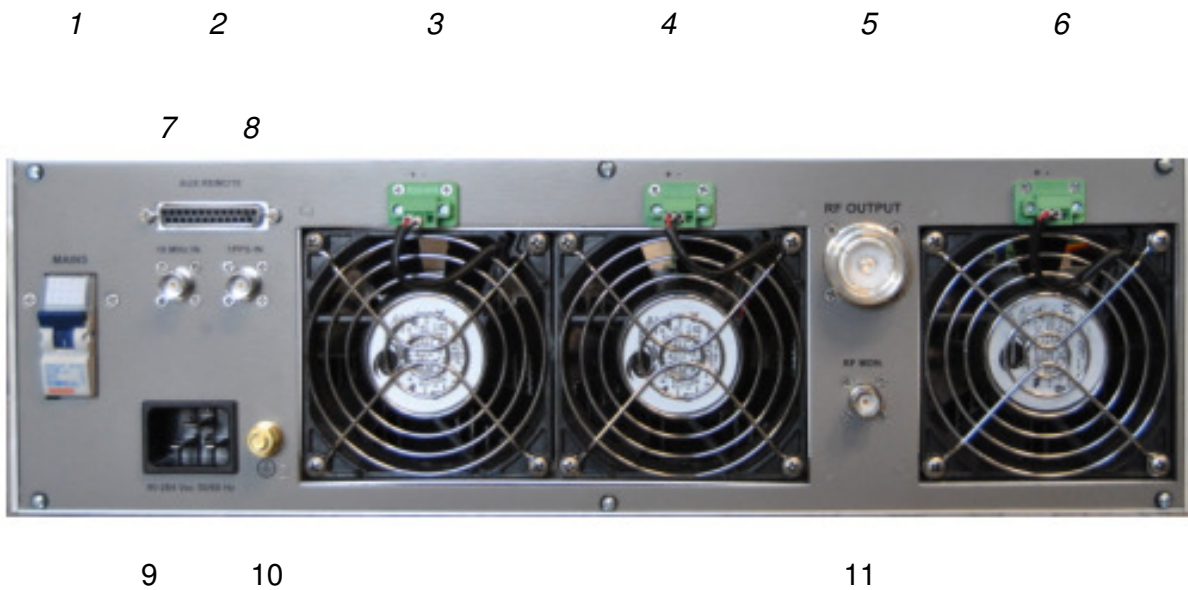


ARK 1-T Front Panel

n.	Label	Description
1	RF INPUT	
2	GPS IN	
3	ASI OUTPUT HP	
4	ASI OUTPUT LP	
5	ASI in 1	
6	ASI in 2	
7	ASI in 3/ SDI in	
8	ASI in 4	
9	GBE 1	
10	LCD Display	

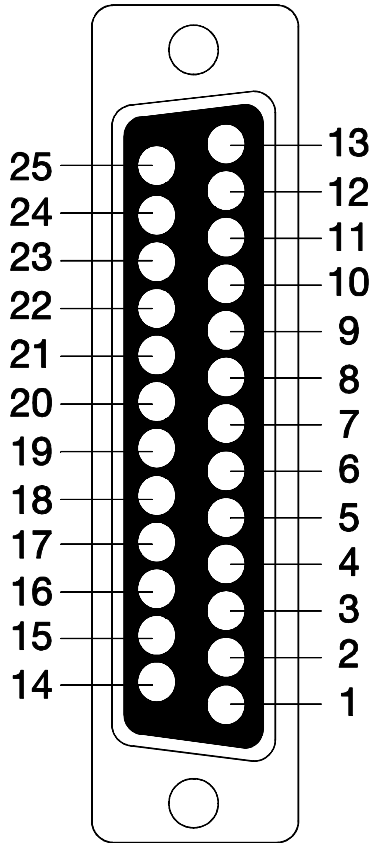
3.1.5.1 REAR PANEL

1. AC Main ON/OFF SWITCH
2. AUX REMOTE
3. FAN
4. FAN
5. RF OUTPUT
6. FAN
7. 10 MHz INPUT
8. 1 PPS INPUT
9. AC MAIN INPUT SOKET
10. GND REFERENCE
11. RF MONITOR



3.1.5.2 REAR PANEL CONNECTORS

AUX REMOTE CONNECTOR
Sub-D 25 Male.



PIN	ASSIGNMENT	REMARKS
1		
2	Not used	
3	Alarm reset	in opto active to gnd
4	Remote STBY	in opto active to gnd
5	GND OPTO	
6		
7		
8		
9	SERIAL 485/232	
10	SERIAL 485/232	
11		
12	RF OFF	in opto active to gnd
13		
14		
15		
16		
17	COM RL 0	NOR. CLOSED
18	RL 0	
19	COM RL 1	NOR. CLOSED
20	RL 1	
21	COM RL2	NOR. CLOSED
22	RL 2	
23	COM RL 3	NOR. CLOSED
24	RL 3	
25		

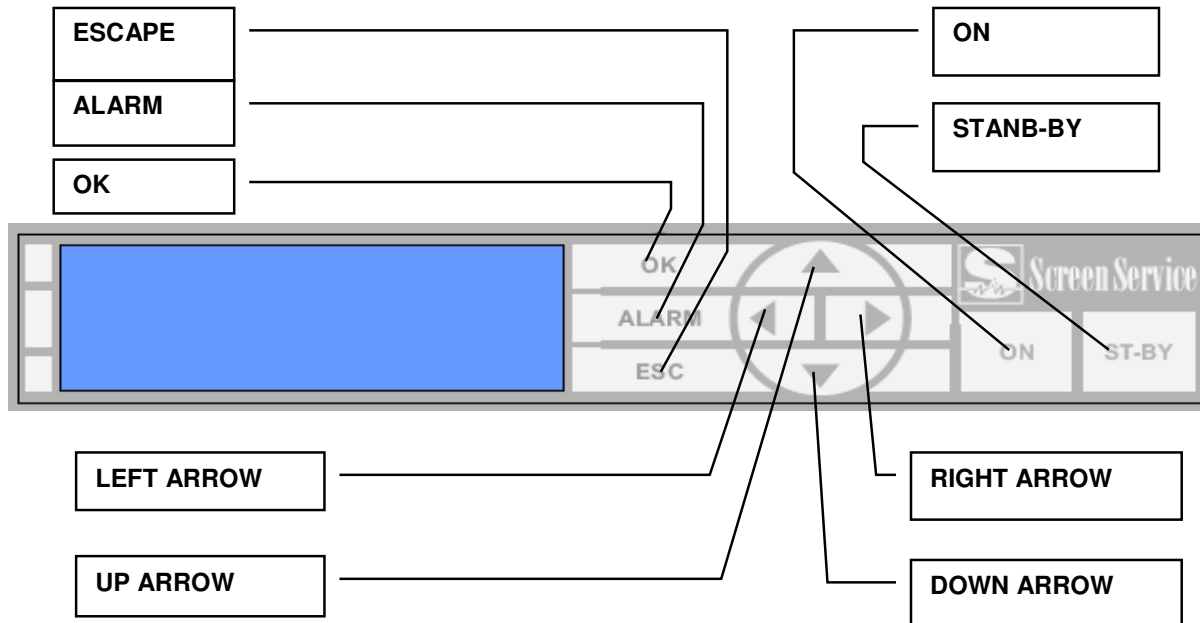
Figure 3.1-1: AUX REMOTE CONNECTOR

3.1.6 MULTIMETER

The following paragraphs describe the local user interface for **ARK1**.

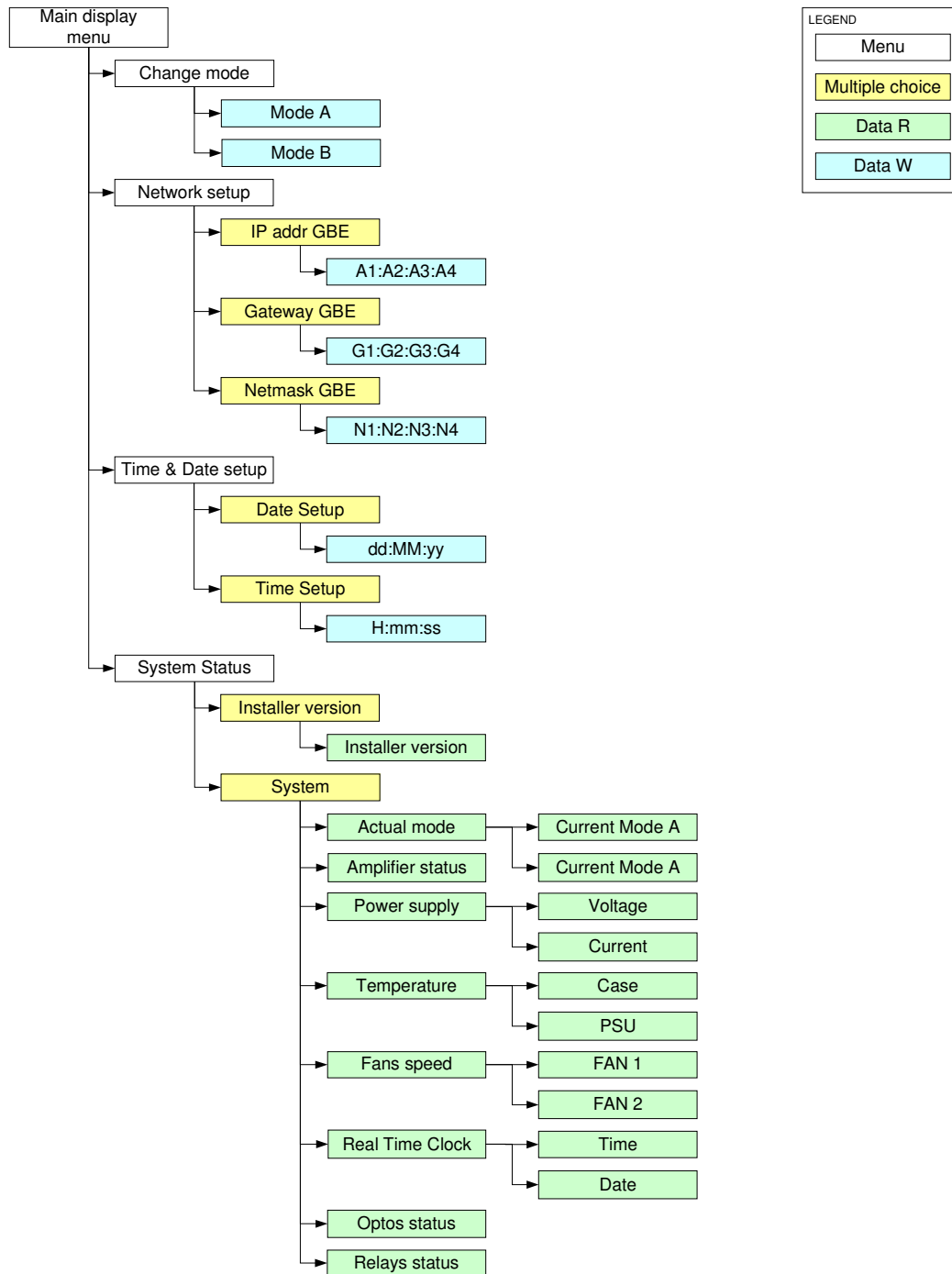
This user interface is composed of LCD Display, seven buttons and two status leds.

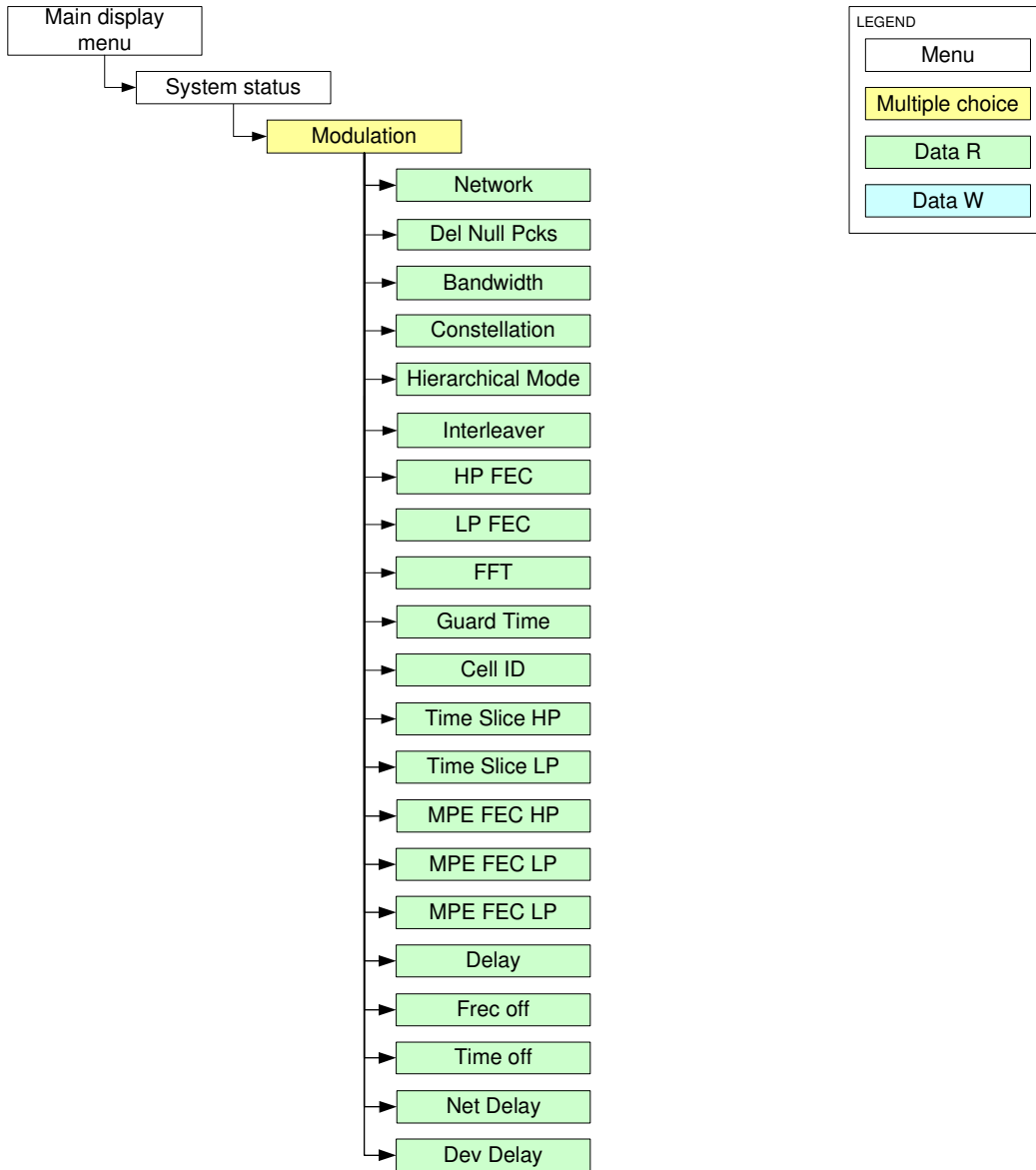
Here below is depicted the ARK1 Front Panel.



- **STAND-BY:** push this button (lie in wait for two seconds) to put the equipment on STAND-BY mode. The orange led lights up and the written **STAND-BY MODE** appears on the display. The remote Stand-by mode is enforceable only if on JAVA interface this feature is enabled.
- **ON:** push this button (lie in wait for two seconds) to turn on the equipment. The green led lights up and the **MAIN MENU** is displayed.
- **OK:** push this button to select or to confirm the subwindow or the value respectively. Touching the screen with a finger the green led lights up.
- **ESC:** push this button to quit a submenu and to return to the previous one. Touching the screen with a finger the green led lights up.
- **ALARM:** when an alarm occurs the RED LED lights up.
- **UP ARROW:** push this botton to scroll up menus or to increase a value. Touching the screen with a finger the green led lights up.
- **DOWN ARROW:** push this botton to scroll down menus or to decrease a value. Touching the screen with a finger the green led lights up.
- **LEFT ARROW:** push this botton to move within a string. Touching the screen with a finger the green led lights up.
- **RIGHT ARROW:** push this botton to move within a string. Touching the screen with a finger the green led lights up.

3.1.7 LOCAL INTERFACE MENU TREE





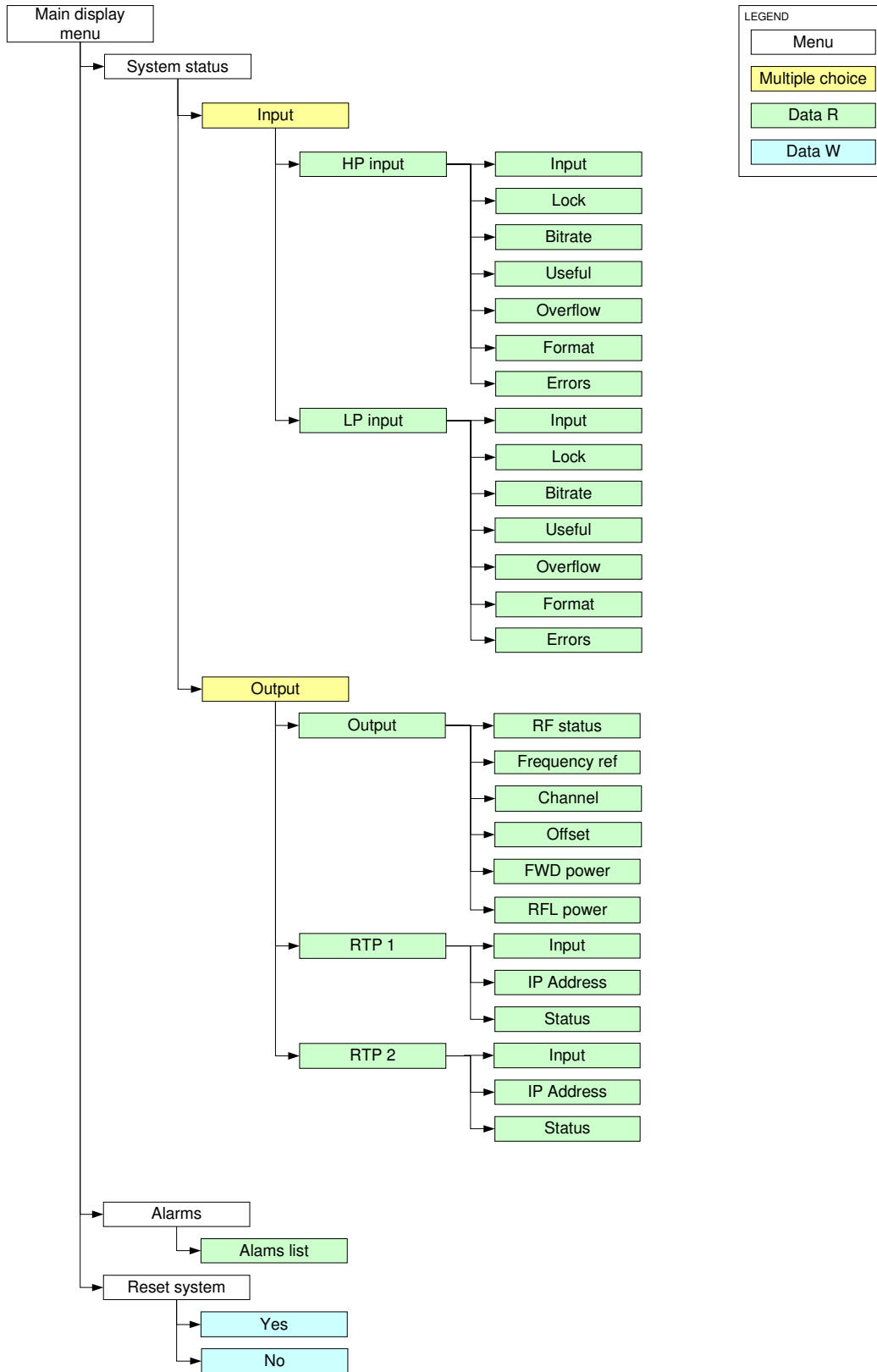
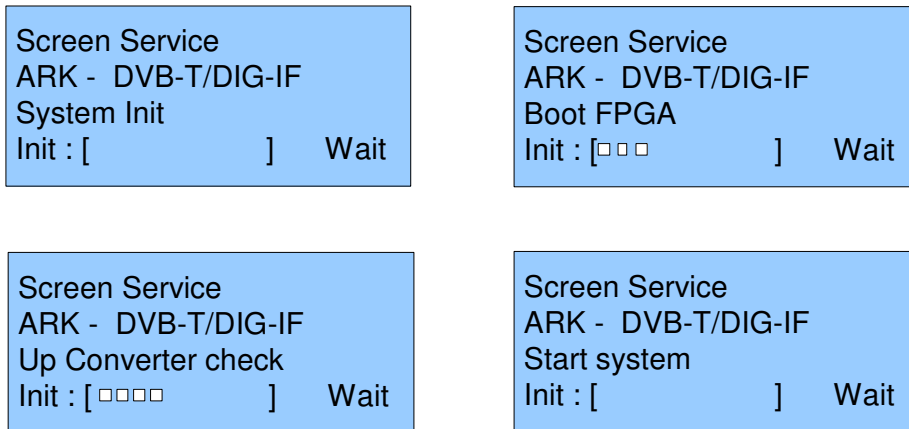


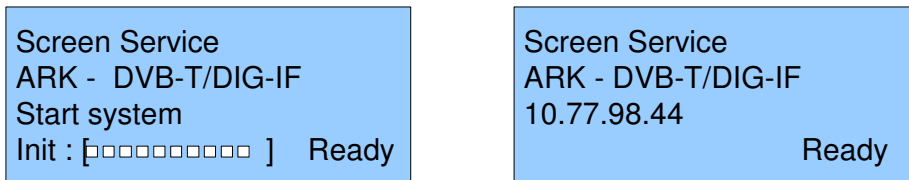
Figure 1. Local Interface Menu Tree

3.1.8 BOOT AND WELCOME MESSAGE

Turning on the equipment, the display shows the progress bar as follow:



When the boot is over, the board is ready.



Press ESC to enter the main menu, otherwise after one minute waiting the idle status message appears.

3.2 IDLE MENU

```

ARK - DVB T
InHP: ASI1
Out  17.1dBm  CH:22
UTC: 14:11   08/11/06

```

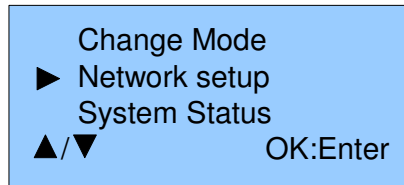
This menu appears after one minute waiting from the last touch. Information contained in the Idle Menu are described in next table.

Table 1. Local User Interface: Idle Menu

Information	Description
Operating mode	<ul style="list-style-type: none"> DIGITAL IF: Heterodyne Transposer DVBT: Re-broadcasting DVB Modulator
AGC Mode (only in DIGITAL-IF mode)	<ul style="list-style-type: none"> ANA: Analog DIG: Digital
Output Power and Channel	Dout: digital output power and channel Aout: analog output power and channel Out: output power and channel
UTC	Time and date coming from GPS receiver

Press ESC to enter the MAIN MENU.

3.2.1 MAIN MENU



This menu shows five SUBMENUS. It is possible to view them sliding the menu up and down, with the UP or DOWN ARROWS, and to select one of them by pushing on the OK button. Submenus contained in the Main Menu are described in next table.

Submenu	Description
Network setup	Enter this submenu to change: <ul style="list-style-type: none"> • Board IP address • Gateway address • Netmask
System Status	Enter this submenu to monitor: <ul style="list-style-type: none"> • System status • Auxiliary and RF input statistics • Tuner status • Output status and settings • Actual modulation parameters All information are refreshed every 5 seconds.
Alarms	Enter this submenu to view the alarm list
Reset system	Enter this submenu to reset the device.
Change mode	Enter this submenu to change operating mode (A or B).

3.3 LCD alarms

Through the LCD Alarms mask it is possible to select which alarm has to be notified on LCD display. The alarm button is lighted and when an alarm condition occurs, alarms status is displayed in the Alarms submenu.

The following table lists the alarms messages displayed on LCD, associated to the corresponding alarm (refer to [Alarms](#) paragraph for further information about alarms and their masks).

Alarms descriptions list

Table 2.

Alarm	Alarm Message
Up converter Osc. Unlock	UPCV not locked
PS Voltage out of range	PS V out of range
PS Current out of range	PS I out of range
Absolute Power Limiter	Abs. pwr high
Communication error	UPCV dialog error
Temperature High Alarm	Temperature high
Temperature Level-3dB	Temp alarm (-3dB)
Temperature High Warning	Temp warning
Forward Power High	FWD power high
Forward Power Low Warning	FWD low warning
Forward Power Low Alarm	FWD low alarm
Reflex Power High	RFL power high
Fan Speed	Fans warning
Input Not Present Alarm	One of the two inputs of HP or LP isn't present
GPS Lock	GPS not locked
GPS Communication Error	GPS dialog error
Signal 10 MHz Lock	10MHz not detected
Signal 120 MHz Lock	120MHz not detected
Signal 960 MHz Lock	960MHz not detected
Input Not Valid	Errors are detected in one of the two LP or/ and HP inputs
Late MIP Alarm	MIP arrives over the expected time
Network delay alarm	Network delay exceeds the Maximum delay
File System Error	FS wrong
Bad File in File system	File error
DVB-T 1PPS Lock	PPS not detected
DVB-T PPS Phase	PPS phase wrong
DVB-T System Delay	Sys delay wrong
DVB-T No MIP	MIP not detected
No Input	In. not detected

<i>Alarm</i>	<i>Alarm Message</i>
FPGA Boot alarm	FPGA boot err
Warm up alarm	Sys. warm up

3.4 JAVA REMOTE GRAPHIC USER INTERFACE

The Java Graphic User Interface, stored in the board File System, is downloaded to the local PC every time the user connects to the board with a Web Browser. A proper Java Virtual Machine is needed; refer to the Appendix B for a description of supported Java and Internet Browsers.

3.4.1 JAVA INTERFACE OVERVIEW

The following figure shows the main control switch of the Java User Interface. It allows the switching between control pages for settings and monitoring the device.

Figure 2. Java main control switch



The following controls are provided:

System commands bar allows the enabling of the following commands:

- **Connect:** connects/disconnects the local machine to Ark1 system
- **Save:** allows to save the device configuration.
- **Load:** allows to load the last saved device configuration.



Figure 3. System commands bar

Operation pages bar allows to switch between the following operative sections:

- **General:** allows to enable the Stand-by mode through the LCD Button, to reset the device and to locally download the *.jar file.
- **Input:** shows ASI and GBE input statistics.
- **Modes Management and Seamless Switching:** allows to monitor the RF input and to configure operative modes (mode A and mode B).
- **Modulation:** allows to monitor and to set the DVB-T/H modulation parameters.
- **Linear Precorrection** allows managing linear pre-correction curves.
- **AM/PM Precorrection:** allows managing AM/PM pre-correction curves.
- **Outputs:** allows to set output parameters, specific for each operative mode, and to monitor the hardware status.
- **Network:** allows the Network management and the RTP in/out parameters setting.

- **GPS:** shows received GPS statistics.
- **Alarms:** provides a grid where to set alarms masks for LCD, Graphic User Interface, Events, Relays, Traps and RF Off.
- **Events:** shows the board events log and allows the manual setting of date and.

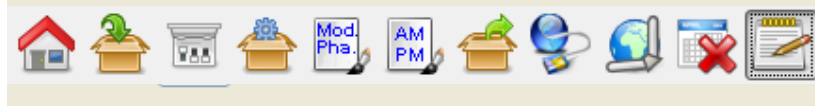


Figure 4. Operation pages bar

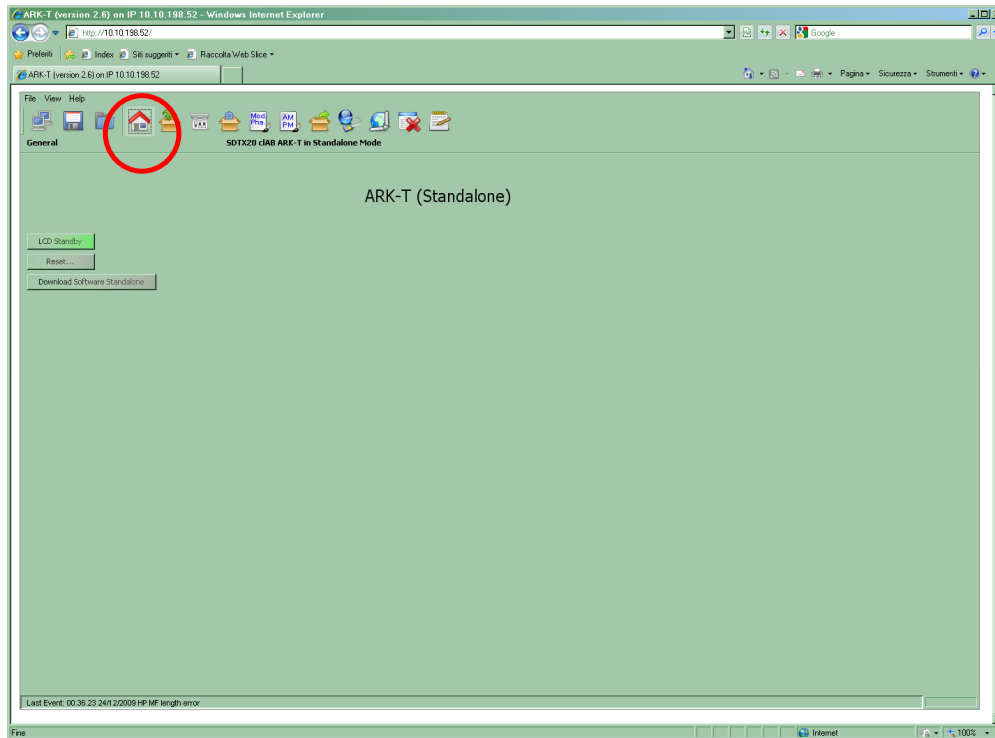
System menu allows the access to the same commands and pages as System commands and Operation pages bars plus management options, help and version windows (refer to [Option sub-menu](#) paragraph).

A brief description of all the provided indicators and controls follows in the next paragraphs.

3.4.1.1 General

Click on General button icon, highlighted in the next figure, to access the general window.

Figure 5. General window



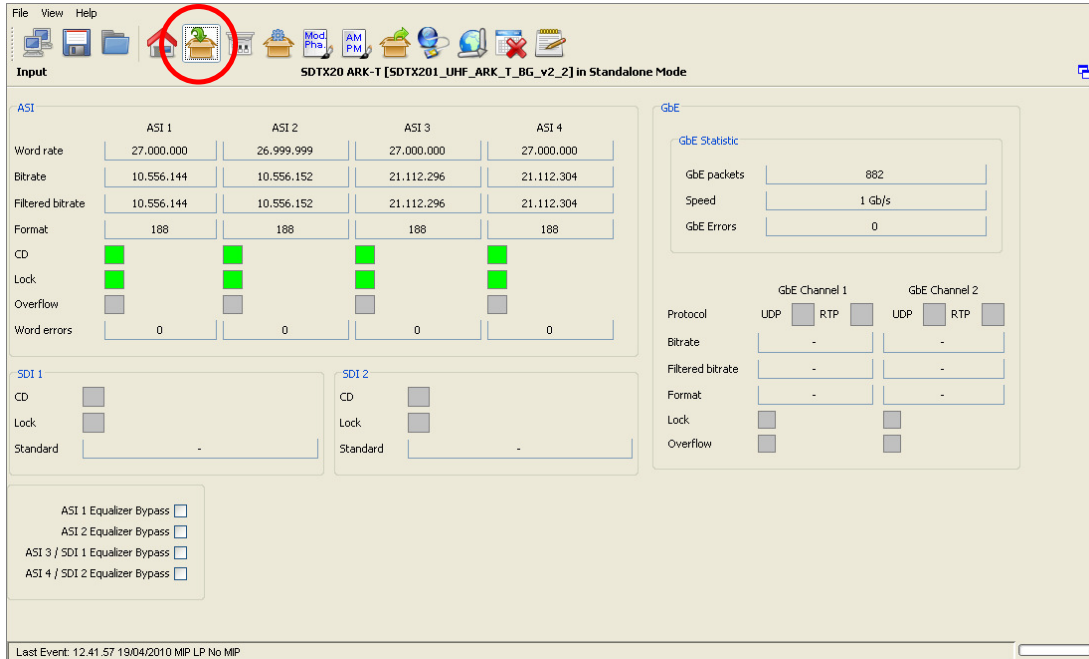
The General window provides a general description of the device and allows the access to a subset of commands through the following button icons:

- **Reset:** resets the device.
- **LCD Standby:** enables the LCD Stand-by button.
- **Download Software Standalone:** performs a local download of the *.jar file (refer to [Download Software Standalone](#) paragraph).

3.4.1.2 Input

Click on Input button icon, highlighted in the next figure, to access the input statistics window.

Figure 6. Input window



The Input window allows the monitoring of auxiliary inputs of Re-broadcasting DVB-T/H Modulator and Re-broadcasting ITU 470 modulator. Input Transport Streams monitoring of four ASI, two RTP channels on GBE port and two SDI are provided.

Table 3. Input window

Box	Parameter / Control	Description	Admitted Ranges / Values
ASI	Word rate	ASI input word rate. 10 bits word rate of ASI input (Ref. to CEI EN 50083-9).	Approximately 27 Mword/s
ASI	Bit-rate [bit/s]	ASI input bit-rate.	
ASI	Filtered bit-rate [bit/s]	When the ARK-T working in seamless mode the java show the filtered bit-rate of all seamless input (seamless mode working in SFN mode only, so the bit-rate actually used by the modulator, and the filtered bit-rate showed must be equal than the total bit-rate) When the seamless mode is disabled the java show the bit-rate actually used by the modulator.	<ul style="list-style-type: none"> • Zero when the input has not been selected • Equal to the total bit-rate, when Delete Null Packets disabled • Less than total bit-rate, when Delete Null Packets enabled
ASI	Format	Format of received TS Packets (Ref. to CEI EN 50083-9).	<ul style="list-style-type: none"> • 188 Bytes • 240 Bytes
ASI	CD	ASI Carrier detect.	<ul style="list-style-type: none"> • Green: Detected • Grey: Not detected

Box	Parameter / Control	Description	Admitted Ranges / Values
ASI	Lock	ASI locking status. The input Transport Stream is unlocked when more than two consecutive Sync Byte are missed then five consecutive Sync Bytes must occur to regain the lock (Ref. to ETSI ETR-291)	<ul style="list-style-type: none"> Green: Locked Grey: Not locked
ASI	Overflow	ASI input overflow indicator. This alarm condition occurs when the input bit-rate exceeds the capability of the modulation (Ref. to ETSI EN 300 744).	<ul style="list-style-type: none"> Red: Alarm Grey: No alarms
ASI	Word Errors	Total amount of ASI wrong words received.	
ASI/SDI	Equalizer Bypass	Enable/Disable the equalization bypass of the signal received over ASI interface	<ul style="list-style-type: none"> Checked: Enabled Not checked: Disabled
RTP	Protocol	Ethernet input packets protocol	<ul style="list-style-type: none"> UDP RTP
RTP	Bit-rate [bit/s]	Bit-rate of TS from Ethernet input.	

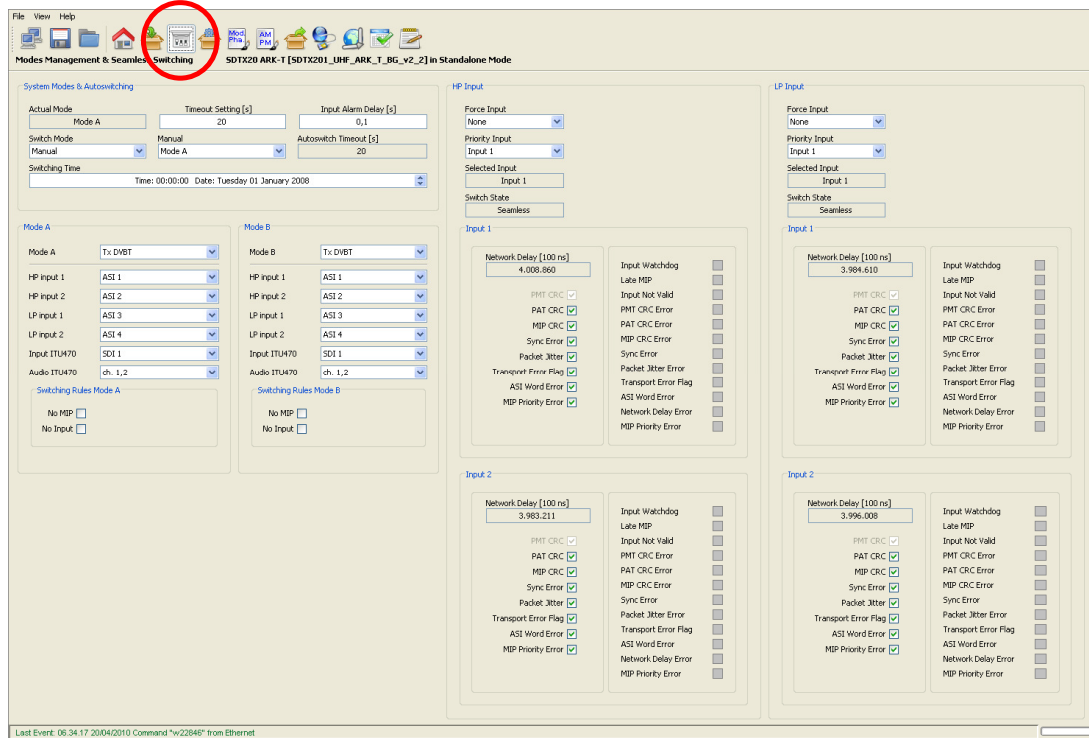
Box	Parameter / Control	Description	Admitted Ranges / Values
RTP	Filtered bit-rate [bit/s]	Bit-rate actually used by the modulator.	<ul style="list-style-type: none"> • Zero when the input is not selected • Equal to the total bit-rate, when Delete Null Packets disabled • Less than total bit-rate, when Delete Null Packets enabled
RTP	Format	Format of received TS Packets (Ref. to CEI EN 50083-9).	<ul style="list-style-type: none"> • 188 Bytes • 204 Bytes
RTP	Lock	Transport Stream locking status. The input Transport Stream is unlocked when more than two consecutive Sync Byte are missed; then five consecutive Sync Bytes must occur to regain the lock (Ref. to ETSI ETR-291)	<ul style="list-style-type: none"> • Green: Locked • Grey: Not locked
RTP	Overflow	Input GbE overflow alarm status. This alarm condition occurs when the input bit-rate exceeds the capability of the modulation (Ref. to ETSI EN 300 744).	<ul style="list-style-type: none"> • Red: Alarm on • Grey: Alarm off
RTP	GbE packets	Total amount of good Ethernet frames received.	

Box	Parameter / Control	Description	Admitted Ranges / Values
RTP	Speed	Ethernet connection speed. No duplex information is provided.	<ul style="list-style-type: none">• 10 Mbit/s• 100 Mbit/s• 1 Gbit/s
RTP	GbE errors	Total amount of bad Ethernet frames received.	

3.4.1.3 Modes management & Seamless Switching

Click on icon, highlighted in the next figure, to access the tuner window.

Figure 7. Modes Management & Seamless Switching



This window provides commands that allow the selection of working modes, the management and selection of inputs, and the monitoring of quality and level of input RF signals.

The window is divided in the following boxes:

- **System Mode & Auto-switching;**
- **Mode A;**
 - **Switching Rules Mode A;**
- **Mode B;**
 - **Switching Rules Mode B;**
- **HP Input;**
 - **Input 1**
 - **Input 2**
- **LP Input.**
 - **Input 1**
 - **Input 2**

3.4.2 Modes management

These commands allow the setting of working modes and switch selection rules.
The following table shows the commands and indicators available for modes management.

Figure 8. Modes Management

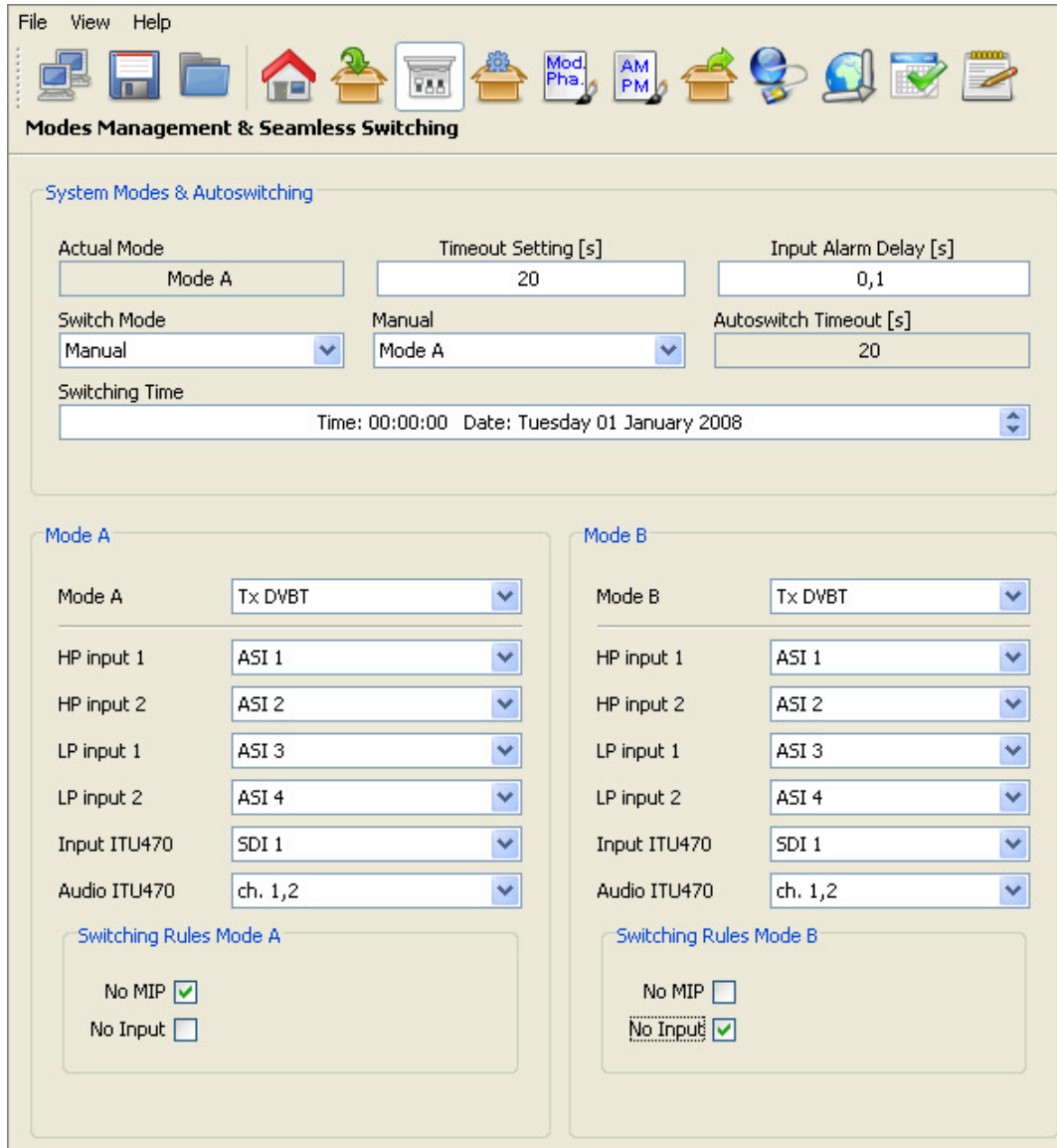


Table 4. Modes management

Box	Parameter / Control	Description	Admitted Ranges / Values
System Mode & Auto-switching	Actual mode	Current operative mode.	<ul style="list-style-type: none"> • Mode A • Mode B
System Mode & Auto-switching	Switch mode	Selector of the switch mode rules. Switching modes rules Refer to paragraph for a detailed description of the switching rules and conditions.	<ul style="list-style-type: none"> • Manual • Auto • Opto • Time
System Mode & Auto-switching	Manual	Selector of used mode when Manual Switch mode is selected.	<ul style="list-style-type: none"> • Mode A • Mode B

Box	Parameter / Control	Description	Admitted Ranges / Values
System Mode & Auto-switching	Timeout setting	Time to wait for switching. Refer to Switching modes rules paragraph for a detailed description of the switching rules. Note: It is highly recommended to set a timeout value different from zero in order to allow the input signal locking.	<ul style="list-style-type: none"> Min: 0 s Max: 255 s
System Mode & Auto-switching	Autoswitch Timeout	When Auto Switch Mode is enabled shows the time to wait for switching. If the used input regains lock before the countdown reaches 0 the switch is blocked and device keeps the same mode.	<ul style="list-style-type: none"> Countdown from 255 to 0
System Mode & Auto-switching	Input Alarm Delay [s]	<p style="text-align: center;">Alarms</p> Time to wait for No Input alarm rising (refer to Alarms paragraph). Note 1: It is highly recommended to set an Input Alarm Delay value different from zero in order to allow the input signal locking. Note 2: It is highly recommended to set an Input Alarm Delay value not too low (greater than or equal to 1 second) in order to allow the input seamless switching.	<ul style="list-style-type: none"> Min: 0.1 s Max: 25.5 s
System Mode & Auto-switching	Switching Time	Time and date of modes switching when Time Switch mode is enabled.	
Mode A / Mode B	Mode A / B	Selector of working mode. Only Digital/Analog re-transmitter mode is used by this device.	<ul style="list-style-type: none"> Tx DVBT Tx Analog (B,G / PAL)

Box	Parameter / Control	Description	Admitted Ranges / Values
Mode A / Mode B	HP input 1	Selector of the input1 for re-modulator used for Not Hierarchical Modulation or High Priority.	<ul style="list-style-type: none"> • ASI 1 • ASI 2 • ASI 3 • ASI 4 • GbE1 • GbE2
Mode A / Mode B	HP input 2	Selector of the input2 for re-modulator used for Not Hierarchical Modulation or High Priority. (this input is ignored in MFN and MFN MIP)	<ul style="list-style-type: none"> •
Mode A / Mode B	LP input 1	Selector of the input1 for re-modulator used for Hierarchical Modulation or Low Priority.	<ul style="list-style-type: none"> •
Mode A / Mode B	LP input 2	Selector of the input2 for re-modulator used for Hierarchical Modulation or Low Priority. (this input is ignored in MFN and MFN MIP)	

Box	Parameter / Control	Description	Admitted Ranges / Values
Mode A / Mode B	Input ITU470	Selector of input ITU470.	<ul style="list-style-type: none"> • SDI 1 • SDI 2
Mode A / Mode B	Audio ITU470	Selector of Audio ITU470.	<ul style="list-style-type: none"> • ch. 1,2 • ch. 3,4
Switching Rules Mode A / B	No Input, No MIP	Auto-switch alarms mask. Refer to Switching modes rules paragraph for a detailed description of the switching rules and conditions.	<ul style="list-style-type: none"> • Checked: Use rule • Not checked: Do not use rule

3.4.3 Modes switching rules

Four switching rules are provided in order to cover different requirements:

- **Manual:** switch between mode A and mode B by selecting one mode using the Manual Selector. The selected mode is always enabled until the user selects the other one.
- **Auto:** switch between mode A and mode B using the rules shown in the following table. One mode is enabled until at least one of the alarms associated to the enabled automatic switch rules is rising, then a countdown starts and, if the parameter doesn't regain a normal status during the timeout, the device switches to the other mode.

Table 5. Autoswitch rules

Mode	Autoswitch rules
TX DVB-T	<p>No Input: selected TS input not locked. No input Alarm should be enabled in the RF Off alarms mask. It is associated to the <i>No Input</i> alarm.</p> <p>No MIP: MIP packets, in SFN and SFN Local transmission modes, not present in the selected TS. No MIP Alarm should always be enabled in the RF Off alarms mask. It is associated to the <i>DVB-T No MIP</i> alarm.</p>
Tx Analog (B,G / PAL)	<p>No Input: selected SDI input not locked. No input Alarm should be enabled in the RF Off alarms mask. It is associated to the <i>No Input</i> alarm.</p>

- **Opto:** switch between mode A and mode B by selecting one mode using the Opto 1 input with the following rules:
 - **1 – Open:** Mode A.
 - **0 – Closed:** Mode B.
- **Time:** switch between mode A and mode B at the specified Date and Time. Switching will happen only one time from A to B. In order to set the Switching Time, select hours, minutes, seconds, days, months and years, and click on up/down arrows to increase/decrease them.

3.4.4 HP/LP INPUT

These commands allow the setting of the seamless parameters and monitoring of the seamless status for Not Hierarchical Modulation (High Priority) and Hierarchical Modulation (High Priority and Low Priority).

The following table shows all the commands and indicators available. following table shows all the commands and indicators available.

The screenshot displays a configuration interface for two ports, HP and LP. Each port has a main configuration section and two input-specific sections (Input 1 and Input 2).

HP Input Main Configuration:

- Force Input: None
- Priority Input: Input 1
- Selected Input: Input 1
- Switch State: Seamless

HP Input 1:

- Network Delay [100 ns]: 4.008.861
- Input Watchdog:
- Late MIP:
- Input Not Valid:
- PMT CRC Error:
- PAT CRC Error:
- MIP CRC Error:
- Sync Error:
- Packet Jitter Error:
- Transport Error Flag:
- ASI Word Error:
- MIP Priority Error:
- Checkmarks: PMT CRC, PAT CRC, MIP CRC, Sync Error, Packet Jitter, Transport Error Flag, ASI Word Error, MIP Priority Error.

HP Input 2:

- Network Delay [100 ns]: 3.983.211
- Input Watchdog:
- Late MIP:
- Input Not Valid:
- PMT CRC Error:
- PAT CRC Error:
- MIP CRC Error:
- Sync Error:
- Packet Jitter Error:
- Transport Error Flag:
- ASI Word Error:
- MIP Priority Error:
- Checkmarks: PMT CRC, PAT CRC, MIP CRC, Sync Error, Packet Jitter, Transport Error Flag, ASI Word Error, MIP Priority Error.

LP Input Main Configuration:

- Force Input: None
- Priority Input: Input 1
- Selected Input: Input 1
- Switch State: Seamless

LP Input 1:

- Network Delay [100 ns]: 3.984.610
- Input Watchdog:
- Late MIP:
- Input Not Valid:
- PMT CRC Error:
- PAT CRC Error:
- MIP CRC Error:
- Sync Error:
- Packet Jitter Error:
- Transport Error Flag:
- ASI Word Error:
- MIP Priority Error:
- Checkmarks: PMT CRC, PAT CRC, MIP CRC, Sync Error, Packet Jitter, Transport Error Flag, ASI Word Error, MIP Priority Error.

LP Input 2:

- Network Delay [100 ns]: 3.996.008
- Input Watchdog:
- Late MIP:
- Input Not Valid:
- PMT CRC Error:
- PAT CRC Error:
- MIP CRC Error:
- Sync Error:
- Packet Jitter Error:
- Transport Error Flag:
- ASI Word Error:
- MIP Priority Error:
- Checkmarks: PMT CRC, PAT CRC, MIP CRC, Sync Error, Packet Jitter, Transport Error Flag, ASI Word Error, MIP Priority Error.

Table 6. Tuner management

Box	Parameter / Control	Description	Admitted Ranges / Values
HP Input	Force Input	<p>Force input mode. If “None” option is selected, then the device operates the automatic seamless switching, using the selected priority input if available, and switching to the other input when the priority input is no more available.</p> <p>When Force input 1 or 2 is selected, the device works only with the input 1 or 2, and it doesn't operate the automatic switching.</p>	<ul style="list-style-type: none"> • None • Force Input 1 • Force Input 2
HP Input	Priority input	<p>This command allows setting the priority input. Selected priority input shall be the actual used one, until no error occurs on it. When an error is detected on priority input, device automatically switches to the other input, and it will come back again to use the priority input when this one shall be available again.</p>	<ul style="list-style-type: none"> • No priority • Input 1 • Input 2
HP Input	Selected input	<p>It shows the actual logic input used</p>	<ul style="list-style-type: none"> • Input 1 • Input 2

Box	Parameter / Control	Description	Admitted Ranges / Values
HP Input	Switch State	This monitor shows the current device switch state. When both the two inputs are available, the input seamless switching is possible; else, if only one input is available, then the switching is no more available. If some error occurs on both inputs, device can't switch and it can't use any input.	<ul style="list-style-type: none"> • Stop • Input 1 only • Input 2 only • Seamless • Wait
HP Input / Input 1 or Input 2	Network Delay [100 ns]	This monitor shows the Network Delay, measured analyzing MIP contained in the input. This delay is expressed in units of 100 ns.	<ul style="list-style-type: none"> • Min: 0 • Max: 9999999
HP Input / Input 1 or Input 2	PMT CRC flag	This check isn't implemented in the actual version.	<ul style="list-style-type: none"> • Checked: Alarm enabled • Not checked: Alarm not enabled

Box	Parameter / Control	Description	Admitted Ranges / Values
HP Input / Input 1 or Input 2	PAT CRC flag	This flag enables the detection of CRC errors in the PAT to force a switching to the other input. By disabling this rule the detection of a PAT CRC errors doesn't force the switching of inputs not raises any alarm.	<ul style="list-style-type: none"> • Checked: Alarm enabled • Not checked: Alarm not enabled
HP Input / Input 1 or Input 2	MIP CRC flag	This flag enables the detection of CRC errors in the MIP to force a switching to the other input. By disabling this rule the detection of a MIP CRC errors doesn't force the switching of inputs not raises any alarm.	<ul style="list-style-type: none"> • Checked: Alarm enabled • Not checked: Alarm not enabled
HP Input / Input 1 or Input 2	Sync Error flag	This flag enables the detection of Sync Error to force a switching to the other input. By disabling this rule the detection of Sync Error doesn't force the switching of inputs not raises any alarm.	<ul style="list-style-type: none"> • Checked: Alarm enabled • Not checked: Alarm not enabled
HP Input / Input 1 or Input 2	Packet Jitter flag	This flag enables the detection of TS packet out of time reception to force a switching to the other input. By disabling this rule the detection of a packet jitter error doesn't force the switching of inputs not raises any alarm.	<ul style="list-style-type: none"> • Checked: Alarm enabled • Not checked: Alarm not enabled
HP Input / Input 1 or Input 2	Transport Error flag	This flag enables the detection of Transport Error flag to force a switching to the other input. By disabling this rule the detection of a Transport Error flag doesn't force the switching of inputs not raises any alarm.	<ul style="list-style-type: none"> • Checked: Alarm enabled • Not checked: Alarm not enabled

Box	Parameter / Control	Description	Admitted Ranges / Values
HP Input / Input 1 or Input 2	ASI Word Error flag	This flag enables the detection of the ASI Word Errors to force a switching to the other input. By disabling this rule the detection of the ASI Word Errors doesn't force the switching of inputs not raises any alarm.	<ul style="list-style-type: none"> • Checked: Alarm enabled • Not checked: Alarm not enabled
HP Input / Input 1 or Input 2	MIP Priority Error flag	This flag enables the check of the MIP priority to force a switching to the other input. By disabling this rule the detection of the MIP priority Errors doesn't force the switching of inputs not raises any alarm.	<ul style="list-style-type: none"> • Checked: Alarm enabled • Not checked: Alarm not enabled
HP Input / Input 1 or Input 2	Input watchdog	This alarm is raised when MIP is missing	<ul style="list-style-type: none"> • Gray: alarm not present or masked • Red: alarm raised
HP Input / Input 1 or Input 2	Late MIP	This alarm is high when the MIP in one of the two seamless inputs of the current mode, is not in its expected position. This can be caused by a too high delay on the input.	<ul style="list-style-type: none"> • Gray: alarm not present or masked • Red: alarm raised
HP Input / Input 1 or Input 2	Input Not Valid	This alarm is raised when any of the following alarm is raised and is turned off only when the Input is good enough to allows to work in seamless properly	<ul style="list-style-type: none"> • Gray: alarm not present or masked • Red: alarm raised

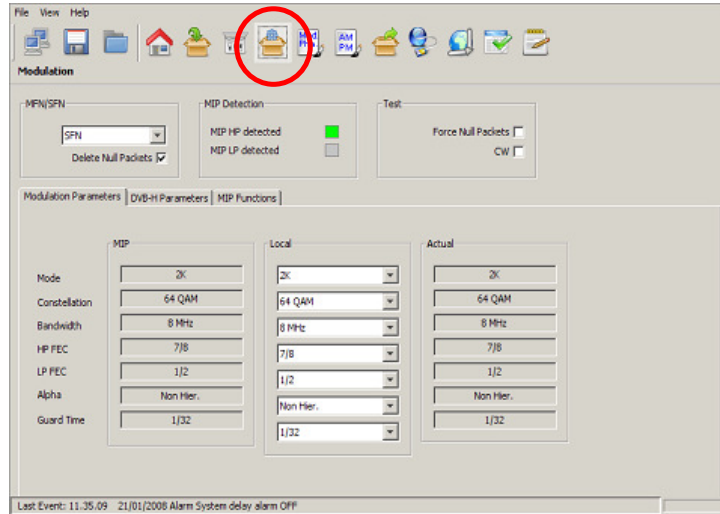
Box	Parameter / Control	Description	Admitted Ranges / Values
HP Input / Input 1 or Input 2	PMT CRC Error	PMT CRC Error rise this alarm	<ul style="list-style-type: none"> • Gray: alarm not present or masked • Red: alarm raised
HP Input / Input 1 or Input 2	PAT CRC Error	PAT CRC Error rise this alarm	<ul style="list-style-type: none"> • Gray: alarm not present or masked • Red: alarm raised
HP Input / Input 1 or Input 2	MIP CRC Error	MIP CRC Error rise this alarm	<ul style="list-style-type: none"> • Gray: alarm not present or masked • Red: alarm raised
HP Input / Input 1 or Input 2	Sync Error	Sync Error rise this alarm	<ul style="list-style-type: none"> • Gray: alarm not present or masked • Red: alarm raised
HP Input / Input 1 or Input 2	Packet Jitter Error	Packet Jitter Error rise this alarm	<ul style="list-style-type: none"> • Gray: alarm not present or masked
HP Input / Input 1 or Input 2	Transport Error Flag	Transport Error Flag rise this alarm	<ul style="list-style-type: none"> • Red: alarm raised
HP Input / Input 1 or Input 2	ASI word Error	ASI word Error rise this alarm	

Box	Parameter / Control	Description	Admitted Ranges / Values
HP Input / Input 1 or Input 2	Network delay Error	This alarm is raised when the TS Network delay is greater than the Maximum delay parameter, extracted from its MIP	<ul style="list-style-type: none"> • Gray: alarm not present or masked • Red: alarm raised • Gray: alarm not present or masked • Red: alarm raised • Gray: alarm not present or masked • Red: alarm raised
HP Input / Input 1 or Input 2	MIP priority error	This alarm is raised when select a low priority TS as HP input or a High priority TS as LP input	<ul style="list-style-type: none"> • Gray: alarm not present or masked • Red: alarm raise

3.4.5 MODULATION

Click on Modulation button icon, highlighted in the next figure, to access the modulation window.

Figure 9. Modulation window: modulation parameters



The Modulation window allows actual modulation parameters monitoring and modulator setting/monitoring. These settings are always editable but are applied **only when the re-modulator working mode is enabled**.

3.4.6 Modulator management

These commands and indicators allow the setting and monitoring of modulator's synchronization options, MIP detector and the enabling of Test options.

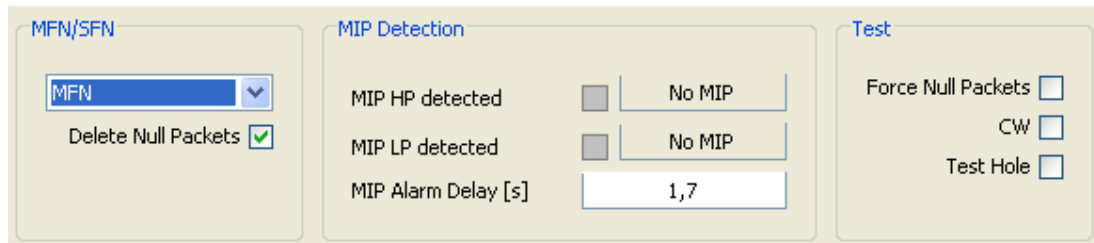


Figure 10. Modulator management

Table 7. Modulation management

Box	Parameter/ Control	Description	Admitted Ranges / Values
MFN / SFN	MFN/SFN	<p>Selector of Network's Transmitters Synchronization. Network Synchronization parameter setting</p> <p>Refer to _____ paragraph.</p> <p>_____ input switching work only in SFN and SFN local,</p> <p>Note: the seamless _____ seamless input switching is disabled and the input is forced to input 1 In MFN and MFN MIP</p>	<ul style="list-style-type: none"> • MFN • MFN MIP • SFN • SFN Local
MFN / SFN	Delete Null Packets	<p>Delete null packets enabling check box.</p> <p>In SFN and SFN Local transmission modes, this option is disabled by default and can't be enabled.</p> <p>In MFN and MFN MIP transmission modes, this option is enabled by default.</p>	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled
MIP Detection	MIP HP/LP detected	Detection of MIP packets in HP/LP streams.	<ul style="list-style-type: none"> • Green: Detected • Grey: Not detected

Box	Parameter/ Control	Description	Admitted Ranges / Values
MIP Status	MIP HP/LP Status	<p>Show the status of the MIP</p> <p>Note: the Network delay Error is ? when the TS input (HP or LP) network delay is greater than the MAX delay written in is MIP</p>	<ul style="list-style-type: none"> • No MIP • MIP OK • Wrong MIP priority • CRC Error • Network delay error
MIP Detection	MIP Alarm Delay [s]	<p style="text-align: center;">Alarms</p> <p>Time to wait for No MIP alarm rising expressed in seconds (refer to paragraph).</p> <p>Note: It is highly recommended to set a MIP Alarm Delay value different from zero as to allow the MIP detection.</p>	<ul style="list-style-type: none"> • Min: 1 s • Max: 25.5 s
Test	Force Null Packets	Null data packets transmission enabling check box.	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled

<i>Box</i>	<i>Parameter/ Control</i>	<i>Description</i>	<i>Admitted Ranges / Values</i>
Test	CW	CW test enabling check box.	<ul style="list-style-type: none">• Checked: Enabled• Not checked: Disabled

3.4.7 Network Synchronization parameters setting

Four Network Synchronization modes are available:

- **Multi Frequency Network mode using local parameters (MFN):** The transmitter is not synchronized with any network. No input MIP is needed and Clock Reference can be internal.
- **Multi Frequency Network mode using MIP parameters (MFN MIP):** The transmitter is not synchronized with any network but MIP sets the modulation parameters. Input MIP is needed and Clock Reference can be internal.
- **Single Frequency Network mode (SFN):** The transmitter is synchronized with a Network of transmitters on the same frequency. MIP is needed and Clock Reference must be external or GPS.
- **Single Frequency Network mode using local parameters (SFN Local):** The transmitter is synchronized with a Network of transmitters but for testing purposes the modulation parameters are set locally. Input MIP is needed for 1PPS synchronization and Clock Reference must be external or GPS.

The following table provides a description of the available parameters setting for the network modes.

Table 8. Network Synchronization parameters setting

Parameters	MFN	SFN	MFN + MIP	SFN Local
Mode	Local	MIP	MIP	Local
Constellation	Local	MIP	MIP	Local
FEC HP	Local	MIP	MIP	Local
FEC LP	Local	MIP	MIP	Local
Transmission	Local	MIP	MIP	Local
Time Slicing HP	Local	MIP	MIP	Local
Time Slicing LP	Local	MIP	MIP	Local
Guard Time	Local	MIP	MIP	Local
BW	Local	MIP	MIP	Local
Alpha	Local	MIP	MIP	Local
Input HP	Local	Local	Local	Local
Input LP	Local	Local	Local	Local
Interleaver	Local (for 8k mode only native)	MIP	MIP	Local (for 8k mode only native)
MPE FEC HP	Local	MIP	MIP	Local
MPE FEC LP	Local	MIP	MIP	Local
Cell Id enable	Local	Local	Local	Local
Cell Id	Local (only if enabled)	MIP or Local (only if enabled) Function from MIP can be enabled or disabled	MIP or Local (only if enabled) Function from MIP can be enabled or disabled	Local (only if enabled)
Frequency Offset	Local	MIP or Local (only if enabled) Function from MIP can be enabled or disabled	MIP or Local (only if enabled) Function from MIP can be enabled or disabled	Local

Parameters	MFN	SFN	MFN + MIP	SFN Local
Time Offset	Local	MIP or Local (only if enabled) Function from MIP can be enabled or disabled	MIP or Local (only if enabled) Function from MIP can be enabled or disabled	Local
Del Null Packet	Can be enabled or disabled	Must be disabled	Can be enabled or disabled	Must be disabled
Frequency Reference	Can be internal or external	Must be external	Can be internal or external	Must be external

3.4.8 Modulation parameters

These commands and indicators allow the setting of modulation parameters. This includes the monitoring of parameters carried by MIP in SFN configuration and of actual modulation parameters for Digital Re-transmitter mode.

Note: ARK-T read only the modulation parameters of HP input MIP

The screenshot displays the 'Modulation Parameters' configuration window. At the top, there are tabs for 'DVB-H Parameters', 'MIP Functions', and 'ITU'. The main area is divided into three columns: 'MIP', 'Local', and 'Actual'. Each column lists seven parameters: Mode, Constellation, Bandwidth, HP FEC, LP FEC, Alpha, and Guard Time. The 'MIP' column uses text input fields, while the 'Local' and 'Actual' columns use dropdown menus. The values shown are: Mode (8K), Constellation (64 QAM), Bandwidth (8 MHz), HP FEC (3/4), LP FEC (1/2), Alpha (Non Hier.), and Guard Time (1/8).

Figure 11. Modulation parameters

Table 9. Modulation parameters

Box	Parameter/ Control	Description	Admitted Ranges / Values
MIP	Mode	Transmission mode: set by MIP.	<ul style="list-style-type: none"> • 2K • 4K • 8K
Local		Transmission mode: locally set.	
Actual		Current transmission mode	
MIP	Constellation	Constellation for current modulation scheme: set by MIP.	<ul style="list-style-type: none"> • QPSK • 16-QAM • 64-QAM
Local		Constellation for current modulation scheme: locally set.	
Actual	Bandwidth	Current constellation for modulation scheme.	<ul style="list-style-type: none"> •
MIP		Bandwidth: set by MIP.	

Box	Parameter/ Control	Description	Admitted Ranges / Values
Actual		Current bandwidth.	
MIP	HP/LP FEC	HP/LP stream code rate: set by MIP.	<ul style="list-style-type: none"> • 1/2 • 2/3 • 3/4 • 5/6 • 7/8
Local		HP/LP stream code rate: locally set.	
Actual		Current HP/LP stream code rate.	
MIP	Alpha	Hierarchy information for current scheme: set by MIP.	<ul style="list-style-type: none"> • NH; • a=1; • a=2; • a=4.
Local		Hierarchy information for current scheme: locally set.	
Actual		Current Hierarchy information for current scheme.	
MIP	Guard Time	Guard interval: set by MIP.	<ul style="list-style-type: none"> • 1/32

Box	<i>Parameter/ Control</i>	Description	Admitted Ranges / Values

3.4.9 DVB-H parameters

These commands and indicators allow the setting of options for DVB-H transmission, the monitoring of parameters carried by MIP in SFN configuration and of actual DVB-H options.

Note: ARK-T read only the DVB-H parameters of HP input MIP

Figure 12. DVB-H parameters

	MIP	Local	Actual
Time Slicing HP	Not Used	Not Used	Not Used
Time Slicing LP	Not Used	Not Used	Not Used
MPE FEC HP	Not Used	Not Used	Not Used
MPE FEC LP	Not Used	Not Used	Not Used
Interleaver	Native	Native	Native

*DVB-H parameters.**Table 10*

Box	Parameter/ Control	Description	Admitted Ranges / Values
MIP	Time Slicing HP/LP	Enabling of time slice transmission of the HP/LP stream: set by MIP.	<ul style="list-style-type: none"> • Used • Not used
Local		Enabling of time slice transmission of the HP/LP stream: locally set.	
Actual		Current enabling status of time slice transmission.	
MIP	MPE FEC HP/LP	HP/LP MPE-FEC enabling: set by MIP.	<ul style="list-style-type: none"> • Used • Not used
Local		HP/LP MPE-FEC enabling: locally set.	
Actual		Current HP/LP MPE-FEC enabling status.	
MIP	Interleaver	Interleaver type selector: set by MIP.	<ul style="list-style-type: none"> • Used • Not used
Local		Interleaver type selector: locally set.	
Actual		Interleaver type selector status.	

3.4.10 MIP functions

These commands and indicators allow the enabling and monitoring of MIP functions in SFN configuration, the setting of local functions and the monitoring of the actual functions used by modulator.

Note: ARK-T read only the function of HP input MIP

The screenshot displays the 'MIP Functions' configuration window, which is divided into three main sections: MIP, Local, and Actual. The window also has tabs for 'Modulation Parameters', 'DVB-H Parameters', and 'ITU'.

Section	Parameter	Value
MIP	<input type="checkbox"/> Cell ID	0
	Max Delay [100ns]	8.000.333
	<input type="checkbox"/> Freq. Offset [Hz]	0
	<input type="checkbox"/> Time Offset [100 ns]	0
	<input type="checkbox"/> Tx Power [0,1 dB]	
	<input type="checkbox"/> Func.Bw	
	Function Cell ID enabled	<input type="checkbox"/>
	Function Tag Cell ID	<input type="checkbox"/>
	Function Ch.Bw enabled	<input type="checkbox"/>
	Function Tag Ch.Bw	<input type="checkbox"/>
Local	<input type="checkbox"/> Cell ID	0
	User Delay	0
	Frequency Offset [Hz]	0
	Time Offset [100 ns]	0
	Tx.ID Broadcast Enable	<input type="checkbox"/>
Actual	Cell ID	0
	Delay [100 ns]	8.000.333
	Freq. Offset [Hz]	0
	Time Offset [100 ns]	0
	Center Freq. [Hz]	474.000.000
	HP Network Delay [100 ns]	7.145.552
	LP Network Delay [100 ns]	0
Device Delay [100 ns]	0	

Additional controls in the Local section include 'Tx ID' (0) and 'Standard' (DVB-T selected, DVB-H unselected).

Figure 13. MIP functions

Box	Parameter / Control	Description	Admitted Ranges / Values
MIP	Cell Id enable	MIP cell ID function enabling	<ul style="list-style-type: none"> Checked: Enabled Not checked: Disabled
Local		General Cell Id enabling. Must be enabled to insert Cell Id into output TPS.	
MIP	Cell ID	MIP cell ID monitoring.	<ul style="list-style-type: none"> Min: 0 Max: 65,535
Local		Local Cell ID setting.	
Actual		Used Cell ID monitoring.	
MIP	Max Delay [100ns]	MIP max delay function monitoring	
Local	User Delay	<p>User delay setting.</p> <p>This value is added to the MIP max delay to calculate the Used delay</p>	<ul style="list-style-type: none"> Min: - 8388608 Max: 8388607
Actual	Delay [100ns]	<p>Used delay monitoring.</p> <p>In SFN this value is calculated adding the MIP max delay, the Local user delay, the MIP Time offset, the Local time offset and the Device delay</p> <p>In MFN this value is calculated adding the Local user delay and the Device delay</p> <p>Note: this value must be greater than the HP and LP network delay</p>	<ul style="list-style-type: none"> Min: 0 Max: 9,999,999

Box	Parameter / Control	Description	Admitted Ranges / Values
MIP	Freq. Offset [Hz]	MIP frequency offset function enabling and monitoring	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled
Local		User frequency offset setting.	<ul style="list-style-type: none"> • Min: -500,000 Hz • Max: 500,000 Hz
Actual		Used frequency offset monitoring.	
MIP	Time Offset [100ns]	MIP time offset function enabling and monitoring In SFN This value is added to the MIP max delay to calculate the Used delay	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled
Local		User time offset setting. In SFN This value is added to the MIP max delay to calculate the Used delay	<ul style="list-style-type: none"> • Min: -32,768 • Max: 32,767
Actual		Used time offset monitoring.	

Box	Parameter / Control	Description	Admitted Ranges / Values
MIP	Tx Power [0.1dB]	NOT IMPLEMENTED (MIP Tx power function enabling and monitoring).	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled
MIP	Func.Bw	NOT IMPLEMENTED (Function Bw enabling and monitoring).	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled
MIP	Function Cell ID enabled	MIP Cell ID function enabling status.	<ul style="list-style-type: none"> • Green: enabled • Grey: disabled
MIP	Function Tag Cell ID.	Cell ID Tag detection.	<ul style="list-style-type: none"> • Green: present • Grey: not present
MIP	Function Ch.Bw enabled	NOT IMPLEMENTED (MIP channel bandwidth function enabling status).	<ul style="list-style-type: none"> • Green: enabled • Grey: disabled

Box	Parameter / Control	Description	Admitted Ranges / Values
MIP	Function Tag Ch.Bw	NOT IMPLEMENTED (Cannel bandwidth Tag detection).	<ul style="list-style-type: none"> Green: present Grey: not present
MIP	Wait for enable Cell ID	It displays if the cell ID has to be inserted immediately (Grey) or after the receiving of the broadcasting enable.	<ul style="list-style-type: none"> Green: present Grey: not present
MIP	Wait for enable Ch.Bw	NOT IMPLEMENTED (Not implemented in the actual version).	
Local	Tx ID Broadcast Enable	Tx ID 0 enabling.	<ul style="list-style-type: none"> Checked: Enabled Not checked: Disabled
Local	Tx ID	User Tx ID setting.	<ul style="list-style-type: none"> Min: 0 Max: 65,535

Box	Parameter / Control	Description	Admitted Ranges / Values
Local	Standard	User transmission standard setting.	<ul style="list-style-type: none"> • DVB-T <ul style="list-style-type: none"> ○ Checked: Enabled ○ Not checked: Disabled • DVB-H <ul style="list-style-type: none"> ○ Checked: Enabled ○ Not checked: Disabled
Actual	Center Freq. [Hz]	Used center frequency indicator.	
Actual	HP Network Delay [100ns]	Used HP input network delay indicator.	
Actual	LP Network Delay [100ns]	Used LP input network delay indicator.	

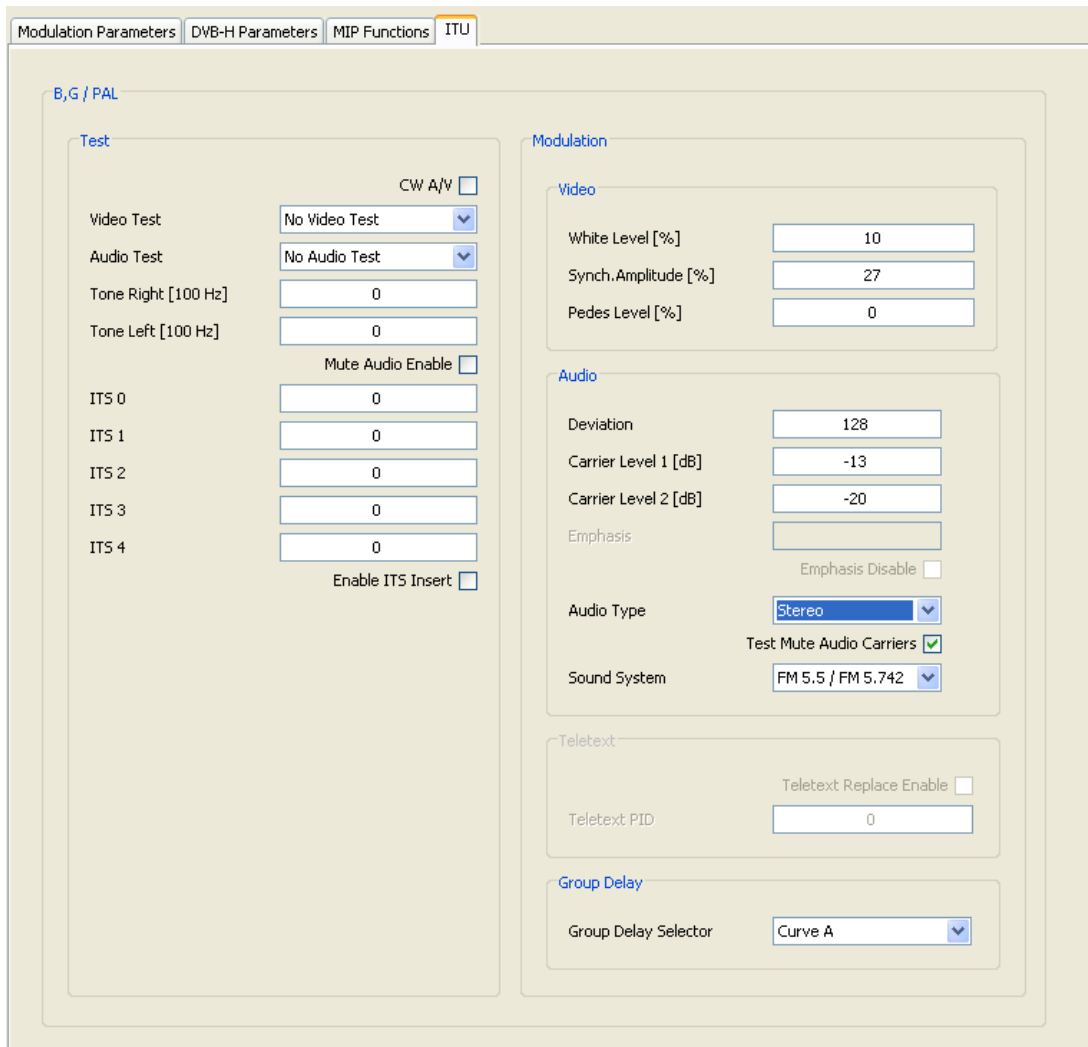
Box	Parameter / Control	Description	Admitted Ranges / Values
Actual	Device Delay [100ns]	Default device delay monitoring. This value is added to the MIP max delay to calculate the Used delay	<ul style="list-style-type: none">• Min: - 8388608• Max: 8388607

MIP functions**Table 11.**

3.4.11 ITU functions

These commands and indicators allow the enabling and monitoring of ITU functions.

Figure 14. ITU functions



Box	Parameter / Control	Description	Admitted Ranges / Values
Test	CW A/V	Enable for CW on video and audio carriers.	<ul style="list-style-type: none"> Checked: Enabled Not checked: Disabled

Box	Parameter / Control	Description	Admitted Ranges / Values
Test	Video Test	Video test color bars enable.	<ul style="list-style-type: none"> • Bars • No Video Test
Test	Audio Test	Audio test tones enable.	<ul style="list-style-type: none"> • No Video Test • Audio Tone
Test	Tone Right [100 Hz]	Right tone frequency setting.	<ul style="list-style-type: none"> • Min: 0 • Max: 127
Test	Tone Left [100 Hz]	Left tone frequency setting.	<ul style="list-style-type: none"> • Min: 0 • Max: 127
Test	Mute Audio Enable	Audio mute enable	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled
Test	ITS 0	Position of fixed line number 0 in output video.	<ul style="list-style-type: none"> • Min: 7 • Max: 622
Test	ITS 1	Position of fixed line number 1 in output video.	<ul style="list-style-type: none"> • Min: 7 • Max: 622
Test	ITS 2	Position of fixed line number 2 in output video.	<ul style="list-style-type: none"> • Min: 7 • Max: 622

Box	Parameter / Control	Description	Admitted Ranges / Values
Test	ITS 3	Position of fixed line number 3 in output video.	<ul style="list-style-type: none"> Min: 7 Max: 622
Test	ITS 4	Position of fixed line number 4 in output video.	<ul style="list-style-type: none"> Min: 7 Max: 622
Test	Enable ITS Insert	Enable fixed lines insertion in output video.	<ul style="list-style-type: none"> Checked: Enabled Not checked: Disabled
Modulation / Video	White Level [%]	Video white level setting. The level value is in percentage upon the synch level. The synch level is taken as 100% reference.	<ul style="list-style-type: none"> MIN: 10 MAX: 22 Step: 0,05
Modulation / Video	Synch. Amplitude [%]	Video synch amplitude setting. The level value is in percentage upon the synch level. The synch level is taken as 100% reference.	<ul style="list-style-type: none"> MIN: 22 MAX: 27,5 Step: 0,05
Modulation / Video	Pedes Level [%]	Video pedes level setting. The level value is in percentage upon the synch level. The synch level is taken as 100% reference.	<ul style="list-style-type: none"> MIN: 0 MAX: 7 Step: 0,05

Box	Parameter / Control	Description	Admitted Ranges / Values
Modulation / Audio	Deviation	Audio deviation.	<ul style="list-style-type: none"> Min: 0 Max: 255
Modulation / Audio	Carrier Level 1 [dB]	Audio 1 carrier level setting.	<ul style="list-style-type: none"> MIN: -7 MAX: -22 Step: 0,1
Modulation / Audio	Carrier Level 2 [dB]	Audio 2 carrier level setting. Not used for NTSC	<ul style="list-style-type: none"> MIN: -7 MAX: -22 Step: 0,1
Modulation / Audio	Emphasis	Audio emphasis value monitor.	
Modulation / Audio	Emphasis disable	Disable Audio emphasis	
Modulation / Audio	Audio Type	Audio type selector. Only the mono single carrier audio type is used for NTSC.	<ul style="list-style-type: none"> Mono Dual Carrier Dual Sound Stereo Mono Single Carrier
Modulation / Audio	Test Mute Audio Carriers	Remove the audio carrier.	<ul style="list-style-type: none"> Checked: Enabled Not checked: Disabled

Box	Parameter / Control	Description	Admitted Ranges / Values
Modulation / Audio	Sound System	Set the position of the two audio carriers.	PAL B, G <ul style="list-style-type: none"> • FM 5.5 / FM 5.742 PAL D, K <ul style="list-style-type: none"> • FM 6.5 / FM 6.742 • FM 5.5 / FM 6.258
Modulation / Teletex	Teletex Replace Enable	Replace enable for teletext. It is contained in elementary stream with above-specified PID.	<ul style="list-style-type: none"> • Not checked: teletext not replaced • Checked: teletext replaced
Modulation / Teletex	Teletex PID	PID of elementary stream containing teletext.	<ul style="list-style-type: none"> • Min: 0 • Max: 8191
Modulation / Group Delay	Group Delay Selector	Command for Group Delay Filter.	<ul style="list-style-type: none"> • Flat • Curve A • Curve B

3.5 PRE-CORRECTION TOOL

The ARK1-T system provides a pre-correction tool for both Module & Phase and AM/PM output signal pre-correction.

Remember to click on the *Save as* button the first time you change the factory default curves in order to do not overwrite them.

Before closing the connection to port 5000, save curves changes otherwise they will be lost.

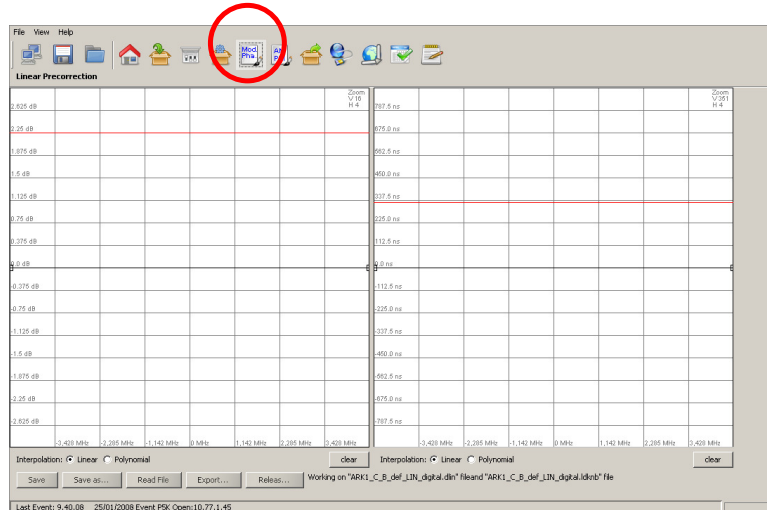
Note: the operation of uploading and downloading pre-correction curves moves a large amount of data from and to the device. The use of these tools over low bandwidth, not stable or high distances networks could cause frequently time-out disconnections and it is **not recommended**.

In order to correctly visualize Module & Phase and AM/PM windows of the GUI, the minimum required screen resolution is 1280 by 960 pixels. For lower screen resolutions, from 1024 per 768 pixels to 1280 by 800 pixels, use either the F11 function, Full Screen option, or download the standalone java application (executable *.jar file) through the *Download Software Standalone* button sited in the General window.

3.5.1 Module&Phase

Click on MOD. PHA. button icon, highlighted in the nex figure, to modify the complex filter curves for linear pre-correction.

Figure 15. Phase and module window



This tool provides two grids for the drawing of:

- Module of the filter's curve.
- Group Delay of the filter's curve.

The two curves are used to calculate the linear pre-correction coefficients. The curves are drawn by the interpolation of 1024 points referring to the points inserted and using a linear or polynomial interpolation algorithm.

Knob points can be added with a left-click of the mouse on the grid and deleted with a right-click, drag and move a point to change the curve.

Each coefficient variation, due to curves change, is saved in the FPGA "runtime" memory registers and dynamically changes the device's output.

The tool is prevented to send an "overflowing" amount of data to the device: curve changes will be applied only when the mouse button is released.

In the module grid, the red curve is used to monitor the current module curve calculating and saving. The last saved coefficients are locally downloaded from the FPGA runtime memory registers in order to redraw the curve.

Click two times the right mouse button on the grid to open the zoom menu. The “H” options are used to horizontally zoom (x01,x02,x04,x08,x16). The “V” options are used to vertically zoom (x01,x02,x04).

During the saving actions are created two nonlinear pre-correction files:

- *.dlin files: files containing digital coefficients values for Digital-IF linear pre-correction curves.
- *.alin files: files containing analog coefficients values for DVB-T Re-modulator linear pre-correction curves.

The following buttons allow the management of linear pre-correction files and the management of the connection to port 5000:

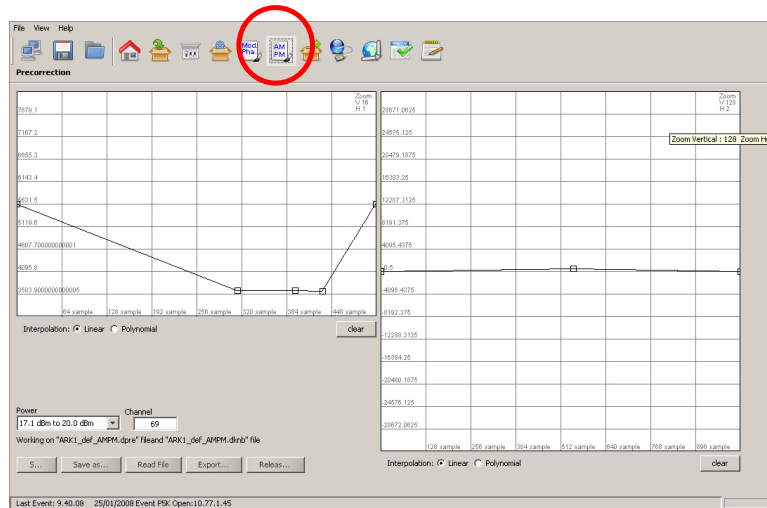
- **Save:** used to save in the device memory the current curves setting. The previously saved file will be overwritten except in the event that no files have been saved before; in this case a dedicated window appears in order to let the user name the new file.
- **Save as:** used to save in the device memory the current curves setting. The previously saved file will be overwritten with a new name. in the event that no files have been saved before, a new file will be created.
- **Read file:** used to reload the last saved file.
- **Export:** used to download pre-correction files on the user PC. A browser window allows the selection of the saving path.
- **Release:** release the connection in order to allow others remote machines to connect to port 5000 (refer to [Connection to port 5000](#) paragraph).

Files are separately managed in analog and in digital AGC mode.

3.5.2 AM/PM

Click on AM/PM button icon, highlighted in the next figure, to access the pre-correction window.

Figure 16. AM/PM window



Two main actions are possible in this section:

- AM/AM and AM/PM curve drawing: used to change the AM/PM pre-correction coefficient.
- AM/PM pre-correction files management: used to open or save AM/PM pre-correction setting file.

AM/AM and AM/PM curves are specific for each power range of each output channel.

The two curves are used to calculate the AM/PM pre-correction coefficients. The curves are drawn by the interpolation of 1024 points referring to the points inserted and using a linear or polynomial interpolation algorithm.

Knob points can be added with a left-click of the mouse on the grid and deleted with a right-click, drag and move a point to change the curve.

Each coefficient variation, due to curves change, is saved in the FPGA “runtime” memory registers and dynamically changes the device’s output.

The tool is prevented to send an “overflowing” amount of data to the device: curve changes will be applied only when the mouse button is released.

In the module grid, the red curve is used to monitor the current module curve calculating and saving. The last saved coefficients are locally downloaded from the FPGA runtime memory registers in order to redraw the curve.

Click two times the right mouse button on the grid to open the zoom menu. The “H” options are used to horizontally zoom (x01,x02,x04,x08,x16). The “V” options are used to vertically zoom (x01,x02,x04).

During saving actions are created two nonlinear pre-correction files:

- *.dpre files: files containing digital coefficients values.
- *.apre files: files containing analog coefficients values.

The following buttons allow the management of linear pre-correction files and the management of the connection to port 5000:

- **Save:** used to save in the device memory the current curves setting. The previously saved file will be overwritten except in the event that no files have been saved before; in this case a dedicated window appears in order to let the user name the new file.
- **Save as:** used to save in the device memory the current curves setting. The previously saved file will be overwritten with a new name. in the event that no files have been saved before, a new file will be created.
- **Read file:** used to reload the last saved file.
- **Export:** used to download pre-correction files on the user PC. A browser window allows the selection of the saving path.
- **Release:** release the connection in order to allow others remote machines to connect to port 5000 (refer to [Connection to port 5000](#) paragraph).

Files are separately managed in analog and in digital AGC mode.

3.5.3 Connection to port 5000

The connection to port 5000 is performed every time a pre-correction tool is opened through Mod.Pha. button and AM/PM button, from Java interface,. The pre-correction tool opens and keeps busy the connection to port 5000 till the connection releasing

The connection to this port precludes the possibility of:

- programming the device;
- allowing more than one user, the very same one that is keeping busy the connection, to open the pre-correction tools.

The Release button comes through these limits. It closes the connection to port 5000, close the Mod.Pha. / AM/PM window and opens the General window. Once clicked the Release buttons and before quitting the pre-correction tool, three options are provided:

- Continue: continue without saving;
- Save and Release: save and continue;
- Cancel: cancel the request of releasing the connection.

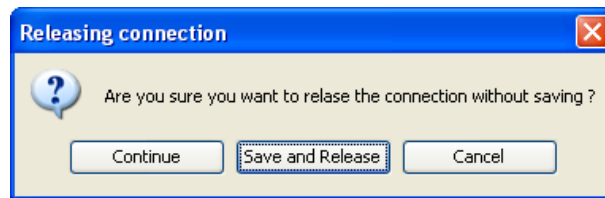


Figure 17. Realising connection

3.5.4 OUTPUT

Click on Output button icon, highlighted in the next figure, to access the output window.

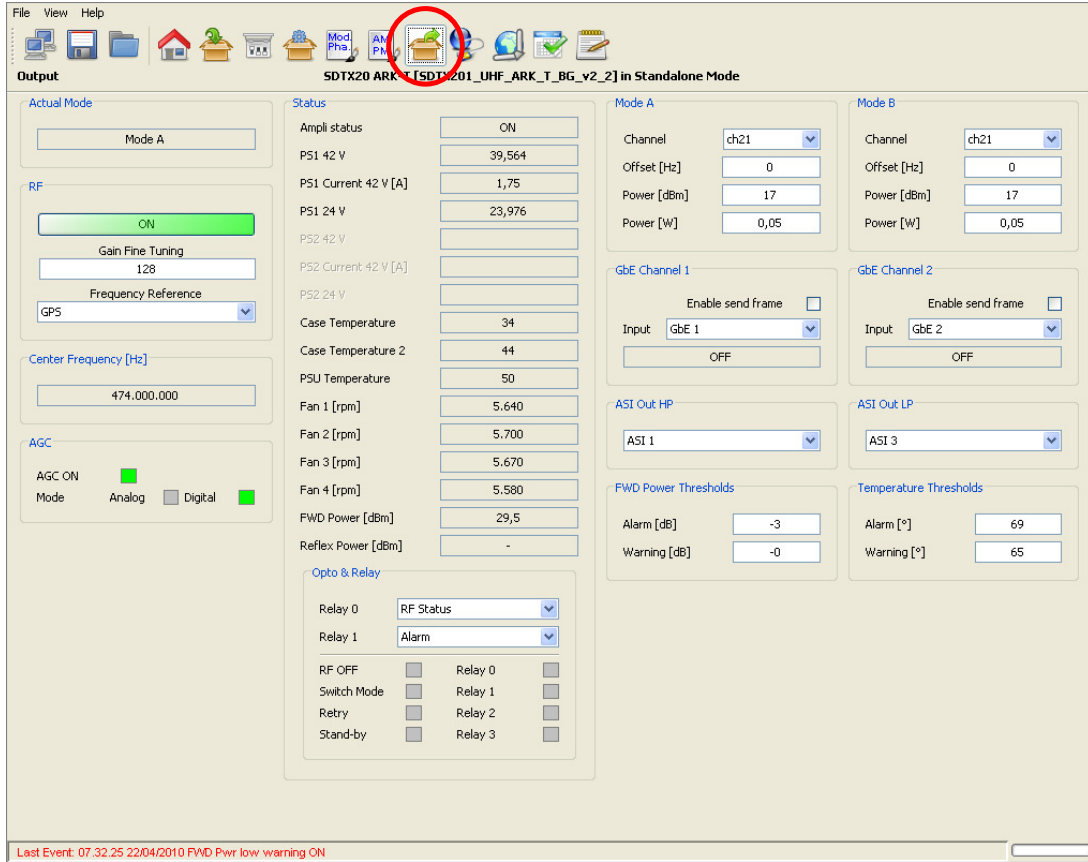


Figure 18. Output window

Use the Output window to change Ethernet, RF output and ASI output settings, and to monitor all available hardware indicators. Differently from ARK1 and ARK1-R devices, the ASI outputs are here used as a direct bypass of the specified inputs.

Output window

Box	Parameter / Control	Description	Admitted Ranges / Values
RF	ON / OFF	<p>Output RF signal enabling. The possible output RF signal status are the following:</p> <ul style="list-style-type: none"> • ON; • RF OFF: automatic switch off of the output signal (refer to Amplifier status); • OFF: manual switch off of the output signal. 	<ul style="list-style-type: none"> • Green: ON • Green: RF OFF • Red: OFF
RF	Frequency reference	<p>Frequency reference source selector. This command will select the reference source used to lock the internal clocks (10 MHz and 1 PPS). When set to internal the 10 MHz clock and 1 PPS generator runs unlocked. When set to external or GPS the 10 MHz clock is locked to the source selected and the 1 PPS counter reset is triggered by the source 1 PPS.</p> <p>Note: External 10 MHz, 1PPS and GPS shall be connected and locked when the External and GPS are selected as frequency references.</p>	<ul style="list-style-type: none"> • External • Internal • GPS

Box	Parameter / Control	Description	Admitted Ranges / Values
RF	Internal Freq. Ref. Tune	Internal frequency reference fine tuning setting. Allows the fine tuning of VCO, internal clock oscillator, with 60 Hz steps.	<ul style="list-style-type: none"> • Min: 0 • Max: 255
AGC	AGC ON	AGC status.	<ul style="list-style-type: none"> • Green: ON • Grey: OFF
AGC	Mode	Current AGC mode indicator. It is always digital.	<ul style="list-style-type: none"> • Analog/Digital: <ul style="list-style-type: none"> ○ Green: ON ○ Grey: OFF
Frequency Out [Hz]	Frequency Out [Hz]	Shows the output center frequency expressed in Hz.	

Box	Parameter / Control	Description	Admitted Ranges / Values
Status	Ampli status	Current amplifier status indicator.	<ul style="list-style-type: none">• On• Off• Restart• Stand-by off• GPS Off• Init• Alarm off• Rf off• Opto off• Change mode• Interlock ON

Box	Parameter / Control	Description	Admitted Ranges / Values
Status	PS1 28V / 42V	First PSU voltage indicator (values are expressed in V). It depends on the hardware type of the device: <ul style="list-style-type: none"> • 28V for SDTx 20 and SDTx 50; • 42V for SDTx 201 and SDTx 501; 	
Status	PS1 Current 28V / 42V [A]	First PSU current indicator (values are expressed in A) It depends on the hardware type of the device: <ul style="list-style-type: none"> • 28V for SDTx 20 and SDTx 50; • 42V for SDTx 201 and SDTx 501; 	
Status	PS1 24V	First PSU 24V indicator (values are expressed in V). Only in SDTX 201 and SDTX 501 version.	
Status	PS2 42V	Second PSU voltage indicator (values are expressed in V). Only in SDTX 501 version.	
Status	PS2 Current 42V [A]	Second PSU current indicator (values are expressed in A) Only in SDTX 501 version.	
Status	PS2 24V	Second PSU 24V indicator (values are expressed in V). Only in SDTX 501 version.	
Status	Case Temperature	Case temperature indicator (values are expressed in °C).	
Status	Case Temperature 2	2 nd Case temperature indicator (values are expressed in °C). Only in SDTX 200 version.	

Box	Parameter / Control	Description	Admitted Ranges / Values
Status	PSU Temperature	PSU temperature indicator (values are expressed in °C).	
Status	Fan 1	Fan 1 speed indicator (values are expressed in rpm). Used in SDTX20, SDTX50 and SDTX201	
Status	Fan 2	Fan 2 speed indicator (values are expressed in rpm). Used in SDTX20, SDTX50 SDTX201, and SDTX501	
Status	Fan 3	Fan 3 speed indicator (values are expressed in rpm). Used in SDTX201, and SDTX501	
Status	Fan 4	Fan 4 speed indicator (values are expressed in rpm). Used in SDTX201, and SDTX501	
Status	FWD Power [dBm]	Output forward power indicator (values are expressed in dBm).	
Status	Reflex Power [dBm]	Output reflex power indicator (values are expressed in dBm).	

Box	Parameter / Control	Description	Admitted Ranges / Values
Opto & Relay	Relay 0	Selector of Relay 0 mode.	<ul style="list-style-type: none"> • Alarm: indicator of an alarm condition • Mode: indicator of operating mode • RF Status: indicator output RF signal status (on/off)
Opto & Relay	Relay 1	Selector of Relay 1 mode.	<ul style="list-style-type: none"> • Alarm: indicator of an alarm condition • Mode: indicator of operating mode
Opto & Relay	Relay 0...3	Relays status indicators.	<ul style="list-style-type: none"> • Green: Alarm on/Mode A/RF Off • Grey: Alarm off/Mode B/RF On

Box	Parameter / Control	Description	Admitted Ranges / Values
Opto&Relay	Opto 0	RF Off Opto status indicators. Opto 0 is a output RF manual on/off switch: <ul style="list-style-type: none"> • Closed (0): RF on (default value) • Opened (1): RF off 	<ul style="list-style-type: none"> • Green: Closed (0) • Grey: Opened (1)
Opto&Relay	Opto 1	Switch mode Opto status indicators. When the Switch mode is set to Opto: <ul style="list-style-type: none"> • Closed (0): Switch to mode B • Opened (1): Switch to mode A 	<ul style="list-style-type: none"> • Green: Closed (0) • Grey: Opened (1)
Opto&Relay	Opto 2	Retry of amplifier alarms status indicators.(only in SDTX 201 version);	<ul style="list-style-type: none"> • Green: Closed (0) • Grey: Opened (1)

Box	Parameter / Control	Description	Admitted Ranges / Values
Opto&Relay	Opto 3	Stand-by enabling Opto status indicators: .(in version SDTX 20/50/201); <ul style="list-style-type: none"> • Closed (0): stand-by off • Opened (1): stand-by on Interlock Opto status indicators.(only in SDTX 501 version); <ul style="list-style-type: none"> • Closed (0): Interlock off • Opened (1): Interlock on 	<ul style="list-style-type: none"> • Green: Closed (0) • Grey: Opened (1)
Mode A / Mode B	Channel	Output channel.	Channel ranges are device's definition dependant.
Mode A / Mode B	Power [dBm]	Output power (expressed in dBm).	Output power ranges are device's definition dependant. Refer to Appendix C
Mode A / Mode B	Power [W]	Output power (expressed in W).	

Box	Parameter / Control	Description	Admitted Ranges / Values
Mode A / Mode B	Offset [Hz]	Output frequency offset (expressed in Hz).	<ul style="list-style-type: none"> Min: -4 MHz Max: 4 MHz
FWD Power Thresholds	Warning [dB]	Forward power warning threshold expressed in dBm.	<ul style="list-style-type: none"> Min: -16 dBm
FWD Power Thresholds	Alarm [dB]	Forward power alarm threshold expressed in dBm.	<ul style="list-style-type: none"> Max: 0 dBm
Temperature Thresholds	Warning	Case temperature warning threshold expressed in °C.	<ul style="list-style-type: none"> Min: 0 °C
Temperature Thresholds	Alarm	Case temperature alarm threshold expressed in °C.	<ul style="list-style-type: none"> Max: 100 °C
RTP 1	Enable send frame	Ethernet channels 1 transmission enabling.	<ul style="list-style-type: none"> Checked: Enabled Not checked: Disabled

Box	Parameter / Control	Description	Admitted Ranges / Values
RTP 1	Input	<p>Select which TS input shall be re-transmitted on RTP output channel 1.</p> <p>This selection is totally independent from the selection of the TS input of the modulator.</p>	<ul style="list-style-type: none"> • ASI 1 • ASI 2 • ASI 3 • ASI 4 • GbE1 • GbE2 • Seamless Output HP
RTP 2	Enable send frame	Ethernet channels 2 transmission enabling.	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled

Box	Parameter / Control	Description	Admitted Ranges / Values
RTP 2	Input	Select which TS input shall be re-transmitted on RTP output channel 2. This selection is totally independent from the selection of the TS input of the modulator.	<ul style="list-style-type: none">• ASI 1• ASI 2• ASI 3• ASI 4• GbE1• GbE2• Seamless Output LP

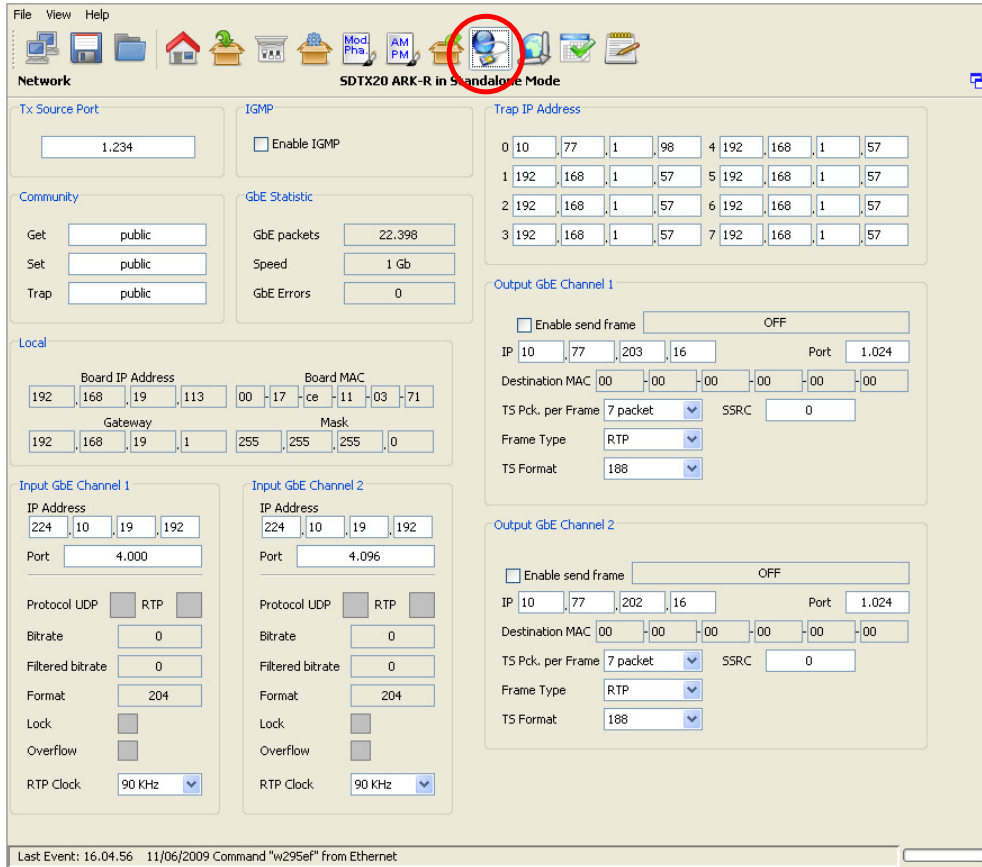
Box	Parameter / Control	Description	Admitted Ranges / Values
RTP 1 / RTP 2	Status	Select which TS input shall be re-transmitted on RTP output channel 1 and 2. This selection is totally independent from the selection of the TS input of the modulator.	<ul style="list-style-type: none">• Resolving IP Addr.• IP not found• No entry• Transmitting data• Transmitting data multicast• No TS input• ON• OFF

Box	Parameter / Control	Description	Admitted Ranges / Values
ASI OUT HP	ASI OUT HP	Select which Transport Stream shall be re-proposed on device's ASI output HP. This selection is totally independent from the selection of the TS input of the modulator.	<ul style="list-style-type: none">• ASI 1• ASI 2• ASI 3• ASI 4• GbE1• GbE2• Seamless Output HP

Box	Parameter / Control	Description	Admitted Ranges / Values
ASI OUT LP	ASI OUT LP	Select which Transport Stream shall be re-proposed on device's ASI output LP. This selection is totally independent from the selection of the TS input of the modulator.	<ul style="list-style-type: none">• ASI1• ASI2• ASI 3• ASI 4• GbE1• GbE2• Seamless Output LP

3.6 NETWORK

Click on Network button icon, highlighted in the next figure, to access the Network management window.



This window allows the Network management on both PRO-MPEG COP 3 RX and TX sides. It also allows the monitoring of the board IP and MAC addresses.

Note: The Clock Recovery Function, used in MFN transmissions of received streams on Ethernet channels 1 and/or 2, is based on the timestamps of incoming packets. UDP packets do not contain STS information therefore it is not allowed using GbE inputs with UDP protocol in MFN transmission mode.

Table 12. Network window

Box	Parameter / Control	Description	Admitted Ranges / Values
Local	Board IP address	Board IP address.	
Local	Board MAC address	Board MAC address.	
Local	Gateway	Gateway address.	
Local	Mask	Net Mask.	
Local	Tx Source Port	Board receiving port.	<ul style="list-style-type: none"> • Min: 0 • Max: 65,535
Trap IP address	0...7	Trap 0...7 destination IP address.	
IGMP	Enable IGMP	IGMP enabling.	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled
Input GbE Channel 1/2	IP Address	Channel 1/2 receiving IP address.	
Input GbE Channel 1/2	Port	Channel 1/2 receiving port.	<ul style="list-style-type: none"> • Min: 0 • Max: 65,535

Box	Parameter / Control	Description	Admitted Ranges / Values
Input GbE Channel 1/2	Protocol	Ethernet input packets protocol.	<ul style="list-style-type: none"> • UDP/RTP: <ul style="list-style-type: none"> ○ Green: Detected ○ Grey: Not detected
Input GbE Channel 1/2	Bit-rate [bit/s]	Bit-rate of TS from Ethernet input.	
Input GbE Channel 1/2	Filtered bit-rate [bit/s]	Bit-rate actually used by the modulator.	<ul style="list-style-type: none"> • Zero when the input is not selected • Equal to the total bit-rate, when Delete Null Packets disabled • Less than total bit-rate, when Delete Null Packets enabled
Input GbE Channel 1/2	Format	Received transmission format.	<ul style="list-style-type: none"> • 188 Bytes • 240 Bytes

Box	Parameter / Control	Description	Admitted Ranges / Values
Input GbE Channel 1/2	Lock	Ethernet input lock status indicator. The input Transport Stream is locked when no more than two consecutive Sync Byte are missed.	<ul style="list-style-type: none"> Green: Lock Grey: Not locked
Input GbE Channel 1/2	Sequence error	NOT IMPLEMENTED (Ethernet input Sequence error alarm status. This alarm condition occurs when an error in the sequence of input packets at IP level occurs.)	<ul style="list-style-type: none"> Red: Error Grey: No errors
Input GbE Channel 1/2	Overflow	Input GbE overflow alarm status. This alarm condition occurs when the input bit-rate exceeds the capability of the modulation (Ref. to ETSI EN 300 744).	<ul style="list-style-type: none"> Red: Alarm on Grey: Alarm off
Input GbE Channel 1/2	RTP Clock	RTP packets source clock reference.	<ul style="list-style-type: none"> 90 kHz 27 MHz
Gbe statistic	GBE Packets	Total amount of good frames received.	

Box	Parameter / Control	Description	Admitted Ranges / Values
Gbe statistic	Speed	Ethernet speed.	<ul style="list-style-type: none"> • 10 Mbit/s • 100 Mbit/s • 1 Gbit/s
Gbe statistic	GBE Errors	Total amount of bad frames received.	
Community	Get	Read community setting.	
Community	Set	Set community setting.	
Community	Trap	Trap community setting.	
Output GbE Channel 1/2	Enable send frame	Channel 1/2 Ethernet transmission enabling.	<ul style="list-style-type: none"> • Checked: Enabled • Not checked: Disabled
Output GbE Channel 1/2	IP	Channel 1/2 Ethernet transmission IP address.	
Output GbE Channel 1/2	Port	Port used for RTP/UDP data transmission	<ul style="list-style-type: none"> • Min: 0 • Max: 65,535

Box	Parameter / Control	Description	Admitted Ranges / Values
Output GbE Channel 1/2	Status	Ethernet transmission on channel 1/2 status indicator.	<ul style="list-style-type: none"> • Resolving IP Addr. • IP not found • No entry • Transmitting data • Transmitting data multicast • No TS Input • ON • OFF
Output GbE Channel 1/2	Destination MAC	Destination MAC address.	
Output GbE Channel 1/2	SSRC	SSRC identifier of the RTP transmission on channel 1-2.	

Box	Parameter / Control	Description	Admitted Ranges / Values
Output GbE Channel 1/2	TS Pck per Frame	Number of packets per frame.	<ul style="list-style-type: none">• Min: 1• Max: 7
Output GbE Channel 1/2	Frame type	Transmission protocol selector.	<ul style="list-style-type: none">• RTP• UDP
Output GbE Channel 1/2	TS Format	Transmission format.	<ul style="list-style-type: none">• 188 Bytes• 240 Bytes

3.7 GPS

Click on GPS button icon, highlighted in the nex figure, to access the GPS received statistics window.

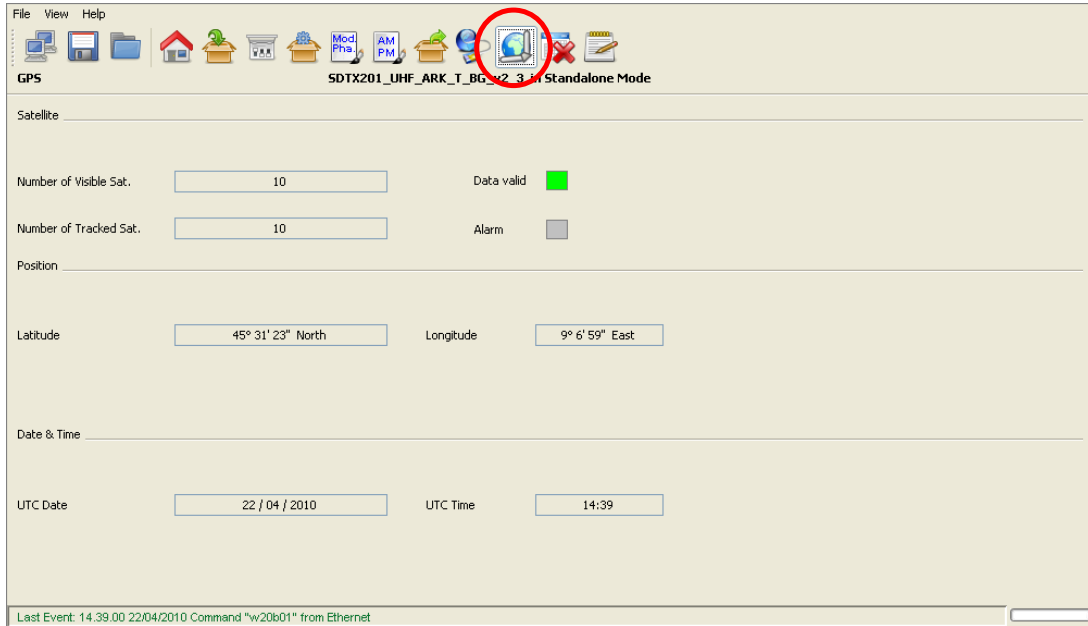


Figure 19. GPS window

GPS window

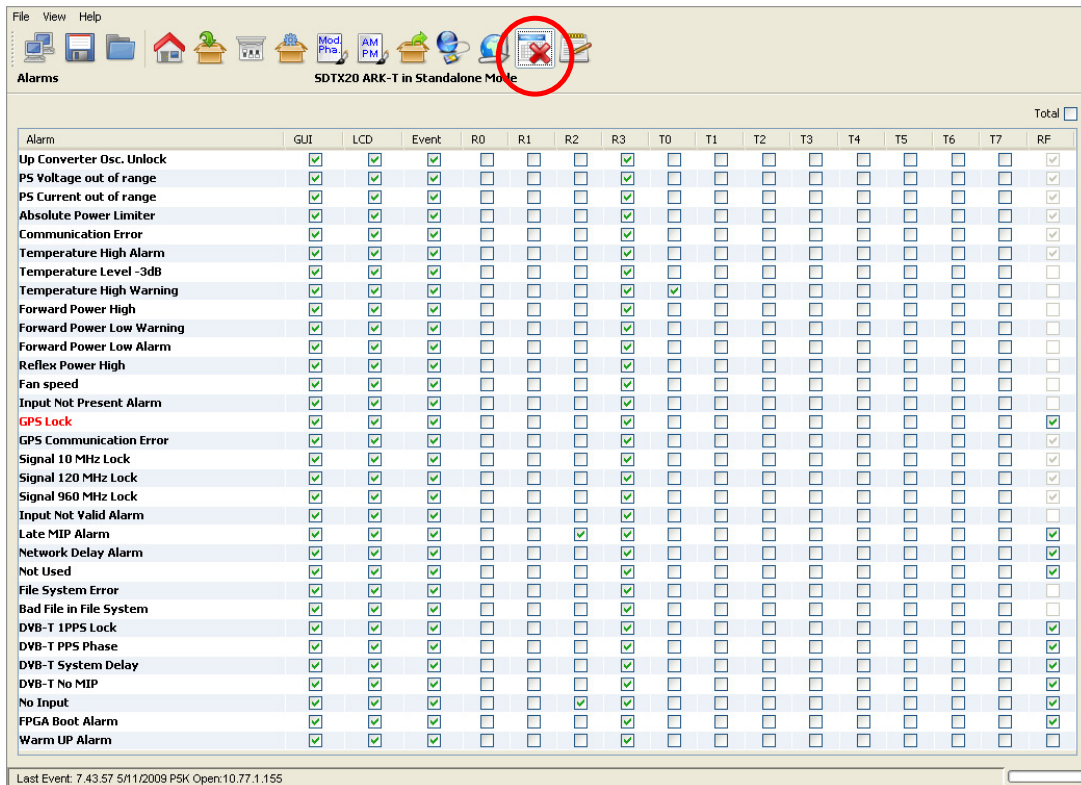
Table 13

Box	Parameter/ Control	Description	Admitted Ranges / Values
Satellite	#Number of Visible sat	Number of visible GPS satellites indicator.	
Satellite	#Number of Tracked sat	Number of tracked GPS satellites indicator.	
Satellite	Alarm	GPS alarm status indicator. This alarm is a logic OR between the GPS alarms (refer to Alarms paragraph).	<ul style="list-style-type: none"> • Red: Alarm on • Grey: Alarm off
Satellite	Data valid	Valid satellite signal receiving status indicator.	<ul style="list-style-type: none"> • Green: Valid • Grey: Not valid
Position	Latitude (°)	Site latitude expressed in degrees.	
Position	Longitude (°)	Site longitude expressed in degrees.	
Date & Time	UTC Time	Current time indicator. Each GPS satellite has an atomic clock and continually transmits messages containing the current time and date at the start of the message sent by the GPS itself.	
Date & Time	UTC Date	Current date indicator. Each GPS satellite has an atomic clock and continually transmits messages containing the current time and date at the start of the message sent by the GPS itself.	

3.8 ALARMS

Click on Alarms button icon, highlighted in the next figure, to access the alarms management window.

Figure 20. Alarms window



The Alarm window allows the setting of alarm masks and the monitoring of alarms status. Use alarm masks to select how and which alarm have to be notified.

Masks are organized in columns. The sixteen columns represent sixteen destinations of each alarm notification:

- **GUI:** the selected alarms status is notified on the Java alarm page icon.
- **LCD:** the selected alarms status is notified on LCD display lighting the alarm button and listing the alarms in the Alarms menu (refer to [LCD alarms](#) paragraph).
- **Event:** the selected alarms status generate an alarm event that will be logged in the event memory (refer to [Events](#) paragraph).
- **R0...R3:** the selected alarms switch on the corresponding relay.
- **T0...T7:** the selected alarms generate the corresponding trap messages (refer to [Network](#) paragraph to set destination IP addresses).
- **RF:** the selected alarms switch off the output RF signal. The RF mask is almost entirely fixed in order to avoid board damages or malfunctioning.

In the Alarms window, when an alarm condition occurs, the relative alarm is red highlighted. The Total check box enables all alarms-to-masks associations. **Remember to enable the RF Off alarms mask of DVB-T alarms.**

Table 14. Alarms window

Alarm	Description and limitations	Troubleshooting
Up converter Osc. Unlock	PLL of the Up converter board not locked to 120 MHz clock.	<ul style="list-style-type: none"> Hardware fault
PS Voltage out range (for STDX 20/50/201) or PS1/PS2 Voltage alarm (for STDX 501)	Voltage out of range. The ranges are: <ul style="list-style-type: none"> 20V up to 30V for SDTx_ARK1-T SDTX 20/50; 38V up to 44V for SDTx_ARK1-T SDTX 201/501. 	<ul style="list-style-type: none"> Hardware fault
PS Current out of range or (for STDX 20/50/201) or PS1/PS2 Current alarm (for STDX 501)	The current exceeds the 22 Ampere upper limit of SDTx_ARK1-T 20W and 50W and the 17 Ampere upper limit of SDTx_ARK1-T 200W.	<ul style="list-style-type: none"> Hardware fault
Absolute Power Limiter	The output power exceeds the maximum endurable limit.	<ul style="list-style-type: none"> Hardware fault
Up converter Communication error	Communication errors between ARK1-T main board and Up-converter board.	<ul style="list-style-type: none"> Hardware fault
Temperature High Alarm	Case temperature over 70°C, the maximum endurable limit.	<ul style="list-style-type: none"> Check alarm and warning thresholds Lower the output power to decrease internal temperature
Temperature Level-3dB	Temperature level goes over the alarm threshold. The output power is consequently lowered by 3 dBm (always within the admitted power range).	
Temperature High Warning	Temperature level goes over the warning threshold.	

Alarm	Description and limitations	Troubleshooting
		<ul style="list-style-type: none"> • Check the device airflow • Check fans
Forward Power High	Forward power goes over the maximum endurable limit.	<ul style="list-style-type: none"> • Verify that the No RF Input alarm is enabled in the RF Off alarms mask • Hardware fault
Forward Power Low Warning	Module difference between Forward power level and set output power goes over the warning threshold.	<ul style="list-style-type: none"> • Check alarm and warning thresholds
Forward Power Low alarm	Module difference between Forward power level and set output power goes over the alarm threshold.	<ul style="list-style-type: none"> • At every amplifier initialization the forward power alarm and warning may be temporary on • Amplifier is not properly working, hardware fault
Reflex Power High	Reflex power goes over the maximum endurable limit.	<ul style="list-style-type: none"> • Check the RF output for disconnection or wrong impedance adaptation
Fan Speed	One of the fans speed is under the minimum speed level (1,000 rpm).	<ul style="list-style-type: none"> • Check fans connections

Alarm	Description and limitations	Troubleshooting
		<ul style="list-style-type: none"> Verify that fans are not damaged; if they are, then substitute them. The substitution can be performed during device normal operations
Input Not present Alarm	<p>Seamless improper working warning</p> <p>One or both Seamless logic input of the current mode isn't locked.</p> <p>This alarm is enable only in Tx DVBT mode</p>	<ul style="list-style-type: none"> Check connection status of physical input associated to logic input Check type and source of input associated to logic input Hardware fault
GPS Lock	<p>GPS signal is not lock.</p> <p>Alarm raising limitations:</p> <p>The monitoring of this alarm is disabled when GPS is not used as clock reference or when the GPS Communication Error is raised.</p>	<ul style="list-style-type: none"> Check cable and GPS antenna connections Hardware fault
GPS Communication Error	<p>Communication errors between ARK1-T main board and GPS board.</p> <p>Alarm raising limitations:</p> <p>The monitoring of this alarm is disabled when GPS is not used as clock reference.</p>	<ul style="list-style-type: none"> Hardware fault
Signal 10 MHz Lock	<p>10 MHz is not locked.</p> <p>Alarm raising limitations:</p> <p>The monitoring of this alarm is disabled when GPS is used as clock reference and a GPS alarm (GPS lock, GPS</p>	<ul style="list-style-type: none"> If the Network's Transmitters Synchronization is SFN, check the frequency reference: it should be other than internal

Alarm	Description and limitations	Troubleshooting
	communication error) is raised.	<ul style="list-style-type: none"> • If the frequency reference is Internal: internal PLL fault • If the frequency reference is External: <ul style="list-style-type: none"> ○ Internal PLL fault ○ Lack of external 10 MHz ○ Hardware fault • If the frequency reference is GPS: <ul style="list-style-type: none"> ○ Internal PLL fault ○ 10 MHz line from the GPS receiver hardware fault
Signal 120 MHz Lock	<p>120 MHz is not locked.</p> <p>Alarm raising limitations:</p> <p>The monitoring of this alarm is disabled when the signal 10 MHz lock alarm is raised or when GPS is used as clock reference and a GPS alarm (GPS lock, GPS communication error) is raised.</p>	<ul style="list-style-type: none"> • In SFN configuration, when selected TS input or MIP are not detected, 120 MHz oscillator can lose the lock • Hardware fault

Alarm	Description and limitations	Troubleshooting
Signal 960 MHz Lock	960 MHz is not locked.	<ul style="list-style-type: none"> • Hardware fault
Input Not valid	<p>Seamless improper working warning An error has been detected on Logical seamless input. The possible errors which may be detected on input are:</p> <ul style="list-style-type: none"> • PAT error • MIP error • TS synchronization • Packet jitter • Transport error • ASI word error <p>When the alarm is detected, an event (if event mask is enabled on alarm mask) shows the cause of the error. The cause shown is only one, and it is the heaviest one. The priority in the errors is as previously listed (the heaviest error cause is the one listed in the bottom of the list, and so on).</p>	<ul style="list-style-type: none"> • Check input signal • Check cable connection status • Hardware fault

Alarm	Description and limitations	Troubleshooting
Late MIP input alarm	<p>Seamless improper working warning</p> <p>This alarm is high when the MIP in one of the seamless inputs of the current mode, is not in its expected position. This can be caused by a too high delay on the input.</p>	<ul style="list-style-type: none"> • Check cable connections • Check Network delay • Hardware Fault
Network delay alarm	<p>Seamless improper working warning</p> <p>This alarm is high when the Network delay parameter, calculated from parameters extracted by a seamless inputs is greater than the Maximum delay parameter, extracted from its MIP</p> <p>The alarm can be visualized when LATE MIP input 1 alarm is not high.</p>	<ul style="list-style-type: none"> • Check cable connections • Check Network delay • Hardware Fault
Not Used	This alarm isn't used	
File System Error	File System loading error.	<ul style="list-style-type: none"> • File system partition damage

Alarm	Description and limitations	Troubleshooting
Bad File in File system	<p>One or more of the following files is missing in the File System.</p> <ul style="list-style-type: none">• *.def;• *.sav;• *.dpwr;• *.apwr• *.dlin;• *.dpre;• *.apre• *.cfg;• *.gdly.•• *.cdef	<ul style="list-style-type: none">• Check files list• Reload the file system

Alarm	Description and limitations	Troubleshooting
DVB-T 1PPS Lock	<p>1PPS is not lock to the selected frequency reference. This alarm's RF OFF mask should always be enabled.</p> <p>Alarm raising limitations:</p> <p>The monitoring of this alarm is disabled when external 1 PPS is not used (Heterodyne repeater modes) or when internal 1 PPS is selected (clock ref. set to internal) or when GPS clock reference is selected and one of the GPS alarms (GPS signal lock, GPS comm. alarm) is raised.</p>	<ul style="list-style-type: none"> • If the frequency reference is Internal: internal PLL fault • If the frequency reference is External: <ul style="list-style-type: none"> ○ Internal PLL fault ○ Lack of external 1PPS ○ Hardware fault • If the frequency reference is Internal: <ul style="list-style-type: none"> ○ Check GPS alarms ○ Internal PLL fault ○ Hardware fault
DVB-T PPS Phase	<p>1PPS is not lock to a common reference of the network. This alarm's RF OFF mask should always be enabled.</p> <p>Alarm raising limitations:</p> <p>The monitoring of this alarm is enabled only when the device has SFN modulation enabled.</p>	<ul style="list-style-type: none"> • Check 1PPS • Hardware fault

Alarm	Description and limitations	Troubleshooting
DVB-T System Delay	<p>The internal counter, used to apply the System delay is not lock to 1 PPS. This alarm's RF OFF mask should always be enabled.</p> <p>Alarm raising limitations:</p> <p>The monitoring of this alarm is enabled only when the device has SFN modulation enabled.</p>	<ul style="list-style-type: none"> • Check 1PPS • Hardware fault
DVB-T No MIP	<p>MIP packets missing. This alarm's RF OFF mask should always be enabled.</p> <p>Alarm raising limitations:</p> <p>The monitoring of this alarm is enabled only when the device has SFN modulation enabled.</p> <p>The monitoring of this alarm is disabled when a No Input alarm is raised.</p>	<ul style="list-style-type: none"> • Check input signal
No Input	<p>DVB: Selected TS input not locked. Only when ASI and GBE inputs are selected as input HP and/or LP. This alarm's RF OFF mask should always be enabled.</p> <p>ITU: Selected SDI Input not present or video standard (525 or 625 lines) not compatible with modulator one as defined by parameter LINE_625_525 in .mod file (1=625).</p>	<ul style="list-style-type: none"> • Check input statistics
FPGA Boot alarm	<p>FPGA boot has not been successfully completed.</p>	<ul style="list-style-type: none"> • Restart the machine • Reload the file system

Alarm	Description and limitations	Troubleshooting
Warm up alarm	Temperature level less than 5°C or temperature sensor fault.	<ul style="list-style-type: none">• Restart the machine• Temperature sensor fault

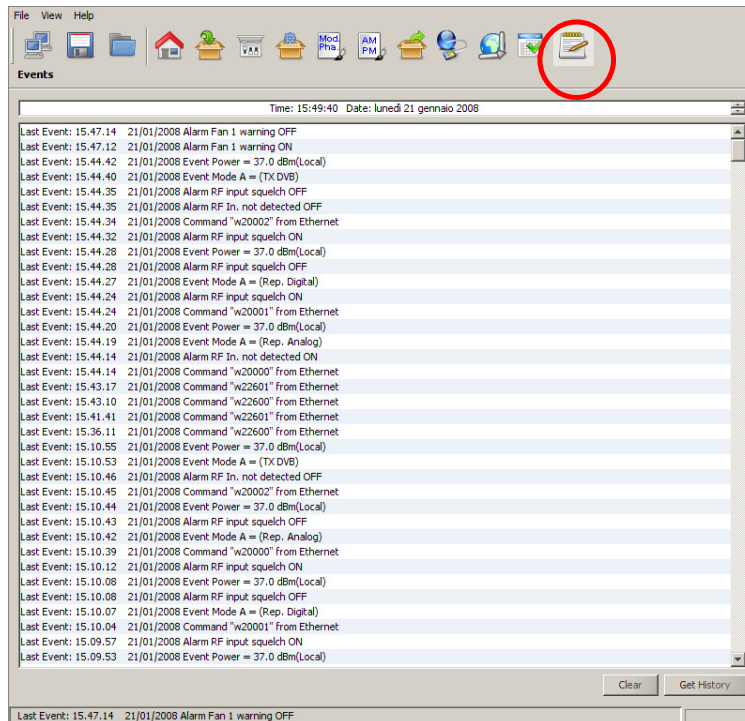
Notes to the table:

- 0/1 stands for disabled/enabled and is fixed, X stands for not fixed.

3.9 EVENTS

Click on Events button icon, highlighted in the next figure, to access the events window.

Figure 21. Events window



Open the Events window to slide the events list.
Events are reported with the following information:

- **Time:** event detection time.
- **Date:** event detection date.
- **Type:** event type:
 - **Alarm** (refer to alarms list in [Alarms](#) paragraph and to *Alarms list* table);
 - **Command** (See *ARK1-T_SW_Reference_manual_v1_2.doc* for further information);
 - **Event** (refer to *Events list* table);
 - **System Init** (refer to [Init System Event](#) paragraph);
 - **TASK_ERR** (refer to [Task Error Event](#) paragraph);
 - **SYS_ERR** (refer to [System Error Event](#) paragraph).
- **Description:** event description:
 - Alarm: which alarm generated the event;
 - Command: the low level code and command source;

- Event: event description;
- System Init: system initialization, followed by the alarm in case of error.
- **Color:** at different color is associated different kind of event:
 - Red: alarm event;
 - Green: command event;
 - Blue: system event;
 - Black: information event (It give more information about the former event).

Use the following buttons, sited on the right side of the window, to manage the Events list:

- **Clear:** resets the events list.
- **Get History:** gets all the stored events from the last board reset (max 512 events).

*Events list***Table 15.**

Event Description	Description
RF OFF enabled from OPTO	RF output switched off through OPTO 0.
RF OFF disabled from OPTO	RF output switched on through OPTO 0.
Stand-by ON from OPTO	Stand-by mode enabled through OPTO 3.
Stand-by OFF from OPTO	Stand-by mode disabled through OPTO 3.
Stand-by ON from LCD	Stand-by mode enabled through LCD button.
Stand-by OFF	Stand-by mode disabled through LCD button.
Power = <i>xx.x</i> dBm (<i>source</i>)	New output power setting. <i>xx.x</i> : output power expressed in dBm. <i>Source</i> : Local or MIP
Update file *. <i>xxxx</i>	New file loading. <i>xxxx</i> : file extension.
Delete file *. <i>xxxx</i>	A file in file system has been deleted. <i>Xxxx</i> : file extension.
P5K open: <i>xx.xx.xx.xx</i>	Connection to port 5000 open. <i>xx.xx.xx.xx</i> : host IP address.
P5K closed	Connection to port 5000 closed.
<i>Switch mode</i> switch <i>X => Y</i>	Switch mode change. <i>Switch mode</i> : Manual / Auto / Opto / Time. <i>X=>Y</i> : A/B=>B/A.
UPCV not configured	The Up-converter has been found not configured during the Task Error Event UPCV_TASK (refer to paragraph).
UPCV configured	Automatic reconfiguring of the Up-converter. It automatically starts at every UPCV not configured event or UPCV communication error.
File system busy	File system already in use while trying to employ it (e.g. change mode during a file loading).
UTC Time set from GPS	Time and date set by GPS. As soon as the GPS lock is regained, once lost, and if the current time and date are different from the GPS ones, the UTC time is set by GPS.
Warm UP Restart	When Warm up alarm is raised this event is reported and the device is restarted.

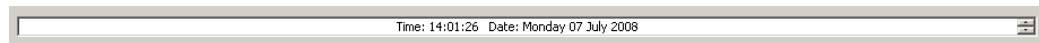
Event Description	Description
PS Restart <i>N</i>	<p>This event is reported when one of the following alarms is raised:</p> <ul style="list-style-type: none"> • Up converter Osc. Unlock • PS 28V out range • PS Current out of range • Absolute Power Limiter <p>The fourth time one of the preceding alarms is risen the amplifier is restarted (from 1 up to 4 times). <i>N</i>: number of amplifier restarting. Only in SDTX 200 version.</p>
PS OFF	<p>After the fourth time the amplifier has been restarted, if an alarm condition causing a PS Restart event occurs, PS OFF event is reported and the amplifier is turned off When this event is reported amplifier can be turned on only by OPTO 2 (only in SDTX 200 version).</p>
Restart Amp from OPTO	<p>This event is reported when the retry command is given by the Retry Alarm OPTO (OPTO 2). Only in SDTX 200 version.</p>
PS ON	<p>This event is reported at every amplifier restarting Only in SDTX 200 version.</p>
FPGA Re-config	<p>When Signal 120 MHz Lock alarm is risen the FPGA is re-configured and this event is reported.</p>
Events List cleared	<p>This event is reported when the events list is cleared.</p>
Saving config...	<p>Saving configuration task started (after the command "s" given by RS232 or GbE commands).</p>
Save config Finished	<p>Saving configuration task correctly ended.</p>
Save config error: <i>xx</i>	<p>An error occurs during saving configuration. <i>xx</i>: error code:</p> <ul style="list-style-type: none"> • 0x80: File system busy; • 0x01: New *.sav file opening error; • 0x02: FPGA data writing error; • 0x03: uC data writing error; • 0x05: Old *.sav file deleting error • 0x06: New file naming error (deleting of "**").

<i>Event Description</i>	<i>Description</i>
SFN Re-Sync	A re-synchronization of internal counter occurred due to a difference with the STS parameter read from MIP.

3.9.1 Date and time setting

The upper part of the event window shows the actual time and date and allows the manual setting of those parameters.

Figure 22. Time and date setting



Click to each part of the date and time to change the parameter and then increase or decrease its value with the up/down arrows.

Note: When the onboard GPS receiver is locked and GPS frequency reference is enabled, the date and time information are received by GPS satellite and updated every thirty seconds.

The board incorporates a rechargeable battery to maintain the time when there isn't a power supply. The battery supplies the clock for two or three days, after that the time shall be reset either by char interface, or LCD display, or Java interface or selecting the GPS as frequency reference.

3.9.2 Task Error Event

The watchdog performs a periodic (every 20 seconds) polling of tasks and triggers a system reset if one or more tasks do not answer, restarting the Codeloader (See *Codeloader_Operations_Note_v1.1.doc* for further information) and generating a TSK ERR event as follows:

TSK ERR 00000028, 0000003c

The blue underlined 8 bits word is the enabling status of the alarms mask. The red underlined 8 bits word indicates the status of tasks (1 if the task has been successfully performed, otherwise 0) as specified in the following table:

Table 16. Task error event specific data

TASK	Description	Bit
WD_FAN_TASK	This task controls fans speed on the base of the board temperature.	0
WD_UPCV_TASK	This task controls the Upconverter status.	1
WD_GPS_TASK	This task controls the GPS status.	2
WD_STATUS_TASK	This task gathers quite all the board information in order to perform the following operations: <ul style="list-style-type: none"> • It updates all variables of the system; • It manages alarms; • It manages the RF status (e.g. on, off...); • It manages the mode switch; • It manages the ARP resolution in DVB mode. 	3
WD_TCP_IP_TASK	This task implements the TCP-IP protocol stack.	4
WD_TIMER_TICK_TASK	This task generates the clock for the TCP-IP task.	5
WD_STV0362_TASK	This task gathers information from both the HP and LP tuners and configures them.	6

The default tasks mask at the board startup is set to 0x0000007D (i.g. the UPCV task is excepted). Once the presence of the upconverter is assured, the upconverter task bit is automatically enabled and the mask is set to 0x0000007F. Tasks execution is stopped during de-fragmentation operations and FPGA boots.

3.9.3 System Error Event

For critical and fatal errors, the system calls the system error function and the *SYS_ERR* event is reported.

The error code is described below:

- 0x00: Out of memory. Memory pool size is too small.

- 0x01: Invalid memory block release. Buffer data has been written out of boundaries of the allocated memory block.

- 0x02: Link pointer corrupted. Buffer data has been written out of boundaries of the allocated memory block.

- 0x03: No free UDP Sockets. The system has run out of UDP Sockets.

- 0x04: No free TCP Sockets. The system has run out of TCP Sockets.

- 0x05: TCP socket is in an undefined state. System memory has been accidentally overwritten.

3.9.4 System Initialization Event

At every system initialization the event *System Init* is generated.

This event is followed by 25 bytes specifying type and specific code of errors occurred during system initialization.

Each byte refers to an error as described in the following table:

Table 17. Init system event specific data

<i>Byte</i>	<i>Description</i>	<i>Errors code</i>
1°	FS_ERR File System error.	<ul style="list-style-type: none"> 0x00: File System ok. 0x01: FS partition error (invalid FS).
2°	INFO_ERR *.cfg file error.	<ul style="list-style-type: none"> 0x00: File ok. 0x01: File not found or File open error. 0x02...0x03: Invalid file (syntax errors).
3°	DEF_ERR *.def file error.	<ul style="list-style-type: none"> 0x00: File ok. 0x01: File open error. 0x02: File not found.
4°	LCD_ERR LCD error.	<ul style="list-style-type: none"> 0x00: LCD ok. 0x01: LCD not found.
5°	PLL_960M_ERR 960 MHz PLL error.	<ul style="list-style-type: none"> 0x00: PLL locked. 0x01: PLL not locked

<i>Byte</i>	Description	Errors code
6°	BOOT_ERR FPGA boot error.	<ul style="list-style-type: none"> • 0x00: FPGA boot ok. • 0x01: FPGA configuration erasing process error. • 0x02: Invalid configuration (the configuration has been correctly loaded, but the FPGA doesn't boot). • 0x10: FPGA file not found. • 0x11 and 0x20: Invalid FPGA file (syntax error). <p>Please note that checked FPGA file is the one which refers to the selected mode. FPGA files are numbered from 1 to 3, identifying Heterodyne mode, TX DVB mode, TX Analog mode.</p>
7°	LOAD_CFG_ERR *.sav file error.	<ul style="list-style-type: none"> • 0x00: File ok. • 0x01: File open error. • 0x02...0x05: Invalid file (syntax errors). • 0x10: File not found.

Byte	Description	Errors code
8°	SNMP_ERR SNMP file error.	<ul style="list-style-type: none"> • 0x00: SNMP file ok. • 0x01: SNMP file not found. • 0x02: File open error. • 0x03: UDP socket initialization error. • 0x04: Port 161 open error.
9°	CALIB_ERR *.apwr and *.dpwr files error.	<ul style="list-style-type: none"> • 0x00: File ok. • 0x01: Current AGC mode file not found. • 0x02: Current AGC mode file open error. • 0x03...0x12: Invalid current AGC mode file (syntax error). • 0x20: Other AGC mode file not found • 0x21: Other AGC mode file open error. • 0x22...0x26: Invalid other AGC mode file (syntax error). <p>Please note that the AGC mode may be analog (in case of device in Rep. Analog or ITU 470 mode) or digital (in case of device in Rep. Digital or TX DVB mode). Actual AGC mode is displayed in Java output window.</p>

Byte	Description	Errors code
10°	PREC_ERR *.apre and *.dpre files error.	<ul style="list-style-type: none"> • 0x00: File ok. • 0x01: File not found. • 0x02: File open error. • 0x03...0x0a: Invalid file (syntax errors). <p>Please note that *.apre file is checked if device starts in AGC analog mode (rep. analog or ITU 470 mode), while *.dpre file is checked if device starts in AGC digital mode.</p>
11°	LINEAR_ERR *.alin and *.dlin files error.	<ul style="list-style-type: none"> • 0x00: File ok. • 0x01: File not found. • 0x02: File open error. • 0x03...0x0A: Invalid file (syntax errors). <p>Please note that the *.alin file is used for the Heterodyne Repeater modes (Rep. Analog and Rep. Digital), and the *.dlin file is used for the DVB re-transmitter and ITU 470 re-transmitter modes.</p>
12°	DOWNCV_ERR Downconverter PLL not locked error.	<ul style="list-style-type: none"> • 0x00: PLL locked. • 0x01: PLL not locked • 0x10: PLL disabled.

<i>Byte</i>	Description	Errors code
13°	UPCV_ERR Upconverter error.	<ul style="list-style-type: none"> • 0x00: Upconverter ready. • 0x01: Upconverter not found. • 0x02: Upconverter doesn't correctly answer. • 0x10: Upconverter disabled.
14°	CH_FILT_ERR *.chf7 or *.chf8 file error.	<ul style="list-style-type: none"> • 0x00: File ok. • 0x01: File not found. • 0x02: File open error. • 0x03...0x06: Invalid file (syntax errors). <p>Please note that checked file is the one which refers to the current signal bandwidth: *.chf7 refers to VHF bandwidth, *.chf8 refers to UHF bandwidth.</p>

<i>Byte</i>	Description	Errors code
15°	CH_DEF_ERR *.cdef file error.	<ul style="list-style-type: none"> • 0x00: File ok. • 0x01: File not found. • 0x02: File open error. • 0x03: syntax error or lack of input number of channels. • 0x13: syntax error or lack of output number of channels. • 0x04: input channels memory allocation error. • 0x14: output channels memory allocation error. • 0x05: when the automatic indexing of channels listed in *.cdef file is disabled, it notifies syntax errors or lack of input channels definition lines. • 0x15: when the automatic indexing of channels listed in *.cdef file is disabled, it notifies syntax errors or lack of output channels definition lines. • 0x06: when the automatic indexing of channels listed in *.cdef file is enabled, it notifies syntax errors or lack of input channels definition lines. • 0x16: when the automatic indexing of channels listed in *.cdef file is enabled, it notifies syntax errors or lack of output channels definition lines.

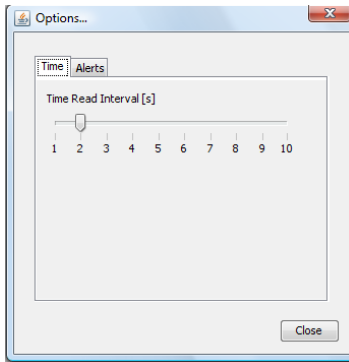
3.10 Option sub-menu

The Option sub-menu allows two controls type:

- **Time:** Time Read Interval [s];
- **Alerts:** the selection of events to display.

3.10.1 Time

Figure 23. Time subwindow



This control allows to change the device-to-management PC java update time. The default value is 2 seconds. Click on Close button quit this sub-window.

3.10.2 Alerts

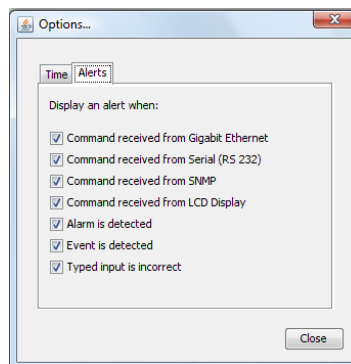


Figure 24. Alerts subwindow

The Alert subwindow allows the selection of which type of event has to be notified through an Alert box.

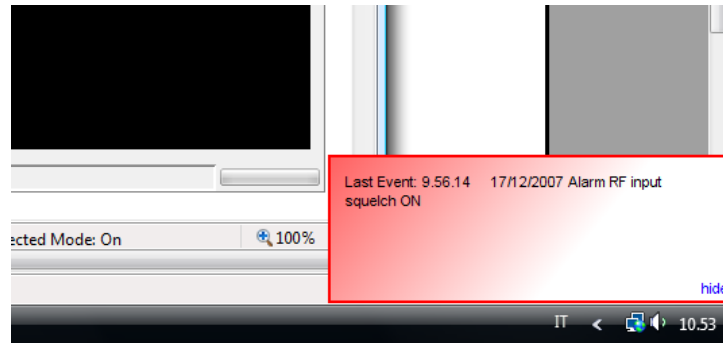
Alert boxes appear on the right side of the monitor. The selection is performed among the following types of event:

- **Commands (blue boxes):**
 - Gigabit Ethernet commands;
 - RS232 commands;
 - SNMP commands;
 - LCD Display commands.
- **Alarms (red boxes);**
- **Events (green messages):**

- Board events.
- **Typing error (yellow messages):**
 - Typed setting is incorrect.

Click on Close button to hide these alert subwindows.

Figure 25. Alert message



Alert boxes can be disabled through the hide button located on the right side of the box. The hide button, once clicked, disables all boxes belonging to the same class.

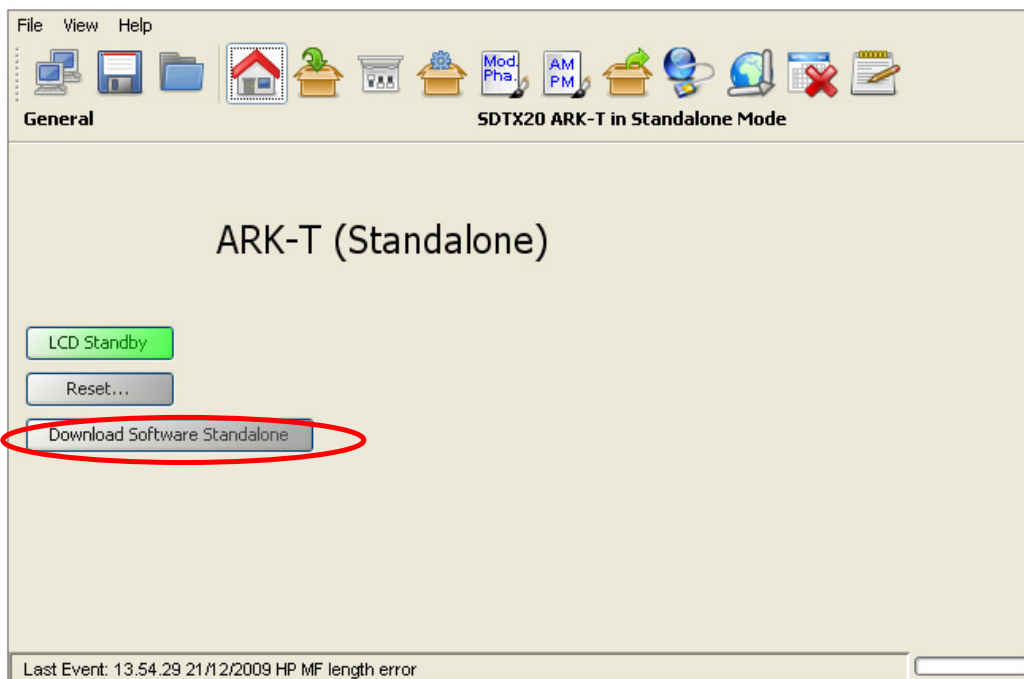
3.11 Download Software Standalone

The Download Software Standalone button allows the downloading of standalone java application (executable jar file) based on java applet.

If your browser is Internet Explorer, it may blocks the site from downloading files to your computer. If you want to enable the file downloading, follow the instructions listed below:

- Open Internet Explorer;
- Click on the Tools button and then click on Internet Options;
- Click on the Security tab and then click on Custom level button;
- To turn off the Information bar for file downloads, scroll to the Downloads section of the list, and then, under Automatic prompting for file downloads, click on Enable;
- Click on OK, click Yes in order to confirm that you want to make the change, then click OK again.

Figure 26. Download Software Standalone



3.12 SNMP – Simple Network Management Protocol

The SNMP model assumes the existence of managers and agents. A manager is a software module in a management system responsible for managing the device. An agent is a software module in a managed device responsible for maintaining local management information and delivering that information to a manager via SNMP. A management information exchange can be initiated by the manager (via polling) or by the agent (via trap). Interaction between a user of board management and the board management software takes place across a user interface. Such an interface is needed to provide users with a monitoring and controlling tool in order to allow some parameters to be viewed or set locally. The operations that are supported in SNMP network management are the alteration and inspection of variables. Specifically, three general-purpose operations may be performed on scalar objects:

- Get: a management station retrieves a scalar object value from a managed station.
- Set: a management station updates a scalar object value in a managed station.
- Trap: a managed station sends an unsolicited scalar object value to a management station.

Management information accessible via SNMP is maintained in a management information base (MIB) at each manager and agent node.

On manager side, ARK1-T management system has been tested with MG-SOFT as MIB Browser; besides compatibility with any other MIB browser is assured.

The following MIB libraries are required for the SNMP management of the equipment:

- SCREENSERVICE-SCB-BROADCASTING-MIB.my;
- ark1_r_1_7.MY.

Compatibility tested and assured with SNMP version 1 and 2.

Figure 29 shows a sample view of SNMP tree structure of ARK1-T.

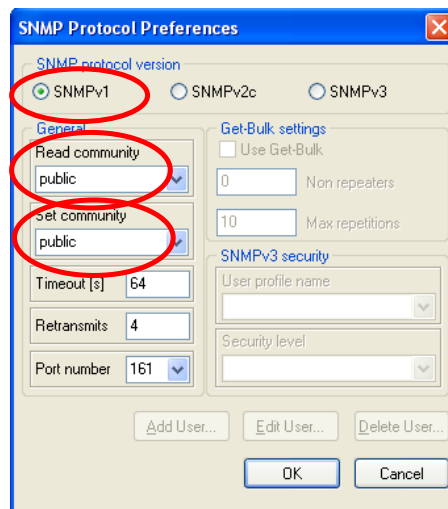
3.13 SNMP Protocol Preferences

Go to SNMP Protocol Preferences. The following parameters should be set in order to correctly configure the SNMP Manager:

- SNMP protocol version: **SNMPv1**;
- Read Community: the same of the one set in the **Get** field of Java interface, community section;
- Set Community: the same of the one set in the **Set** field of Java interface, community section;
- Timeout [s]: user defined;
- Retransmits: user defined;
- Port number: **161**.

Next figure illustrates how to configure SNMP Protocol Preferences using MG_SOFT MIB Browser as an example.

Figure 3.12-1: SNMP Protocol Preferences



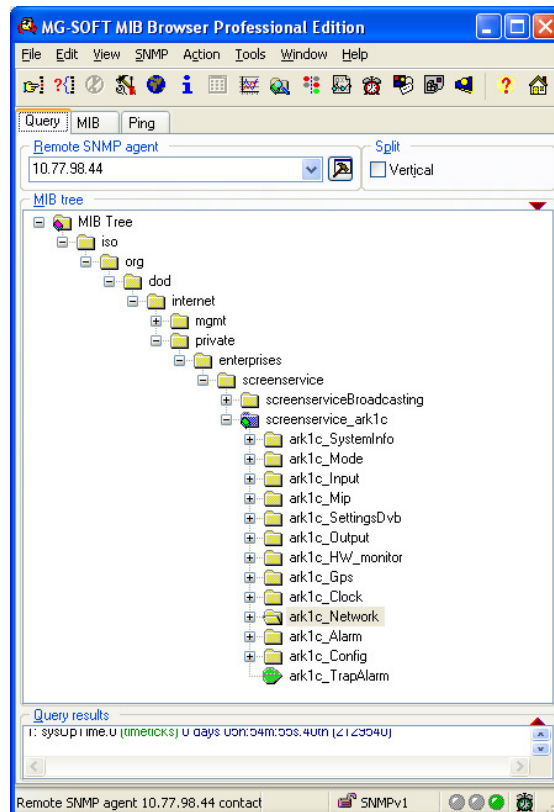
Community on the SNMP Protocol Preferences.

3.14 Monitoring

All status and setup information can be queried via SNMP. To get the setup and status information you need a management system (or a special MIB browser).

Next figure, referring to MG-SOFT MIB Browser as an example, is a broad view of the ARK1-T tree structure.

Figure 27. ARK1-T MIB Browser



3.15 OID

Any status and setup information has an OID (Object Identifier). The OID of the ARK1-T system is:

- *screenservice_ARK1r: 1.3.6.1.4.1.21678.188*
iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).screenservice(21678).screenservice_ARK1t(188)

3.15.1 SNMP tree structure

The SNMP tree structure is shown in Figure 26, after the node *screenserviceBroadcasting* there is the node that specifies the device typology.

The *screenservice_ARK1-T* tree has 12 nodes and 1 leaf.

The nodes are:

- **Ark1t_SystemInfo:** global description of the system.
- **Ark1t_Mode:** shows and manages board modes.
- **Ark1t_Input:** shows and manages inputs.
Note: In Ark1t_STV0 and Ark1t_STV1 nodes are housed the statistics of the digital RF signal. STV0 and STV1 are the two IF demodulators for the HP and LP streams respectively.
- **Ark1t_Mip:** shows MIP modulation parameters.
- **Ark1t_SettingsDvb:** shows and sets local modulation parameters.
- **Ark1t_Output:** shows and manages the output.
- **Ark1t_HW_monitor:** shows the amplifier status.
- **Ark1t_Gps:** shows the collection of live data from GPS receiver.
- **Ark1t_Clock:** shows and sets 10MHz and 1PPS source.
- **Ark1t_Network:** shows and sets network parameters.
- **Ark1t_Alarm:** shows and manages system alarms.
- **Ark1t_Config:** allows the management of the machine configuration.
- **Ark1t_TrapAlarm:** is the OID used in the trap message:

OID	Name	R/W	Description
1	iso		
1.3	org		
1.3.6	dod		
1.3.6.1	internet		
1.3.6.1.2	mgmt		
1.3.6.1.2.1	mib-2		
1.3.6.1.2.1.1	system		
1.3.6.1.2.1.1.1	sysDescr	R	
1.3.6.1.2.1.1.2	sysObjectID	R	
1.3.6.1.2.1.1.3	sysUpTimeInstance	R	
1.3.6.1.2.1.1.4	sysContact	R	
1.3.6.1.2.1.1.5	sysName	R	
1.3.6.1.2.1.1.6	sysLocation	R	
1.3.6.1.2.1.1.7	sysServices	R	
1.3.6.1.4	private		
1.3.6.1.4.1	enterprise		
1.3.6.1.4.1.21678	screenservice		
1.3.6.1.4.1.21678.188	screenservice_ark1t		
1.3.6.1.4.1.21678.188.1	ark1t_SystemInfo		
1.3.6.1.4.1.21678.188.1.1	ark1t_SystemInfoIdentifier	R	Identification name of the equipment managed
1.3.6.1.4.1.21678.188.1.2	ark1t_SystemInfoName	R	Manufacturer name
1.3.6.1.4.1.21678.188.1.3	ark1t_SystemInfoDescription	R	Description of the equipment managed
1.3.6.1.4.1.21678.188.1.4	ark1t_SystemInfoLocation	R	Geographical implantation
1.3.6.1.4.1.21678.188.1.5	ark1t_SystemInfoContact	R	The person to contact in case of problems with the managed element
1.3.6.1.4.1.21678.188.1.6	ark1t_SystemInfoFamilyNumber	R	Unique family ID
1.3.6.1.4.1.21678.188.1.7	ark1t_SystemInfoId	R	System info ID
1.3.6.1.4.1.21678.188.1.8	ark1t_SystemInfoSerialNumber	R	Unique board ID
1.3.6.1.4.1.21678.188.1.9	ark1t_SystemInfoVersion		
1.3.6.1.4.1.21678.188.1.9.1	ark1t_VersionUc	R	UC file version
1.3.6.1.4.1.21678.188.1.9.2	ark1t_VersionFpga	R	Fpga file version
1.3.6.1.4.1.21678.188.1.9.3	ark1t_VersionSnmpp	R	Snmpp file version
1.3.6.1.4.1.21678.188.1.9.4	ark1t_VersionPsu		
1.3.6.1.4.1.21678.188.1.9.4.1	ark1t_PsuFamily	R	PSU unique family ID
1.3.6.1.4.1.21678.188.1.9.4.2	ark1t_PsuSerial	R	PSU unique board ID
1.3.6.1.4.1.21678.188.1.9.5	ark1t_VersionUpconverter		
1.3.6.1.4.1.21678.188.1.9.5.1	ark1t_UpconverterFamily	R	Upconverter unique family ID
1.3.6.1.4.1.21678.188.1.9.5.2	ark1t_UpconverterSerial	R	Upconverter unique board ID
1.3.6.1.4.1.21678.188.1.9.5.3	ark1t_UpconverterVer	R	Upconverter software version
1.3.6.1.4.1.21678.188.1.10	ark1t_SystemSerialNumbers		
1.3.6.1.4.1.21678.188.1.10.1	ark1t_Device	R	Device Serial Number
1.3.6.1.4.1.21678.188.1.10.2	ark1t_Board	R	Board Serial Number
1.3.6.1.4.1.21678.188.1.10.3	ark1t_DownConverter	R	Downconverter Serial Number
1.3.6.1.4.1.21678.188.1.10.4	ark1t_UpConverter	R	Upconverter Serial Number
1.3.6.1.4.1.21678.188.1.10.5	ark1t_Psu	R	Power Supply Unit Serial Number

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.1.10.6	ark1t_Amplifier	R	Amplifier Serial Number
1.3.6.1.4.1.21678.188.2	ark1t_Mode		
1.3.6.1.4.1.21678.188.2.1	ark1t_ModeSwitch	RW	Switch mode selector 0:manual 1:auto 2:opto 3:time
1.3.6.1.4.1.21678.188.2.2	ark1t_ModeManualSelector	RW	Manual mode 0: modeA 1: modeB
1.3.6.1.4.1.21678.188.2.3	ark1t_ModeActual	R	Actual mode 0: modeA 1: modeB
1.3.6.1.4.1.21678.188.2.4	ark1t_ModeSelectorA	RW	Mode A selector 0: Not used, 1: Not used, 2: Tx Digital 3: Tx Analog
1.3.6.1.4.1.21678.188.2.5	ark1t_ModeSelectorB	RW	Mode B selector 0: Not used, 1: Not used, 2: Tx Digital 3: Tx Analog
1.3.6.1.4.1.21678.188.2.6	ark1t_ModeErrorFrequency	R	NOT IMPLEMENTED Frequency error correction expressed in Hz
1.3.6.1.4.1.21678.188.2.7	ark1t_ModeAFC_A	RW	NOT IMPLEMENTED Automatic Frequency Control mode A 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.2.8	ark1t_ModeAFC_B	RW	NOT IMPLEMENTED Automatic Frequency Control mode B 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.2.9	ark1t_ModeAFC_actual	R	NOT IMPLEMENTED Automatic Frequency Control status 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.2.10	ark1t_ModeAutoSwitchTmo	RW	Auto-switch timeout (s). The range is 0:255.
1.3.6.1.4.1.21678.188.2.11	ark1t_ModeActualTmo	R	Actual auto-switch timeout (s)
1.3.6.1.4.1.21678.188.2.12	ark1t_ModeAutoSwitchRuleA	RW	Auto-switch rules mode A (bit to alarm association) bit2: no input alarm bit5: no MIP alarm
1.3.6.1.4.1.21678.188.2.13	ark1t_ModeAutoSwitchRuleB	RW	Auto-switch rules mode B (bit to alarm association) bit2: no input alarm bit5: no MIP alarm
1.3.6.1.4.1.21678.188.2.14	ark1t_ModeSwitchingTime		
1.3.6.1.4.1.21678.188.2.14.1	ark1t_SwitchingTimeYear	RW	Switching time: year setting (starting from

OID	Name	R/W	Description
			2000)
1.3.6.1.4.1.21678.188.2.14.2	ark1t_SwitchingTimeMonth	RW	Switching time: month setting
1.3.6.1.4.1.21678.188.2.14.3	ark1t_SwitchingTimeDay	RW	Switching time: day setting
1.3.6.1.4.1.21678.188.2.14.4	ark1t_SwitchingTimeHour	RW	Switching time: hour setting
1.3.6.1.4.1.21678.188.2.14.5	ark1t_SwitchingTimeMinutes	RW	Switching time: minutes setting
1.3.6.1.4.1.21678.188.2.14.6	ark1t_SwitchingTimeSeconds	RW	Switching time: seconds setting
1.3.6.1.4.1.21678.188.2.15	ark1t_InputSelectMode	RW	NOT IMPLEMENTED Input Mode Selector 0:Manual 1:Autoswitch
1.3.6.1.4.1.21678.188.2.16	ark1t_SelectInput	R	NOT IMPLEMENTED Actual selected input: 0 ASI1, 1 ASI2, 2 ASI3, 3 ASI4, 4 RX.HP, 5 RX.LP
1.3.6.1.4.1.21678.188.3	ark1t_Input		
1.3.6.1.4.1.21678.188.3.1	ark1t_InputSettings		
1.3.6.1.4.1.21678.188.3.1.1	ark1t_InputSettingsA		
1.3.6.1.4.1.21678.188.3.1.1.1	ark1t_InputSettingsA_Rf		
1.3.6.1.4.1.21678.188.3.1.1.1.1	ark1t_SettingsA_Rf_Channel	RW	NOT IMPLEMENTED Mode A: input channel
1.3.6.1.4.1.21678.188.3.1.1.1.2	ark1t_SettingsA_Rf_FrequencyOffset	RW	NOT IMPLEMENTED Mode A: input frequency offset expressed in Hz (from -4,000,000 up to 4,000,000)
1.3.6.1.4.1.21678.188.3.1.1.2	ark1t_InputSettingsA_Remod		
1.3.6.1.4.1.21678.188.3.1.1.2.1	ark1t_SettingsA_HpInput1	RW	Mode A: High Priority input 1 selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Port1 7: Gbe Port2
1.3.6.1.4.1.21678.188.3.1.1.2.2	ark1t_SettingsA_LpInput1	RW	Mode A: Low Priority input 1 selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Port1 7: Gbe Port2
1.3.6.1.4.1.21678.188.3.1.1.2.3	ark1t_SettingsA_HpInput2	RW	Mode A: High Priority input 2 selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Port1 7: Gbe Port2
1.3.6.1.4.1.21678.188.3.1.1.2.4	ark1t_SettingsA_LpInput2	RW	Mode A: Low Priority input 2 selector 0: asi 1 1: asi 2 2: asi 3

OID	Name	R/W	Description
			3: asi 4 6: Gbe Port1 7: Gbe Port2
1.3.6.1.4.1.21678.188.3.1.1.3	ark1t_InputSettingsA_Itu		
1.3.6.1.4.1.21678.188.3.1.1.3.1	ark1t_SettingsA_Itu_Input	RW	Mode A: Itu 470 input selector 0: sdi 1 1: sdi 2
1.3.6.1.4.1.21678.188.3.1.1.3.2	ark1t_SettingsA_Itu_Audio_Ch	RW	Mode A: Itu 470 audio channel selector 0: CH 1,2 1: CH 3,4
1.3.6.1.4.1.21678.188.3.1.2	ark1t_InputSettingsB		
1.3.6.1.4.1.21678.188.3.1.2.1	ark1t_InputSettingsB_Rf		
1.3.6.1.4.1.21678.188.3.1.2.1.1	ark1t_SettingsB_Rf_Channel	RW	NOT IMPLEMENTED Mode B: input channel
1.3.6.1.4.1.21678.188.3.1.2.1.2	ark1t_SettingsB_Rf_FrequencyOffset	RW	NOT IMPLEMENTED Mode B: input frequency offset expressed in Hz (from -4,000,000 up to 4,000,000)
1.3.6.1.4.1.21678.188.3.1.2.2	ark1t_InputSettingsB_Remod		
1.3.6.1.4.1.21678.188.3.1.2.2.1	ark1t_SettingsB_HpInput1	RW	Mode A: High Priority input 1 selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Port1 7: Gbe Port2
1.3.6.1.4.1.21678.188.3.1.2.2.2	ark1t_SettingsB_LpInput1	RW	Mode A: Low Priority input 1 selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Port1 7: Gbe Port2
1.3.6.1.4.1.21678.188.3.1.2.2.3	ark1t_SettingsB_HpInput2	RW	Mode A: High Priority input 2 selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Port1 7: Gbe Port2
1.3.6.1.4.1.21678.188.3.1.2.2.4	ark1t_SettingsB_LpInput2	RW	Mode A: Low Priority input 2 selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Port1 7: Gbe Port2
1.3.6.1.4.1.21678.188.3.1.2.3	ark1t_InputSettingsB_Itu		
1.3.6.1.4.1.21678.188.3.1.2.3.1	ark1t_SettingsB_Itu_Input	RW	Mode B: Itu 470 input selector 0: sdi 1 1: sdi 2
1.3.6.1.4.1.21678.188.3.1.2.3.2	ark1t_SettingsB_Itu_Audio_Ch	RW	Mode B: Itu 470 audio channel selector 0: CH 1,2 1: CH 3,4
1.3.6.1.4.1.21678.188.3.1.3	ark1t_InputEqualizerBypass		
1.3.6.1.4.1.21678.188.3.1.3.1	ark1t_EqualizerBypassAsi1	RW	ASI 1 Eq. Bypass enable 0: disabled 1:

OID	Name	R/W	Description
			enabled
1.3.6.1.4.1.21678.188.3.1.3.2	ark1t_EqualizerBypassAsi2	RW	ASI 2 Eq. Bypass enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.3.1.3.3	ark1t_EqualizerBypassAsi3Sdi1	RW	ASI 3 / SDI 1 Eq. Bypass enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.3.1.3.4	ark1t_EqualizerBypassAsi4Sdi2	RW	ASI 4 / SDI 2 Eq. Bypass enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.3.2	ark1t_InputStatistics		
1.3.6.1.4.1.21678.188.3.2.1	ark1t_StatisticsRf		
1.3.6.1.4.1.21678.188.3.2.1.1	ark1t_RfRxLevel	R	NOT IMPLEMENTED Input RX level 0: over input 255: low power 1...254: power (absolute value expressed in dBm)
1.3.6.1.4.1.21678.188.3.2.1.2	ark1t_RfAnalog		
1.3.6.1.4.1.21678.188.3.2.1.2.1	ark1t_VSync	R	NOT IMPLEMENTED PAL detector 0: No 1: Yes
1.3.6.1.4.1.21678.188.3.2.1.3	ark1t_RfDigital		
1.3.6.1.4.1.21678.188.3.2.1.3.1	ark1t_RxDvbHp		
1.3.6.1.4.1.21678.188.3.2.1.3.1.1	ark1t_RxDvbHp_PckRate	R	NOT IMPLEMENTED Input Rx HP: packet rate
1.3.6.1.4.1.21678.188.3.2.1.3.1.2	ark1t_RxDvbHp_UsedPckrate	R	NOT IMPLEMENTED Input Rx HP: filtered packet rate
1.3.6.1.4.1.21678.188.3.2.1.3.1.3	ark1t_RxDvbHp_Lock	R	NOT IMPLEMENTED Input Rx HP: lock alarm 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.1.3.1.4	ark1t_RxDvbHp_OverFlowAlarm	R	NOT IMPLEMENTED Input Rx HP: overflow alarm 0: off 1: on
1.3.6.1.4.1.21678.188.3.2.1.3.2	ark1t_RxDvbLp		
1.3.6.1.4.1.21678.188.3.2.1.3.2.1	ark1t_RxDvbLp_Pckrate	R	NOT IMPLEMENTED Input Rx LP: packet rate
1.3.6.1.4.1.21678.188.3.2.1.3.2.2	ark1t_RxDvbLp_UsedPckrate	R	NOT IMPLEMENTED Input Rx LP: filtered packet rate
1.3.6.1.4.1.21678.188.3.2.1.3.2.3	ark1t_RxDvbLp_Lock	R	NOT IMPLEMENTED Input Rx LP: lock alarm 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.1.3.2.4	ark1t_RxDvbLp_OverFlowAlarm	R	NOT IMPLEMENTED Input Rx LP:

OID	Name	R/W	Description
			overflow alarm 0: off 1: on
1.3.6.1.4.1.21678.188.3.2.1.3.3	ark1t_STV0		
1.3.6.1.4.1.21678.188.3.2.1.3.3.1	ark1t_STV0LockTps	R	NOT IMPLEMENTED STV 0: TPS lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.1.3.3.2	ark1t_STV0LockSyr	R	NOT IMPLEMENTED STV 0: symbol recovery loop lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.1.3.3.3	ark1t_STV0LockPunctureRate	R	NOT IMPLEMENTED STV 0: puncture rate found 0: not found 1: found
1.3.6.1.4.1.21678.188.3.2.1.3.3.4	ark1t_STV0LockDeinterleaver	R	NOT IMPLEMENTED STV 0: de-interleaver lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.1.3.3.5	ark1t_STV0DemodBerRate	R	NOT IMPLEMENTED STV 0: demodulator Bit Error Rate
1.3.6.1.4.1.21678.188.3.2.1.3.3.6	ark1t_STV0ViterbiBerRate	R	NOT IMPLEMENTED STV 0: Viterbi Bit Error Rate
1.3.6.1.4.1.21678.188.3.2.1.3.3.7	ark1t_STV0PckErr	R	NOT IMPLEMENTED STV 0: packet error count
1.3.6.1.4.1.21678.188.3.2.1.3.3.8	ark1t_STV0Snr	R	NOT IMPLEMENTED STV 0: estimated Signal-to-Noise Ratio expressed in dB
1.3.6.1.4.1.21678.188.3.2.1.3.3.9	ark1t_STV0Constallation	R	NOT IMPLEMENTED STV 0: constellation for current modulation scheme 0: QPSK 1: 16-QAM 2: 64-QAM
1.3.6.1.4.1.21678.188.3.2.1.3.3.10	ark1t_STV0HierMode	R	NOT IMPLEMENTED STV 0: hierarchy information for current modulation scheme 0: non hierarchical 1: alpha=1 2: alpha=2 3: alpha=4
1.3.6.1.4.1.21678.188.3.2.1.3.3.11	ark1t_STV0Interleaver	R	NOT IMPLEMENTED STV 0: native/in-

OID	Name	R/W	Description
			depth symbol interleaver for current modulation scheme 0: native 1: in-depth
1.3.6.1.4.1.21678.188.3.2.1.3.3.12	ark1t_STV0Fec	R	NOT IMPLEMENTED STV 0: High Priority FEC 0: 1/2 1: 2/3 2: 3/4 3: 5/6 4: 7/8
1.3.6.1.4.1.21678.188.3.2.1.3.3.13	ark1t_STV0Fft	R	NOT IMPLEMENTED STV 0: transmission mode information 0: 2K 1: 8K 2: 4K
1.3.6.1.4.1.21678.188.3.2.1.3.3.14	ark1t_STV0GuardTime	R	NOT IMPLEMENTED STV 0: guard interval 0: 1/32 1: 1/16 2: 1/8 3: 1/4
1.3.6.1.4.1.21678.188.3.2.1.3.3.15	ark1t_STV0CellId	R	NOT IMPLEMENTED STV 0: cell identifier
1.3.6.1.4.1.21678.188.3.2.1.3.4	ark1t_STV1		
1.3.6.1.4.1.21678.188.3.2.1.3.4.1	ark1t_STV1LockTps	R	NOT IMPLEMENTED STV 1: TPS lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.1.3.4.2	ark1t_STV1LockSyr	R	NOT IMPLEMENTED STV 1: symbol recovery loop lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.1.3.4.3	ark1t_STV1LockPunctureRate	R	NOT IMPLEMENTED STV 1: puncture rate found 0: not found 1: found
1.3.6.1.4.1.21678.188.3.2.1.3.4.4	ark1t_STV1LockDeinterleaver	R	NOT IMPLEMENTED STV 1: de- interleaver lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.1.3.4.5	ark1t_STV1DemodBerRate	R	NOT IMPLEMENTED STV 1: demodulator Bit Error Rate
1.3.6.1.4.1.21678.188.3.2.1.3.4.6	ark1t_STV1ViterbiBer	R	NOT IMPLEMENTED STV 1: Viterbi Bit Error Rate
1.3.6.1.4.1.21678.188.3.2.1.3.4.7	ark1t_STV1PckErr	R	NOT IMPLEMENTED STV 1: packet error count
1.3.6.1.4.1.21678.188.3.2.1.3.4.8	ark1t_STV1Snr	R	NOT

OID	Name	R/W	Description
			IMPLEMENTED STV 1: estimated Signal-to-Noise Ratio expressed in dB
1.3.6.1.4.1.21678.188.3.2.1.3.4.9	ark1t_STV1Constallation	R	NOT IMPLEMENTED STV 1: constellation for current modulation scheme 0: QPSK 1: 16-QAM 2: 64- QAM
1.3.6.1.4.1.21678.188.3.2.1.3.4.10	ark1t_STV1HierMode	R	NOT IMPLEMENTED STV1: hierarchy information for current modulation scheme 0: non hierarchical 1: alpha=1 2: alpha=2 3: alpha=4
1.3.6.1.4.1.21678.188.3.2.1.3.4.11	ark1t_STV1Interleaver	R	NOT IMPLEMENTED STV 1: native/in- depth symbol interleaver for current modulation scheme 0: native 1: in-depth
1.3.6.1.4.1.21678.188.3.2.1.3.4.12	ark1t_STV1Fec	R	NOT IMPLEMENTED STV1: Low Priority FEC 0: 1/2 1: 2/3 2: 3/4 3: 5/6 4: 7/8
1.3.6.1.4.1.21678.188.3.2.1.3.4.13	ark1t_STV1Fft	R	NOT IMPLEMENTED STV 1: transmission mode information 0: 2K 1: 8K 2: 4K
1.3.6.1.4.1.21678.188.3.2.1.3.4.14	ark1t_STV1GuardTime	R	NOT IMPLEMENTED STV 1: guard interval 0: 1/32 1: 1/16 2: 1/8 3: 1/4
1.3.6.1.4.1.21678.188.3.2.1.3.4.15	ark1t_STV1CellIld		NOT IMPLEMENTED STV 1: cell identifier
1.3.6.1.4.1.21678.188.3.2.2	ark1t_StatisticsRemod		
1.3.6.1.4.1.21678.188.3.2.2.1	ark1t_RemodAsi		
1.3.6.1.4.1.21678.188.3.2.2.1.1	ark1t_Asi1		
1.3.6.1.4.1.21678.188.3.2.2.1.1.1	ark1t_Asi1WordRate	R	Asi 1 input word rate
1.3.6.1.4.1.21678.188.3.2.2.1.1.2	ark1t_Asi1ByteRate	R	Asi 1 input byte rate
1.3.6.1.4.1.21678.188.3.2.2.1.1.3	ark1t_Asi1Filtered	R	Asi 1 input filtered byte rate
1.3.6.1.4.1.21678.188.3.2.2.1.1.4	ark1t_Asi1OverFlowAlarm	R	Asi 1 input overflow alarm 0:

OID	Name	R/W	Description
			off 1: on
1.3.6.1.4.1.21678.188.3.2.2.1.1.5	ark1t_Asi1Lock	R	Asi 1 input lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.1.1.6	ark1t_Asi1PacketFormat	R	Asi 1 input packet format 0: 204 1: 188
1.3.6.1.4.1.21678.188.3.2.2.1.1.7	ark1t_Asi1Cd	R	Asi 1 input carrier detect alarm 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.1.1.8	ark1t_Asi1Errors		Asi 1 input wrong bytes received
1.3.6.1.4.1.21678.188.3.2.2.1.2	ark1t_Asi2		
1.3.6.1.4.1.21678.188.3.2.2.1.2.1	ark1t_Asi2WordRate	R	Asi 2 input word rate
1.3.6.1.4.1.21678.188.3.2.2.1.2.2	ark1t_Asi2ByteRate	R	Asi 2 input byte rate
1.3.6.1.4.1.21678.188.3.2.2.1.2.3	ark1t_Asi2Filtered	R	Asi 2 input filtered byte rate
1.3.6.1.4.1.21678.188.3.2.2.1.2.4	ark1t_Asi2OverFlowAlarm	R	Asi 2 input overflow alarm 0: off 1: on
1.3.6.1.4.1.21678.188.3.2.2.1.2.5	ark1t_Asi2Lock	R	Asi 2 input lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.1.2.6	ark1t_Asi2PacketFormat	R	Asi 2 input packet format 0: 204 1: 188
1.3.6.1.4.1.21678.188.3.2.2.1.2.7	ark1t_Asi2Cd	R	Asi 2 input carrier detect alarm 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.1.2.8	ark1t_Asi2Errors	R	Asi 2 input wrong bytes received
1.3.6.1.4.1.21678.188.3.2.2.1.3	ark1t_Asi3		
1.3.6.1.4.1.21678.188.3.2.2.1.3.1	ark1t_Asi3WordRate	R	Asi 3 input word rate
1.3.6.1.4.1.21678.188.3.2.2.1.3.2	ark1t_Asi3ByteRate	R	Asi 3 input byte rate
1.3.6.1.4.1.21678.188.3.2.2.1.3.3	ark1t_Asi3Filtered	R	Asi 3 input filtered byte rate
1.3.6.1.4.1.21678.188.3.2.2.1.3.4	ark1t_Asi3OverFlowAlarm	R	Asi 3 input overflow alarm 0: off 1: on
1.3.6.1.4.1.21678.188.3.2.2.1.3.5	ark1t_Asi3Lock	R	Asi 3 input lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.1.3.6	ark1t_Asi3PacketFormat	R	Asi 3 input packet format 0: 204 1: 188
1.3.6.1.4.1.21678.188.3.2.2.1.3.7	ark1t_Asi3Cd	R	Asi 3 input carrier detect alarm 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.1.3.8	ark1t_Asi3Errors		Asi 3 input wrong bytes received
1.3.6.1.4.1.21678.188.3.2.2.1.4	ark1t_Asi4		
1.3.6.1.4.1.21678.188.3.2.2.1.4.1	ark1t_Asi4WordRate	R	Asi 4 input word rate
1.3.6.1.4.1.21678.188.3.2.2.1.4.2	ark1t_Asi4ByteRate	R	Asi 4 input byte rate
1.3.6.1.4.1.21678.188.3.2.2.1.4.3	ark1t_Asi4Filtered	R	Asi 4 input filtered byte rate
1.3.6.1.4.1.21678.188.3.2.2.1.4.4	ark1t_Asi4OverFlowAlarm	R	Asi 4 input overflow alarm 0: off 1: on

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.3.2.2.1.4.5	ark1t_Asi4Lock	R	Asi 4 input lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.1.4.6	ark1t_Asi4PacketFormat	R	Asi 4 input packet format 0: 204 1: 188
1.3.6.1.4.1.21678.188.3.2.2.1.4.7	ark1t_Asi4Cd	R	Asi 4 input carrier detect alarm 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.1.4.8	ark1t_Asi4Errors		Asi 4 input wrong bytes received
1.3.6.1.4.1.21678.188.3.2.2.2	ark1t_RemodGbe		
1.3.6.1.4.1.21678.188.3.2.2.2.1	ark1t_GbePckCounter	R	Good frame count
1.3.6.1.4.1.21678.188.3.2.2.2.2	ark1t_GbeErrors	R	Bad frame count
1.3.6.1.4.1.21678.188.3.2.2.2.3	ark1t_GbeChannel1		
1.3.6.1.4.1.21678.188.3.2.2.2.3.1	ark1t_GbeChannel1PckRate	R	Gigabit Ethernet Channel 1 input packet rate
1.3.6.1.4.1.21678.188.3.2.2.2.3.2	ark1t_GbeChannel1Filtered	R	Gigabit Ethernet Channel 1 input filtered packet rate
1.3.6.1.4.1.21678.188.3.2.2.2.3.3	ark1t_GbeChannel1PacketFormat	R	Gigabit Ethernet Channel 1 input packet format 0: 204 01: 188 3: not valid
1.3.6.1.4.1.21678.188.3.2.2.2.3.4	ark1t_GbeChannel1Lock	R	Gigabit Ethernet Channel 1 input lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.2.3.5	ark1t_GbeChannel1OverFlowAlarm	R	Gigabit Ethernet Channel 1 input overflow alarm 0: off 1: on
1.3.6.1.4.1.21678.188.3.2.2.2.3.6	ark1t_GbeChannel1SequenceError	R	NOT IMPLEMENTED (Gigabit Ethernet Channel 1 input sequence error 0: off 1: on)
1.3.6.1.4.1.21678.188.3.2.2.2.3.7	ark1t_GbeChannel1Protocol	R	Gigabit Ethernet Channel 1 input transmission protocol 0: udp 1: rtp
1.3.6.1.4.1.21678.188.3.2.2.2.4	ark1t_GbeChannel2		
1.3.6.1.4.1.21678.188.3.2.2.2.4.1	ark1t_GbeChannel2PcktRate	R	Gigabit Ethernet Channel 2 input packet rate
1.3.6.1.4.1.21678.188.3.2.2.2.4.2	ark1t_GbeChannel2Filtered	R	Gigabit Ethernet Channel 2 filtered packet rate
1.3.6.1.4.1.21678.188.3.2.2.2.4.3	ark1t_GbeChannel2PacketFormat	R	Gigabit Ethernet Channel 2 packet format 0: 204 01: 188 3: not valid
1.3.6.1.4.1.21678.188.3.2.2.2.4.4	ark1t_GbeChannel2Lock	R	Gigabit Ethernet Channel 2 lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.2.2.4.5	ark1t_GbeChannel2OverFlowAlarm	R	Gigabit Ethernet Channel 2 overflow alarm 0: off 1: on

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.3.2.2.2.4.6	ark1t_GbeChannel2SequenceError	R	NOT IMPLEMENTED (Gigabit Ethernet Channel 2 sequence error 0: off 1: on)
1.3.6.1.4.1.21678.188.3.2.2.2.4.7	ark1t_GbeChannel2Protocol	R	Gigabit Ethernet Channel 2 transmission protocol 0: udp 1: rtp
1.3.6.1.4.1.21678.188.3.2.3	ark1t_StatisticsItu		
1.3.6.1.4.1.21678.188.3.2.3.1	ark1t_ItuSdi		
1.3.6.1.4.1.21678.188.3.2.3.1.1	ark1t_Sdi1		
1.3.6.1.4.1.21678.188.3.2.3.1.1.1	ark1t_Sdi1Lock	R	NOT IMPLEMENTED Sdi 1 lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.3.1.1.2	ark1t_Sdi1Cd	R	NOT IMPLEMENTED Sdi 1 carrier detect alarm 0: carrier detected 1: carrier not detected
1.3.6.1.4.1.21678.188.3.2.3.1.1.3	ark1t_Sdi1Standard	R	NOT IMPLEMENTED Sdi 1 standard 0: NTSC 4:2:2 component video 1: invalid 2: NTSC 4:2:2 16x9 component video 3: NTSC 4:4:4 13,5 MHz component video 4: PAL 4:2:2 component video 5: invalid 6: PAL 4:2:2 16x9 component video 7: PAL 4:4:4 13,5 MHz component video
1.3.6.1.4.1.21678.188.3.2.3.1.2	ark1t_Sdi2		
1.3.6.1.4.1.21678.188.3.2.3.1.2.1	ark1t_Sdi2Lock	R	NOT IMPLEMENTED Sdi 2 lock status 0: unlock 1: lock
1.3.6.1.4.1.21678.188.3.2.3.1.2.2	ark1t_Sdi2Cd	R	NOT IMPLEMENTED Sdi 2 carrier detect alarm 0: carrier detected 1: carrier not detected
1.3.6.1.4.1.21678.188.3.2.3.1.2.3	ark1t_Sdi2Standard	R	NOT IMPLEMENTED Sdi 1 standard 0: NTSC 4:2:2 component video 1: invalid 2: NTSC 4:2:2 16x9 component

OID	Name	R/W	Description
			video 3: NTSC 4:4:4 13,5 MHz component video 4: PAL 4:2:2 component video 5: invalid 6: PAL 4:2:2 16x9 component video 7: PAL 4:4:4 13,5 MHz component video
1.3.6.1.4.1.21678.188.3.3	ark1t_InputSeamless		
1.3.6.1.4.1.21678.188.3.3.1	ark1t_SeamlessHplInput		
1.3.6.1.4.1.21678.188.3.3.1.1	ark1t_HplInputForceInput	RW	Forces the use of the selected input as High Priority input 0: None 1: HP Input 1 2: HP Input 2
1.3.6.1.4.1.21678.188.3.3.1.2	ark1t_HplInputPriorityInput	RW	Sets the priority input 0: No priority input 1: HP Input 1 2: HP Input 2
1.3.6.1.4.1.21678.188.3.3.1.3	ark1t_HplInputSelectedInput	R	Shows the currently used input 0: HP Input 1 1: HP Input 2
1.3.6.1.4.1.21678.188.3.3.1.4	ark1t_HplInputSwitchState	R	Shows the status of Seamless Switch 0: Stop 1: HP Input 1 only 2: HP Input 2 only
1.3.6.1.4.1.21678.188.3.3.2	ark1t_SeamlessLplInput		
1.3.6.1.4.1.21678.188.3.3.2.1	ark1t_LplInputForceInput	RW	Forces the use of the selected input as Low Priority input 0: None 1: LP Input 1 2: LP Input 2
1.3.6.1.4.1.21678.188.3.3.2.2	ark1t_LplInputPriorityInput	RW	Sets the priority input 0: No priority input 1: LP Input 1 2: LP Input 2
1.3.6.1.4.1.21678.188.3.3.2.3	ark1t_LplInputSelectedInput	R	Shows the currently used input 0: LP Input 1 1: LP Input 2
1.3.6.1.4.1.21678.188.3.3.2.4	ark1t_LplInputSwitchState	R	Shows the status of Seamless Switch 0: Stop 1: LP Input 1 only 2: LP Input 2 only
1.3.6.1.4.1.21678.188.3.3.3	ark1t_SeamlessAlarmsMask		
1.3.6.1.4.1.21678.188.3.3.3.1	ark1t_AlarmsMaskHplInput1		
1.3.6.1.4.1.21678.188.3.3.3.1.1	ark1t_HplInput1TransportErrEn	RW	HP Input 1 Transport error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.1.2	ark1t_HplInput1PckJitterEn	RW	HP Input 1 Packet Jitter error enable 0: Disabled 1:

OID	Name	R/W	Description
			Enabled
1.3.6.1.4.1.21678.188.3.3.3.1.3	ark1t_HplInput1MipCrcEn	RW	HP Input 1 MIP CRC error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.1.4	ark1t_HplInput1PatCrcEn	RW	HP Input 1 PAT CRC error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.1.5	ark1t_HplInput1AsiWordErrEn	RW	HP Input 1 ASI Word error 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.1.6	ark1t_HplInput1MipTypeErrEn	RW	HP Input 1 MIP Priority error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.1.7	ark1t_HplInput1SyncErrEn	RW	HP Input 1 Sync error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.2	ark1t_AlarmsMaskLplInput1		
1.3.6.1.4.1.21678.188.3.3.3.2.1	ark1t_LplInput1TransportErrEn	RW	LP Input 1 Transport error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.2.2	ark1t_LplInput1PckJitterEn	RW	LP Input 1 Packet Jitter error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.2.3	ark1t_LplInput1MipCrcEn	RW	LP Input 1 MIP CRC error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.2.4	ark1t_LplInput1PatCrcEn	RW	LP Input 1 PAT CRC error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.2.5	ark1t_LplInput1AsiWordErrEn	RW	LP Input 1 ASI Word error 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.2.6	ark1t_LplInput1MipTypeErrEn	RW	LP Input 1 MIP Priority error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.2.7	ark1t_LplInput1SyncErrEn	RW	LP Input 1 Sync error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.3	ark1t_AlarmsMaskHplInput2		
1.3.6.1.4.1.21678.188.3.3.3.3.1	ark1t_HplInput2TransportErrEn	RW	HP Input 2 Transport error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.3.2	ark1t_HplInput2PckJitterEn	RW	HP Input 2 Packet Jitter error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.3.3	ark1t_HplInput2MipCrcEn	RW	HP Input 2 MIP CRC error enable

OID	Name	R/W	Description
			0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.3.4	ark1t_HplInput2PatCrcEn	RW	HP Input 2 PAT CRC error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.3.5	ark1t_HplInput2AsiWordErrEn	RW	HP Input 2 ASI Word error 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.3.6	ark1t_HplInput2MipTypeErrEn	RW	HP Input 2 MIP Priority error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.3.7	ark1t_HplInput2SyncErrEn	RW	HP Input 2 Sync error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.4	ark1t_AlarmsMaskLpInput2		
1.3.6.1.4.1.21678.188.3.3.3.4.1	ark1t_LpInput2TransportErrEn	RW	LP Input 2 Transport error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.4.2	ark1t_LpInput2PckJitterEn	RW	LP Input 2 Packet Jitter error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.4.3	ark1t_LpInput2MipCrcEn	RW	LP Input 2 MIP CRC error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.4.4	ark1t_LpInput2PatCrcEn	RW	LP Input 2 PAT CRC error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.4.5	ark1t_LpInput2AsiWordErrEn	RW	LP Input 2 ASI Word error 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.4.6	ark1t_LpInput2MipTypeErrEn	RW	LP Input 2 MIP Priority error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.3.4.7	ark1t_LpInput2SyncErrEn	RW	LP Input 2 Sync error enable 0: Disabled 1: Enabled
1.3.6.1.4.1.21678.188.3.3.4	ark1t_SeamlessAlarmStatus		
1.3.6.1.4.1.21678.188.3.3.4.1	ark1t_StatusHplInput1		
1.3.6.1.4.1.21678.188.3.3.4.1.1	ark1t_HplInput1NetworkDelay	R	HP Input 1 Network Delay
1.3.6.1.4.1.21678.188.3.3.4.1.2	ark1t_HplInput1WatchdogErr	R	HP Input 1 Watchdog error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.3	ark1t_HplInput1LateMipErr	R	HP Input 1 Late MIP error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.4	ark1t_HplInput1NotValidErr	R	HP Input 1 Invalid Input error indicator 0: Off 1: On

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.3.3.4.1.5	ark1t_HplInput1PmtCrcErr	R	HP Input 1 PMT CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.6	ark1t_HplInput1PatCrcErr	R	HP Input 1 PAT CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.7	ark1t_HplInput1MipCrcErr	R	HP Input 1 MIP CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.8	ark1t_HplInput1SyncErr	R	HP Input 1 Transport Stream Sync error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.9	ark1t_HplInput1PckJitterErr	R	HP Input 1 Packet Jitter error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.10	ark1t_HplInput1TransportErr	R	HP Input 1 Transport error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.11	ark1t_HplInput1AsiWordErr	R	HP Input 1 ASI Word error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.12	ark1t_HplInput1NetworkDelayErr	R	HP Input 1 Network Delay error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.1.13	ark1t_HplInput1MipTypeErr	R	HP Input 1 MIP Priority error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2	ark1t_StatusLpInput1		
1.3.6.1.4.1.21678.188.3.3.4.2.1	ark1t_LpInput1NetworkDelay	R	LP Input 1 Network Delay
1.3.6.1.4.1.21678.188.3.3.4.2.2	ark1t_LpInput1WatchdogErr	R	LP Input 1 Watchdog error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.3	ark1t_LpInput1LateMipErr	R	LP Input 1 Late MIP error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.4	ark1t_LpInput1NotValidErr	R	LP Input 1 Invalid Input error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.5	ark1t_LpInput1PmtCrcErr	R	LP Input 1 PMT CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.6	ark1t_LpInput1PatCrcErr	R	LP Input 1 PAT CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.7	ark1t_LpInput1MipCrcErr	R	LP Input 1 MIP CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.8	ark1t_LpInput1SyncErr	R	LP Input 1 Transport Stream

OID	Name	R/W	Description
			Sync error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.9	ark1t_LpInput1PckJitterErr	R	LP Input 1 Packet Jitter error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.10	ark1t_LpInput1TransportErr	R	LP Input 1 Transport error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.11	ark1t_LpInput1AsiWordErr	R	LP Input 1 ASI Word error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.12	ark1t_LpInput1NetworkDelayErr	R	LP Input 1 Network Delay error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.2.13	ark1t_LpInput1MipTypeErr	R	LP Input 1 MIP Priority error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3	ark1t_StatusHplInput2		
1.3.6.1.4.1.21678.188.3.3.4.3.1	ark1t_HplInput2NetworkDelay	R	HP Input 2 Network Delay
1.3.6.1.4.1.21678.188.3.3.4.3.2	ark1t_HplInput2WatchdogErr	R	HP Input 2 Watchdog error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.3	ark1t_HplInput2LateMipErr	R	HP Input 2 Late MIP error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.4	ark1t_HplInput2NotValidErr	R	HP Input 2 Invalid Input error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.5	ark1t_HplInput2PmtCrcErr	R	HP Input 2 PMT CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.6	ark1t_HplInput2PatCrcErr	R	HP Input 2 PAT CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.7	ark1t_HplInput2MipCrcErr	R	HP Input 2 MIP CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.8	ark1t_HplInput2SyncErr	R	HP Input 2 Transport Stream Sync error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.9	ark1t_HplInput2PckJitterErr	R	HP Input 2 Packet Jitter error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.10	ark1t_HplInput2TransportErr	R	HP Input 2 Transport error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.11	ark1t_HplInput2AsiWordErr	R	HP Input 2 ASI Word error indicator 0: Off

OID	Name	R/W	Description
			1: On
1.3.6.1.4.1.21678.188.3.3.4.3.12	ark1t_HpInput2NetworkDelayErr	R	HP Input 1 Network Delay error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.3.13	ark1t_HpInput2MipTypeErr	R	HP Input 1 MIP Priority error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4	ark1t_StatusLpInput2		
1.3.6.1.4.1.21678.188.3.3.4.4.1	ark1t_LpInput2NetworkDelay	R	LP Input 2 Network Delay
1.3.6.1.4.1.21678.188.3.3.4.4.2	ark1t_LpInput2WatchdogErr	R	LP Input 2 Watchdog error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.3	ark1t_LpInput2LateMipErr	R	LP Input 2 Late MIP error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.4	ark1t_LpInput2NotValidErr	R	LP Input 2 Invalid Input error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.5	ark1t_LpInput2PmtCrcErr	R	LP Input 2 PMT CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.6	ark1t_LpInput2PatCrcErr	R	LP Input 2 PAT CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.7	ark1t_LpInput2MipCrcErr	R	LP Input 2 MIP CRC error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.8	ark1t_LpInput2SyncErr	R	LP Input 2 Transport Stream Sync error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.9	ark1t_LpInput2PckJitterErr	R	LP Input 2 Packet Jitter error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.10	ark1t_LpInput2TransportErr	R	LP Input 2 Transport error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.11	ark1t_LpInput2AsiWordErr	R	LP Input 2 ASI Word error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.12	ark1t_LPInput2NetworkDelayErr	R	HP Input 1 Network Delay error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.3.3.4.4.13	ark1t_LpInput2MipTypeErr	R	HP Input 1 MIP Priority error indicator 0: Off 1: On
1.3.6.1.4.1.21678.188.4	ark1t_Mip		
1.3.6.1.4.1.21678.188.4.1	ark1t_MipDetect		
1.3.6.1.4.1.21678.188.4.1.1	ark1t_DetectHp	R	High priority MIP detect 0: not detected 1:

OID	Name	R/W	Description
			detected
1.3.6.1.4.1.21678.188.4.1.2	ark1t_DetectLp	R	Low priority MIP detect 0: not detected 1: detected
1.3.6.1.4.1.21678.188.4.1.3	ark1t_PriorityError		
1.3.6.1.4.1.21678.188.4.1.3.1	ark1t_PriorityErrorHP	R	Priority error indicator 0: good priority, incoming MIPs are HP 1: priority error, incoming MIPs are not HP
1.3.6.1.4.1.21678.188.4.1.3.2	ark1t_PriorityErrorLP	R	Priority error indicator 0: good priority, incoming MIPs are LP 1: priority error, incoming MIPs are not LP
1.3.6.1.4.1.21678.188.4.1.4	ark1t_CRCError		
1.3.6.1.4.1.21678.188.4.1.4.1	ark1t_CRCErrorHP	R	CRC error indicator 0: the CRC of incoming HP MIP packets is correct 1: the CRC of incoming HP MIP packets is incorrect
1.3.6.1.4.1.21678.188.4.1.4.2	ark1t_CRCErrorLP	R	CRC error indicator 0: the CRC of incoming LP MIP packets is correct 1: the CRC of incoming LP MIP packets is incorrect
1.3.6.1.4.1.21678.188.4.1.5	ark1t_NetworkDelay		
1.3.6.1.4.1.21678.188.4.1.5.1	ark1t_NetworkDelayHP	R	Network Delay error indicator 0: Network Delay is below the HP MIP Max Delay 1: Network Delay exceeds the HP MIP Max Delay
1.3.6.1.4.1.21678.188.4.1.5.2	ark1t_NetworkDelayLP	R	Network Delay error indicator 0: Network Delay is below the LP MIP Max Delay 1: Network Delay exceeds the LP MIP Max Delay
1.3.6.1.4.1.21678.188.4.2	ark1t_MipTxld		
1.3.6.1.4.1.21678.188.4.2.1	ark1t_Txld	RW	Transmitter identifier (the range is 0:65535)
1.3.6.1.4.1.21678.188.4.2.2	ark1t_Txld0Enable	RW	TX ID 0 enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.4.3	ark1t_MipConstallation	R	MIP Constellation 0: QPSK 1: 16-QAM 2: 64-QAM
1.3.6.1.4.1.21678.188.4.4	ark1t_MipInterleaver	R	MIP native/in-

OID	Name	R/W	Description
			depth symbol interleaver selector 0: native 1: in-depth
1.3.6.1.4.1.21678.188.4.5	ark1t_MipAlpha	R	MIP alpha 0: not hierarchical 1: alpha=1 2: alpha=2 3: alpha=4
1.3.6.1.4.1.21678.188.4.6	ark1t_MipGuardTime	R	MIP guard interval 0:1/32 1:1/16 2:1/8 3:1/4
1.3.6.1.4.1.21678.188.4.7	ark1t_MipFft	R	MIP transmission mode 0:2K 1:8K 2:4K
1.3.6.1.4.1.21678.188.4.8	ark1t_MipBandwidth	R	MIP bandwidth 0: 7MHz 1: 8MHz
1.3.6.1.4.1.21678.188.4.9	ark1t_MipFec		
1.3.6.1.4.1.21678.188.4.9.1	ark1t_MipFecHp	R	MIP High priority FEC 0: 1/2 1: 2/3 2: 3/4 3: 5/6 4: 7/8
1.3.6.1.4.1.21678.188.4.9.2	ark1t_MipFecLp	R	MIP Low priority FEC 0: 1/2 1: 2/3 2: 3/4 3: 5/6 4: 7/8
1.3.6.1.4.1.21678.188.4.10	ark1t_MipTimeSlicing		
1.3.6.1.4.1.21678.188.4.10.1	ark1t_MipTimeSlicingHp	R	MIP High priority time slicing 0: not used 1: used
1.3.6.1.4.1.21678.188.4.10.2	ark1t_MipTimeSlicingLp	R	MIP Low priority time slicing 0: not used 1: used
1.3.6.1.4.1.21678.188.4.11	ark1t_MipMpeFec		
1.3.6.1.4.1.21678.188.4.11.1	ark1t_MipMpeFecHp	R	High priority MPE-FEC 0: not used 1: used
1.3.6.1.4.1.21678.188.4.11.2	ark1t_MipMpeFecLp	R	Low priority MPE-FEC 0: not used 1: used
1.3.6.1.4.1.21678.188.4.12	ark1t_MipDelayTx	R	MIP transmission delay
1.3.6.1.4.1.21678.188.4.13	ark1t_MipMaxDelay	R	MIP maximum delay [100ns]
1.3.6.1.4.1.21678.188.4.14	ark1t_MipTimeOffset		
1.3.6.1.4.1.21678.188.4.14.1	ark1t_TimeOffsetEnable	RW	MIP time offset enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.4.14.2	ark1t_TimeOffsetStatus	R	MIP time offset [100ns]
1.3.6.1.4.1.21678.188.4.15	ark1t_MipFrequencyOffset		
1.3.6.1.4.1.21678.188.4.15.1	ark1t_FrequencyOffsetEnable	RW	MIP frequency offset enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.4.15.2	ark1t_FrequencyOffsetStatus	R	MIP frequency offset [Hz]
1.3.6.1.4.1.21678.188.4.16	ark1t_MipTxPower		
1.3.6.1.4.1.21678.188.4.16.1	ark1t_TxPoweEnable	R	NOT IMPLEMENTED (MIP transmission power enable 0:

OID	Name	R/W	Description
			disabled 1: enabled)
1.3.6.1.4.1.21678.188.4.16.2	ark1t_TxPowerStatus	R	MIP transmission power [0.1 dB]
1.3.6.1.4.1.21678.188.4.17	ark1t_MipCellId		
1.3.6.1.4.1.21678.188.4.17.1	ark1t_CellIdEnable	RW	Cell id function enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.4.17.2	ark1t_CellIdFunctionEnable	R	Enable function status 0: not received 1: received
1.3.6.1.4.1.21678.188.4.17.3	ark1t_CellIdFunctionTag	R	Cell id function tag 0: not detected 1: detected
1.3.6.1.4.1.21678.188.4.17.4	ark1t_CellIdStatus	R	Cell id function
1.3.6.1.4.1.21678.188.4.17.5	ark1t_CellIdWaitForEnable	R	Cell id function wait for enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.4.18	ark1t_MipFunctionBw		
1.3.6.1.4.1.21678.188.4.18.1	ark1t_FunctionBwEnable	R	NOT IMPLEMENTED (Bandwidth function enable 0: disabled 1: enabled)
1.3.6.1.4.1.21678.188.4.18.2	ark1t_FunctionBwStatus	R	Bandwidth function 0: 5MHz 1: reserved for future use
1.3.6.1.4.1.21678.188.4.18.3	ark1t_FunctionBwEnableRx	R	Enable function status 0: not received 1: received
1.3.6.1.4.1.21678.188.4.18.4	ark1t_FunctionChBwTag	R	Bandwidth function tag 0: not detected 1: detected
1.3.6.1.4.1.21678.188.4.18.5	ark1t_FunctionChBwWaitForEnable	R	Channel bandwidth function wait for enabled 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.5	ark1t_Modulation_Settings		
1.3.6.1.4.1.21678.188.5.1	ark1t_SettingsDvb		
1.3.6.1.4.1.21678.188.5.1.1	ark1t_SettingsDvb_CellIdEnable	RW	Cell Id enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.5.1.2	ark1t_SettingsDvb_TxModeSel		
1.3.6.1.4.1.21678.188.5.1.2.1	ark1t_TxModeSelDvb_T_H	RW	Transmitter mode selection 0: DVB-T 1: DVB-H
1.3.6.1.4.1.21678.188.5.1.2.2	ark1t_TxModeSel_Mfn_Sfn	RW	Transmitter mode selection 0: MFN 1: SFN
1.3.6.1.4.1.21678.188.5.1.2.3	ark1t_TxModeSel_Mip	RW	Transmitter mode selection 0: Local 1: MIP
1.3.6.1.4.1.21678.188.5.1.3	ark1t_SettingsDvb_Local		
1.3.6.1.4.1.21678.188.5.1.3.1	ark1t_LocalFft	RW	Transmission mode selector 0: 2K 1: 8K 2: 4K

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.5.1.3.2	ark1t_LocalGuardTime	RW	Guard time selector 0: 1/32 1: 1/16 2: 1/8 3: 1/4
1.3.6.1.4.1.21678.188.5.1.3.3	ark1t_LocalAlpha	RW	Alpha selector 0: not hierarchical 1: alpha=1 2: alpha=2 3: alpha=4
1.3.6.1.4.1.21678.188.5.1.3.4	ark1t_LocalConstellation	RW	Constellation selector 0: QPSK 1: 16-QAM 2: 64- QAM
1.3.6.1.4.1.21678.188.5.1.3.5	ark1t_LocalSettingsFec		
1.3.6.1.4.1.21678.188.5.1.3.5.1	ark1t_SettingsFecHp	RW	High priority FEC 0: 1/2 1: 2/3 2: 3/4 3: 5/6 4: 7/8
1.3.6.1.4.1.21678.188.5.1.3.5.2	ark1t_SettingsFecLP	RW	Low priority FEC 0: 1/2 1: 2/3 2: 3/4 3: 5/6 4: 7/8
1.3.6.1.4.1.21678.188.5.1.3.6	ark1t_LocalCellId	RW	Local cell id setting (the range is 0:65535)
1.3.6.1.4.1.21678.188.5.1.3.7	ark1t_LocalInterleaver	RW	Symbol interleaver selector 0: native 1: in-depth
1.3.6.1.4.1.21678.188.5.1.3.8	ark1t_LocalTimeSlicing		
1.3.6.1.4.1.21678.188.5.1.3.8.1	ark1t_TimeSlicingHp	RW	High priority time slicing 0: not used 1: used
1.3.6.1.4.1.21678.188.5.1.3.8.2	ark1t_TimeSlicingLp	RW	Low priority time slicing 0: not used 1: used
1.3.6.1.4.1.21678.188.5.1.3.9	ark1t_LocalMpeFecUsed		
1.3.6.1.4.1.21678.188.5.1.3.9.1	ark1t_MpeFecHp	RW	High priority MPE- FEC 0: not used 1: used
1.3.6.1.4.1.21678.188.5.1.3.9.2	ark1t_MpeFecLp	RW	Low priority MPE- FEC 0: not used 1: used
1.3.6.1.4.1.21678.188.5.1.3.10	ark1t_LocalTimeOffset	RW	Time offset setting (the range is - 32768:32767)
1.3.6.1.4.1.21678.188.5.1.3.11	ark1t_LocalFrequencyOffset	RW	Frequency offset setting (the range is - 500000:500000)
1.3.6.1.4.1.21678.188.5.1.3.12	ark1t_LocalDelay	RW	User delay setting (the range is - 8388608:8388607)
1.3.6.1.4.1.21678.188.5.2	ark1t_Settingsltu		
1.3.6.1.4.1.21678.188.5.2.1	ark1t_Settingsltu_Video		
1.3.6.1.4.1.21678.188.5.2.1.1	ark1t_Settingsltu_Video_Whitelevel	RW	White level [%] (range 10 to 22) = [(x*0.05) + 10] (x: range 0 to 240)
1.3.6.1.4.1.21678.188.5.2.1.2	ark1t_Settingsltu_Video_SynchAmplitude	RW	Synch Amplitude [%] (range: 22 to 27,5) = [(x*0.05) + 20] (x: range 40 to 150)
1.3.6.1.4.1.21678.188.5.2.1.3	ark1t_Settingsltu_Video_PedesLevel	RW	Pedes level [%] (range: 0 to 7) = (x*0.05) (x: range 0 to 140)

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.5.2.2	ark1t_Settingsltu_Audio		
1.3.6.1.4.1.21678.188.5.2.2.1	ark1t_Settingsltu_Audio_Deviation	RW	Audio deviation level (range 0 to 255)
1.3.6.1.4.1.21678.188.5.2.2.2	ark1t_Settingsltu_Audio_CarrierLevel1	RW	Carrier Level 1 [dB] (range: -7 to -22) = [-1* (x/10)] (range 70 to 220)
1.3.6.1.4.1.21678.188.5.2.2.3	ark1t_Settingsltu_Audio_CarrierLevel2	RW	Carrier Level 2 [dB] (range: -7 to -22) = [-1* (x/10)] (range 70 to 220)
1.3.6.1.4.1.21678.188.5.2.2.4	ark1t_Settingsltu_Audio_Emphasis	R	Monitor emphasis 0: 50 us 1: 75 us 2: no emphasis 3: no emphasis
1.3.6.1.4.1.21678.188.5.2.2.5	ark1t_Settingsltu_Audio_Type	RW	Select Audio type 0: mono dual carrier 1: dual sound 2: stereo 3: mono single carrier
1.3.6.1.4.1.21678.188.5.2.2.6	ark1t_Settingsltu_Audio_TestCarriersMute	RW	Enable/Disable audio carriers 0: audio carriers disabled 1: audio carrier1 disabled 2: audio carrier2 disabled 3: audio carriers enabled
1.3.6.1.4.1.21678.188.5.2.2.7	ark1t_Settingsltu_Audio_SoundSystem	RW	D,K / PAL Sound System selector 0: FM 6.5/FM 6.742 1: FM 6.5/FM 6.258
1.3.6.1.4.1.21678.188.5.2.2.8	ark1t_Settingsltu_Audio_EmphasisDisable	RW	Enable/Disable Audio Emphasis 0: enabled 1: disabled
1.3.6.1.4.1.21678.188.5.2.3	ark1t_Settingsltu_Teletext		
1.3.6.1.4.1.21678.188.5.2.3.1	ark1t_Settingsltu_Teletext_ReplaceEn	RW	NOT IMPLEMENTED Teletext replace enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.5.2.3.2	ark1t_Settingsltu_Teletext_TxtPid	RW	NOT IMPLEMENTED Teletext PID
1.3.6.1.4.1.21678.188.5.2.4	ark1t_Settingsltu_GroupDelay		
1.3.6.1.4.1.21678.188.5.2.4.1	ark1t_Settingsltu_GroupDelay_Bypass	RW	Bypass group delay filter 0: use filter 1: bypass
1.3.6.1.4.1.21678.188.5.2.4.2	ark1t_Settingsltu_GroupDelay_CurveSelector	RW	Mode selector for group delay filter 0: Curve A 1: Curve B
1.3.6.1.4.1.21678.188.6	ark1t_Output		
1.3.6.1.4.1.21678.188.6.1	ark1t_OutputSettings		
1.3.6.1.4.1.21678.188.6.1.1	ark1t_OutputSettingsA		
1.3.6.1.4.1.21678.188.6.1.1.1	ark1t_SettingsAChannel	RW	Mode A: output channel
1.3.6.1.4.1.21678.188.6.1.1.2	ark1t_SettingsAFrequencyOffset	RW	Mode A: output frequency offset expressed in Hz (from -4,000,000

OID	Name	R/W	Description
			up to 4,000,000)
1.3.6.1.4.1.21678.188.6.1.1.3	ark1t_SettingsAPower	RW	Mode A: output power [dBm x 10]
1.3.6.1.4.1.21678.188.6.1.2	ark1t_OutputSettingsB		
1.3.6.1.4.1.21678.188.6.1.2.1	ark1t_SettingsBChannel	RW	Mode B: output channel
1.3.6.1.4.1.21678.188.6.1.2.2	ark1t_SettingsBFrequencyOffset	RW	Mode B: output frequency offset expressed in Hz (from -4,000,000 up to 4,000,000)
1.3.6.1.4.1.21678.188.6.1.2.3	ark1t_SettingsBPower	RW	Mode B: output power [dBm x 10]
1.3.6.1.4.1.21678.188.6.1.3	ark1t_OutputSettingsGbe		
1.3.6.1.4.1.21678.188.6.1.3.1	ark1t_SettingsGbeTxCh1		
1.3.6.1.4.1.21678.188.6.1.3.1.1	ark1t_GbeTxCh1Selector	RW	Input to GbE Tx Ch 1 selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Channel 1 7: Gbe Channel 2 8: Seamless HP
1.3.6.1.4.1.21678.188.6.1.3.1.2	ark1t_GbeTxCh1Status	R	Tx channel 1: transmission status 0: off 1: Resolving IP 2: No entry error 3: TX data 4: IP address not found 5: TX multicast data 6: No TS input error
1.3.6.1.4.1.21678.188.6.1.3.1.3	ark1t_GbeTxCh1Enable	RW	Tx channel 1: transmission enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.6.1.3.2	ark1t_SettingsGbeTxCh2		
1.3.6.1.4.1.21678.188.6.1.3.2.1	ark1t_GbeTxCh2Selector	RW	Input to GbE Tx Ch 2 selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Channel 1 7: Gbe Channel 2 8: Seamless LP
1.3.6.1.4.1.21678.188.6.1.3.2.2	ark1t_GbeTxCh2Status	R	Tx channel 2: transmission status 0: off 1: Resolving IP 2: No entry error 3: TX data 4: IP address not found 5: TX multicast data 6: No TS input error
1.3.6.1.4.1.21678.188.6.1.3.2.3	ark1t_GbeTxCh2Enable	RW	Tx channel 2: transmission enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.6.1.4	ark1t_OutputSettingsASI		
1.3.6.1.4.1.21678.188.6.1.4.1	ark1t_InputToAsiOutHP	RW	Input to ASI output HP selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6:

OID	Name	R/W	Description
			Gbe Channel 1 7: Gbe Channel 2 8: Seamless HP
1.3.6.1.4.1.21678.188.6.1.4.2	ark1t_InputToAsiOutLP	RW	Input to ASI output LP selector 0: asi 1 1: asi 2 2: asi 3 3: asi 4 6: Gbe Channel 1 7: Gbe Channel 2 8: Seamless LP
1.3.6.1.4.1.21678.188.6.2	ark1t_OutputRf		
1.3.6.1.4.1.21678.188.6.2.1	ark1t_RfOn	RW	RF output enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.6.2.2	ark1t_RfStatus	R	RF output status 0: off 1: on
1.3.6.1.4.1.21678.188.6.2.3	ark1t_RfPrecCurveMode	R	Pre-correction curve editing status 0: auto 1: manual
1.3.6.1.4.1.21678.188.6.2.4	ark1t_RfPrecCurvePort5kStatus	R	Port 5000 status 0: closed 1: opened
1.3.6.1.4.1.21678.188.6.2.5	ark1t_RfPrecCurveActualNumber	R	Current pre- correction curve number
1.3.6.1.4.1.21678.188.6.2.6	ark1t_RfManualCurveSet	RW	Sets the precorrection curve number when the device is in Driver mode 0...6: Curve number from 1 up to 7 255: Flat curve
1.3.6.1.4.1.21678.188.6.3	ark1t_OutputTest		
1.3.6.1.4.1.21678.188.6.3.1	ark1t_TestCw	RW	Test CW 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.6.3.2	ark1t_Test_Dvb		
1.3.6.1.4.1.21678.188.6.3.2.1	ark1t_TestHole	RW	Test Hole 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.6.3.2.2	ark1t_TestForceNullPck	RW	Force null packets 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.6.3.3	ark1t_Test_Itu		
1.3.6.1.4.1.21678.188.6.3.3.1	ark1t_Test_Cw_Av	RW	Test CW A/V enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.6.3.3.2	ark1t_Test_Video	RW	Test video selector 0: bars 1: no video test
1.3.6.1.4.1.21678.188.6.3.3.3	ark1t_Test_Audio	RW	Test audio selector 0: no audio test 1: test tone
1.3.6.1.4.1.21678.188.6.3.3.4	ark1t_Test_Tone_Right	RW	Right tone frequency (range:0 to127) [unit x 100Hz]
1.3.6.1.4.1.21678.188.6.3.3.5	ark1t_Test_Tone_Left	RW	Left tone frequency (range:0 to127) [unit x

OID	Name	R/W	Description
			100Hz]
1.3.6.1.4.1.21678.188.6.3.3.6	ark1t_Test_Mute_Audio_Enable	RW	Mute audio enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.6.3.3.7	ark1t_Test_ltu_Its		
1.3.6.1.4.1.21678.188.6.3.3.7.1	ark1t_Test_Its_enable	RW	Enable ITS 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.6.3.3.7.2	ark1t_Test_Its0	RW	ITS number 0 position (range: 7 to 622)
1.3.6.1.4.1.21678.188.6.3.3.7.3	ark1t_Test_Its1	RW	ITS number 1 position (range: 7 to 622)
1.3.6.1.4.1.21678.188.6.3.3.7.4	ark1t_Test_Its2	RW	ITS number 2 position (range: 7 to 622)
1.3.6.1.4.1.21678.188.6.3.3.7.5	ark1t_Test_Its3	RW	ITS number 3 position (range: 7 to 622)
1.3.6.1.4.1.21678.188.6.3.3.7.6	ark1t_Test_Its4	RW	ITS number 4 position (range: 7 to 622)
1.3.6.1.4.1.21678.188.6.4	ark1t_OutputTsProcessing		
1.3.6.1.4.1.21678.188.6.4.1	ark1t_TsProcessingDeleteNullPck	RW	Delete null packets enable 0: disabled 1: enable
1.3.6.1.4.1.21678.188.6.4.2	ark1t_TsProcessingPcrRestamping	RW	PCR restamping enable 0: disabled 1: enable
1.3.6.1.4.1.21678.188.6.5	ark1t_OutputModulator_monitor		
1.3.6.1.4.1.21678.188.6.5.1	ark1t_modulator_monitor_time_offset	R	Used time offset [100ns] indicator
1.3.6.1.4.1.21678.188.6.5.2	ark1t_modulator_monitor_constallation	R	Used constellation indicator 0: QPSK 1: 16- QAM 2: 64-QAM
1.3.6.1.4.1.21678.188.6.5.3	ark1t_modulator_monitor_alpha	R	Used alpha indicator 0: not hierarchical 1: alpha=1 2: alpha=2 3: alpha=4
1.3.6.1.4.1.21678.188.6.5.4	ark1t_modulator_monitor_guard_time	R	Used guard time indicator 0: 1/32 1: 1/16 2: 1/8 3: 1/4
1.3.6.1.4.1.21678.188.6.5.5	ark1t_modulator_monitor_fft	R	Used transmission mode indicator 0:2K 1:8K 2:4K
1.3.6.1.4.1.21678.188.6.5.6	ark1t_modulator_monitor_bandwidth	R	Used bandwidth indicator 0: 7MHz 1: 8MHz 2: 6MHz 3: 5MHz
1.3.6.1.4.1.21678.188.6.5.7	ark1t_modulator_monitor_frequency_center	R	Center Frequency indicator (expressed in Hz)
1.3.6.1.4.1.21678.188.6.5.8	ark1t_modulator_monitor_frequency_offset	R	Used frequency offset indicator
1.3.6.1.4.1.21678.188.6.5.9	ark1t_modulator_monitor_cell_id	R	Used Cell id indicator
1.3.6.1.4.1.21678.188.6.5.10	ark1t_modulator_monitor_cell_id_en	R	Cell id enable status indicator 0:

OID	Name	R/W	Description
			disabled 1: enabled
1.3.6.1.4.1.21678.188.6.5.11	ark1t_modulator_monitor_interleaver	R	Used symbol interleaver indicator 0: native 1: in-depth
1.3.6.1.4.1.21678.188.6.5.12	ark1t_modulator_monitor_system_delay	R	System delay indicator [100ns]
1.3.6.1.4.1.21678.188.6.5.13	ark1t_modulator_monitor_HP_network_delay	R	HP seamless input selected Network delay [100ns] indicator
1.3.6.1.4.1.21678.188.6.5.14	ark1t_modulator_monitor_Fec		
1.3.6.1.4.1.21678.188.6.5.14.1	ark1t_FecHp	R	FEC high priority used 0: 1/2 1: 2/3 2: 3/4 3: 5/6 4: 7/8
1.3.6.1.4.1.21678.188.6.5.14.2	ark1t_FecLp	R	FEC low priority used 0: 1/2 1: 2/3 2: 3/4 3: 5/6 4: 7/8
1.3.6.1.4.1.21678.188.6.5.15	ark1t_modulator_monitor_MpeFec		
1.3.6.1.4.1.21678.188.6.5.15.1	ark1t_modulator_monitor_MpeFecHp	R	High priority MPE-FEC 0: not used 1: used
1.3.6.1.4.1.21678.188.6.5.15.2	ark1t_modulator_monitor_MpeFecLp	R	Low priority MPE-FEC 0: not used 1: used
1.3.6.1.4.1.21678.188.6.5.16	ark1t_modulator_monitor_TimeSlicing		
1.3.6.1.4.1.21678.188.6.5.16.1	ark1t_modulator_monitor_TimeSlicingHp	R	Modulator High priority time slicing 0: not used 1: used
1.3.6.1.4.1.21678.188.6.5.16.2	ark1t_modulator_monitor_TimeSlicingLp	R	Modulator Low priority time slicing 0: not used 1: used
1.3.6.1.4.1.21678.188.6.5.17	ark1t_modulator_monitor_LP_network_delay	R	LP seamless input selected Network delay [100ns] indicator
1.3.6.1.4.1.21678.188.6.5.18	ark1t_modulator_monitor_device_delay	R	Device delay [100ns] indicator
1.3.6.1.4.1.21678.188.6.6	ark1t_OutputMonitor		
1.3.6.1.4.1.21678.188.6.6.1	ark1t_Monitor_FwdPowerDbm	R	Forward power [dBm x 10] indicator
1.3.6.1.4.1.21678.188.6.6.2	ark1t_Monitor_AgcMode	R	NOT IMPLEMENTED AGC mode status 0: analog 1: digital
1.3.6.1.4.1.21678.188.6.6.3	ark1t_Monitor_AgcOn	R	Auto AGC status 0: off 1: on
1.3.6.1.4.1.21678.188.6.7	ark1t_OutputPower		
1.3.6.1.4.1.21678.188.6.7.1	ark1t_PowerMode	R	NOT IMPLEMENTED (Output power mode indicator 0: local 1: MIP)
1.3.6.1.4.1.21678.188.6.7.2	ark1t_FromMip		
1.3.6.1.4.1.21678.188.6.7.2.1	ark1t_mipActual	R	NOT IMPLEMENTED (Actual Mip power [dBm x 10])

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.6.7.2.2	ark1t_mipAntennaGain		NOT IMPLEMENTED (Mip antenna gain)
1.3.6.1.4.1.21678.188.7	ark1t_HW_monitor		
1.3.6.1.4.1.21678.188.7.1	ark1t_HW_monitor_RflPowerDbm	R	Reflex power [dBm x 10]
1.3.6.1.4.1.21678.188.7.2	ark1t_HW_monitor_Amplifier	R	Amplifier status 0: on 1: off 2: restart 3: standby off 4: GPS off 5: init 6: alarm off 7: rf off 8: opto off 9: change mode
1.3.6.1.4.1.21678.188.7.3	ark1t_HW_monitor_CurrentOut	R	Current indicator (mA) 28/42V
1.3.6.1.4.1.21678.188.7.4	ark1t_HW_monitor_PowerSupply	R	Voltage indicator (mV): 28V for 20W and 50W versions, and 42V for 200/500W version
1.3.6.1.4.1.21678.188.7.5	ark1t_HW_monitor_PowerSupply24V	R	24V voltage indicator (mV), only in 200/500W version
1.3.6.1.4.1.21678.188.7.6	ark1t_HW_monitor_FanPulse		
1.3.6.1.4.1.21678.188.7.6.1	ark1t_FanSpeed1	R	FAN 1 speed (rpm)
1.3.6.1.4.1.21678.188.7.6.2	ark1t_FanSpeed2	R	FAN 2 speed (rpm)
1.3.6.1.4.1.21678.188.7.6.3	ark1t_FanSpeed3	R	FAN 3 speed (rpm) - only for 200W/500W version
1.3.6.1.4.1.21678.188.7.6.4	ark1t_FanSpeed4	R	FAN 4 speed (rpm) - only for 200W/500W version
1.3.6.1.4.1.21678.188.7.7	ark1t_HW_monitor_Temperature		
1.3.6.1.4.1.21678.188.7.7.1	ark1t_TemperatureCase	R	Case temperature
1.3.6.1.4.1.21678.188.7.7.2	ark1t_TemperaturePsu	R	PSU temperature
1.3.6.1.4.1.21678.188.7.7.3	ark1t_TemperatureCase2	R	Case temperature 2 (only in SDTX 200/300 version)
1.3.6.1.4.1.21678.188.7.8	ark1t_HW_monitor_Relays		
1.3.6.1.4.1.21678.188.7.8.1	ark1t_Relay0Status	R	Relay 0 status 0: on 1: off
1.3.6.1.4.1.21678.188.7.8.2	ark1t_Relay1Status	R	Relay 1 status 0: on 1: off
1.3.6.1.4.1.21678.188.7.8.3	ark1t_Relay2Status	R	Relay 2 status 0: on 1: off
1.3.6.1.4.1.21678.188.7.8.4	ark1t_Relay3Status	R	Relay 3 status 0: on 1: off
1.3.6.1.4.1.21678.188.7.9	ark1t_HW_monitor_Opto		
1.3.6.1.4.1.21678.188.7.9.1	ark1t_Opto0Status	R	Opto 0 status (RF Off): if closed the output RF is switch off 0: closed 1: opened
1.3.6.1.4.1.21678.188.7.9.2	ark1t_Opto1Status	R	Opto 1 status (Mode Switch): if closed Mode B, otherwise Mode A 0: closed 1: opened

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.7.9.3	ark1t_Opto2Status	R	Opto 2 status (Retry, only in 200 watt version) 0: closed 1: opened
1.3.6.1.4.1.21678.188.7.9.4	ark1t_Optoy3Status	R	Opto 3 status (Stand-by): if closed the device is put on stand-by 0: closed 1: opened
1.3.6.1.4.1.21678.188.7.9.10	ark1t_HW_monitor_PS2_CurrentOut	R	PS2 Current indicator (mA) 28/42V
1.3.6.1.4.1.21678.188.7.9.11	ark1t_HW_monitor_PS2_PowerSupply	R	PS2 Voltage indicator (mV): 28V for 20W and 50W versions, and 42V for 200/500W version
1.3.6.1.4.1.21678.188.7.9.12	ark1t_HW_monitor_PS2_PowerSupply24V	R	PS2 24V voltage indicator (mV), only in 200/500W version
1.3.6.1.4.1.21678.188.8	ark1t_Gps		
1.3.6.1.4.1.21678.188.8.1	ark1t_GpsSat		
1.3.6.1.4.1.21678.188.8.1.1	ark1t_SatVisible	R	Number of visible satellite
1.3.6.1.4.1.21678.188.8.1.2	ark1t_SatTracked	R	Number of satellite locked
1.3.6.1.4.1.21678.188.8.2	ark1t_GpsStatus		
1.3.6.1.4.1.21678.188.8.2.1	ark1t_StatusDataValid	R	Signal precision status 0: Not valid 1: Valid
1.3.6.1.4.1.21678.188.8.3	ark1t_GpsPosition		
1.3.6.1.4.1.21678.188.8.3.1	ark1t_PositionLatitude	R	Latitude position []
1.3.6.1.4.1.21678.188.8.3.2	ark1t_PositionLongitude	R	Longitude position []
1.3.6.1.4.1.21678.188.8.4	ark1t_GpsTime		
1.3.6.1.4.1.21678.188.8.4.1	ark1t_TimeActual	R	UTC time
1.3.6.1.4.1.21678.188.8.4.2	ark1t_TimeDate	R	UTC date
1.3.6.1.4.1.21678.188.9	ark1t_Clock		
1.3.6.1.4.1.21678.188.9.1	ark1t_ClockSel10MhzReference	RW	10 MHz frequency reference 0: ext 1: int 2: gps
1.3.6.1.4.1.21678.188.9.2	ark1t_ClockSel1Pps	RW	1PPS frequency reference 0: int 1: ext
1.3.6.1.4.1.21678.188.9.3	ark1t_GainFineTuning	RW	Gain fine tuning (from 0 up to 255)
1.3.6.1.4.1.21678.188.10	ark1t_Network		
1.3.6.1.4.1.21678.188.10.1	ark1t_NetworkManagement		
1.3.6.1.4.1.21678.188.10.1.1	ark1t_ManagementMacAddress	R	Board MAC address
1.3.6.1.4.1.21678.188.10.1.2	ark1t_ManagementIpAddress	R	Board IP address
1.3.6.1.4.1.21678.188.10.1.3	ark1t_ManagementNetmask	R	Subnet mask
1.3.6.1.4.1.21678.188.10.1.4	ark1t_ManagementGateway	R	Gateway address
1.3.6.1.4.1.21678.188.10.1.5	ark1t_ManagementUdpPort	RW	UDP port (the range is 0:65535)
1.3.6.1.4.1.21678.188.10.1.6	ark1t_ManagementSpeed	R	GBE Speed 0: 10 Mbit 1: 100 Mbit 2: 1 Gbit
1.3.6.1.4.1.21678.188.10.2	ark1t_NetworkIcmp		
1.3.6.1.4.1.21678.188.10.2.1	ark1t_IcmpEnable	RW	IGMP enable 0:

OID	Name	R/W	Description
			disabled 1: enabled
1.3.6.1.4.1.21678.188.10.3	ark1t_NetworkTxChannel1		
1.3.6.1.4.1.21678.188.10.3.1	ark1t_TxChannel1Type	RW	Tx channel 1: transmission protocol selector 0: RTP 1: UDP
1.3.6.1.4.1.21678.188.10.3.2	ark1t_TxChannel1TsFormat	RW	Tx channel 1: packet format 0: 204 1: 188
1.3.6.1.4.1.21678.188.10.3.3	ark1t_TxChannel1TsNum	RW	Tx channel 1: number of TS packets per frame (for 188-byte packets, the range is 0:7; for 204-byte packets, the range is 0:6)
1.3.6.1.4.1.21678.188.10.3.4	ark1t_TxChannel1IpAddr	RW	Tx channel 1: destination IP address
1.3.6.1.4.1.21678.188.10.3.5	ark1t_TxChannel1Port	RW	Tx channel 1: destination port (the range is 0:65535)
1.3.6.1.4.1.21678.188.10.3.6	ark1t_TxChannel1Ssrc	RW	Tx channel 1: SSRC identifier (the range is 0:4294967295)
1.3.6.1.4.1.21678.188.10.3.7	ark1t_TxChannel1MacAddr	R	Tx channel 1: destination MAC address
1.3.6.1.4.1.21678.188.10.3.8	ark1t_TxChannel1SourceClkReference	RW	Tx channel 1: RTP timestamp clock reference selector 0: 90 kHz 1: 27 MHz
1.3.6.1.4.1.21678.188.10.4	ark1t_NetworkTxChannel2		
1.3.6.1.4.1.21678.188.10.4.1	ark1t_TxChannel2Type	RW	Tx channel 2: transmission protocol selector 0: RTP 1: UDP
1.3.6.1.4.1.21678.188.10.4.2	ark1t_TxChannel2TsFormat	RW	Tx channel 2: packet format 0: 204 1: 188
1.3.6.1.4.1.21678.188.10.4.3	ark1t_TxChannel2TsNum	RW	Tx channel 2: number of TS packets per frame (for 188-byte packets, the range is 0:7; for 204-byte packets, the range is 0:6)
1.3.6.1.4.1.21678.188.10.4.4	ark1t_TxChannel2IpAddr	RW	Tx channel 2: destination IP address
1.3.6.1.4.1.21678.188.10.4.5	ark1t_TxChannel2Port	RW	Tx channel 2: destination port (the range is 0:65535)
1.3.6.1.4.1.21678.188.10.4.6	ark1t_TxChannel2Ssrc	RW	Tx channel 2: SSRC identifier (the range is 0:4294967295)
1.3.6.1.4.1.21678.188.10.4.7	ark1t_TxChannel2MacAddr	R	Tx channel 2:

OID	Name	R/W	Description
			destination MAC address
1.3.6.1.4.1.21678.188.10.4.8	ark1t_TxChannel2SourceClkReference	RW	Tx channel 2: RTP timestamp clock reference selector 0: 90 kHz 1: 27 MHz
1.3.6.1.4.1.21678.188.10.5	ark1t_NetworkRxChannel1		
1.3.6.1.4.1.21678.188.10.5.1	ark1t_RxChannel1IpAddr	RW	Rx channel 1: IP address
1.3.6.1.4.1.21678.188.10.5.2	ark1t_RxChannel1Port	RW	Rx channel 1: port (the range is 0:65535)
1.3.6.1.4.1.21678.188.10.5.3	ark1t_RxChannel1ClkRecoveryEnable	RW	Rx channel 1: clock recovery enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.10.5.4	ark1t_RxChannel1SourceClkReference	RW	Rx channel 1: source clock reference selector 0: 90 kHz 1: 27 MHz
1.3.6.1.4.1.21678.188.10.6	ark1t_NetworkRxChannel2		
1.3.6.1.4.1.21678.188.10.6.1	ark1t_RxChannel2IpAddr	RW	Rx channel 2: IP address
1.3.6.1.4.1.21678.188.10.6.2	ark1t_RxChannel2Port	RW	Rx channel 2: port (the range is 0:65535)
1.3.6.1.4.1.21678.188.10.6.3	ark1t_RxChannel2ClkRecoveryEnable	RW	Rx channel 2: clock recovery enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.10.6.4	ark1t_RxChannel2SourceClkReference	RW	Rx channel 2: source clock reference selector 0: 90 kHz 1: 27 MHz
1.3.6.1.4.1.21678.188.10.7	ark1t_SnmpTrap		
1.3.6.1.4.1.21678.188.10.7.1	ark1t_Trap0IpAddress	RW	Trap 0: destination IP address
1.3.6.1.4.1.21678.188.10.7.2	ark1t_Trap1IpAddress	RW	Trap 1: destination IP address
1.3.6.1.4.1.21678.188.10.7.3	ark1t_Trap2IpAddress	RW	Trap 2: destination IP address
1.3.6.1.4.1.21678.188.10.7.4	ark1t_Trap3IpAddress	RW	Trap 3: destination IP address
1.3.6.1.4.1.21678.188.10.7.5	ark1t_Trap4IpAddress	RW	Trap 4: destination IP address
1.3.6.1.4.1.21678.188.10.7.6	ark1t_Trap5IpAddress	RW	Trap 5: destination IP address
1.3.6.1.4.1.21678.188.10.7.7	ark1t_Trap6IpAddress	RW	Trap 6: destination IP address
1.3.6.1.4.1.21678.188.10.7.8	ark1t_Trap7IpAddress	RW	Trap 7: destination IP address
1.3.6.1.4.1.21678.188.11	ark1t_Alarm		
1.3.6.1.4.1.21678.188.11.1	ark1t_AlarmThr		
1.3.6.1.4.1.21678.188.11.1.1	ark1t_ThrDemodBer	RW	NOT IMPLEMENTED Demodulator BER alarm threshold (val * 10^-6)
1.3.6.1.4.1.21678.188.11.1.2	ark1t_ThrRfSquelchA	RW	NOT

OID	Name	R/W	Description
			IMPLEMENTED Mode A: Squelch threshold (absolute value)
1.3.6.1.4.1.21678.188.11.1.3	ark1t_ThrRfSquelchB	RW	NOT IMPLEMENTED Mode B: Squelch threshold (absolute value)
1.3.6.1.4.1.21678.188.11.1.4	ark1t_ThrFwdPowerWarning	RW	Forward power warning threshold (absolute value [dBm x 10])
1.3.6.1.4.1.21678.188.11.1.5	ark1t_ThrFwdPowerAlarm	RW	Forward power alarm threshold (absolute value [dBm x 10])
1.3.6.1.4.1.21678.188.11.1.6	ark1t_ThrTemperatureWarning	RW	Case temperature warning threshold
1.3.6.1.4.1.21678.188.11.1.7	ark1t_ThrTemperatureAlarm	RW	Case temperature alarm threshold
1.3.6.1.4.1.21678.188.11.1.8	ark1t_ThrSNmodeA	RW	NOT IMPLEMENTED Mode A: S/N threshold (dBm 10-50)
1.3.6.1.4.1.21678.188.11.1.9	ark1t_ThrSNmodeB	RW	NOT IMPLEMENTED Mode B: S/N threshold (dBm 10-50)
1.3.6.1.4.1.21678.188.11.1.10	ark1t_MipAlarmDelay	RW	MIP missing alarm delay [val * 100 ms]. The range is 1:255 (from 0,1 s up to 25,5 s).
1.3.6.1.4.1.21678.188.11.1.11	ark1t_InputAlarmDelay	RW	TS input missing alarm delay [val * 100 ms]. The range is 1:255 (from 0,1 s up to 25,5 s).
1.3.6.1.4.1.21678.188.11.2	ark1t_AlarmStatus	R	32 bits word indicating alarms status (each bit is associated to an alarm)
1.3.6.1.4.1.21678.188.11.3	ark1t_AlarmSingleStatus		
1.3.6.1.4.1.21678.188.11.3.1	ark1t_UpconvUnlockStatus	R	Upconverter Oscillator Unlock alarm status
1.3.6.1.4.1.21678.188.11.3.2	ark1t_PsVoltageStatus	R	PS Voltage out of range alarm status
1.3.6.1.4.1.21678.188.11.3.3	ark1t_PsCurrentStatus	R	PS Current out of range alarm status
1.3.6.1.4.1.21678.188.11.3.4	ark1t_AbsPowerLimiterStatus	R	Absolute Power Limiter alarm status
1.3.6.1.4.1.21678.188.11.3.5	ark1t_CommErrorStatus	R	Upconverter Communication error alarm status
1.3.6.1.4.1.21678.188.11.3.6	ark1t_TempHighStatus	R	Temperature High Alarm status
1.3.6.1.4.1.21678.188.11.3.7	ark1t_TempAlarmStatus	R	Temperature Level -3dB alarm status

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.11.3.8	ark1t_TempWarningStatus	R	Temperature High Warning status
1.3.6.1.4.1.21678.188.11.3.9	ark1t_FwdPowerHighStatus	R	Forward Power High alarm status
1.3.6.1.4.1.21678.188.11.3.10	ark1t_FwdPowerWarningStatus	R	Forward Power Low Warning status
1.3.6.1.4.1.21678.188.11.3.11	ark1t_FwdPowerAlarmStatus	R	Forward Power Low Alarm status
1.3.6.1.4.1.21678.188.11.3.12	ark1t_ReflexPowerStatus	R	Reflex Power High alarm status
1.3.6.1.4.1.21678.188.11.3.13	ark1t_FansSpeedStatus	R	Fans Speed alarm status
1.3.6.1.4.1.21678.188.11.3.14	ark1t_SnLevelStatus	R	NOT IMPLEMENTED S/N Level alarm status
1.3.6.1.4.1.21678.188.11.3.15	ark1t_GpsLockStatus	R	GPS Lock alarm status
1.3.6.1.4.1.21678.188.11.3.16	ark1t_GpsCommErrorStatus	R	GPS Communication Error alarm status
1.3.6.1.4.1.21678.188.11.3.17	ark1t_10MhzLockStatus	R	Signal 10 MHz Lock alarm status
1.3.6.1.4.1.21678.188.11.3.18	ark1t_120MhzLockStatus	R	Signal 120 MHz Lock alarm status
1.3.6.1.4.1.21678.188.11.3.19	ark1t_960MhzLockStatus	R	Signal 960 MHz Lock alarm status
1.3.6.1.4.1.21678.188.11.3.20	ark1t_DownconvUnlockStatus	R	NOT IMPLEMENTED Downconverter Oscillator Unlock alarm status
1.3.6.1.4.1.21678.188.11.3.21	ark1t_NoRfInputStatus	R	NOT IMPLEMENTED No RF Input alarm status
1.3.6.1.4.1.21678.188.11.3.22	ark1t_RfInputSquelchStatus	R	NOT IMPLEMENTED RF Input Squelch alarm status
1.3.6.1.4.1.21678.188.11.3.23	ark1t_BerAlarmStatus	R	NOT IMPLEMENTED RF Digital BER Alarm status
1.3.6.1.4.1.21678.188.11.3.24	ark1t_FileSysErrorStatus	R	File System Error alarm status
1.3.6.1.4.1.21678.188.11.3.25	ark1t_BadFileStatus	R	Bad File in File System alarm status
1.3.6.1.4.1.21678.188.11.3.26	ark1t_1PpsLockStatus	R	DVB-T 1PPS Lock alarm status
1.3.6.1.4.1.21678.188.11.3.27	ark1t_PpsPhaseStatus	R	DVB-T PPS Phase alarm status
1.3.6.1.4.1.21678.188.11.3.28	ark1t_SysDelayStatus	R	DVB-T System Delay alarm status
1.3.6.1.4.1.21678.188.11.3.29	ark1t_NoMipStatus	R	DVB-T No MIP alarm status
1.3.6.1.4.1.21678.188.11.3.30	ark1t_NoInputStatus	R	No Input alarm status
1.3.6.1.4.1.21678.188.11.3.31	ark1t_FpgaBootStatus	R	FPGA Boot alarm status
1.3.6.1.4.1.21678.188.11.3.32	ark1t_WarmUpStatus	R	Warm up alarm status

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.11.3.33	ark1t_InputNotPresentStatus	R	Input Not Present alarm status
1.3.6.1.4.1.21678.188.11.3.34	ark1t_InputNotValidStatus	R	Input Not Valid alarm status
1.3.6.1.4.1.21678.188.11.3.35	ark1t_LateMipStatus	R	Late MIP alarm status
1.3.6.1.4.1.21678.188.11.3.36	ark1t_NetworkDelayStatus	R	Network Delay alarm status
1.3.6.1.4.1.21678.188.11.4	ark1t_AlarmTrap		
1.3.6.1.4.1.21678.188.11.4.1	ark1t_Trap0Enable	RW	Trap 0: alarm mask
1.3.6.1.4.1.21678.188.11.4.2	ark1t_Trap1Enable	RW	Trap 1: alarm mask
1.3.6.1.4.1.21678.188.11.4.3	ark1t_Trap2Enable	RW	Trap 2: alarm mask
1.3.6.1.4.1.21678.188.11.4.4	ark1t_Trap3Enable	RW	Trap 3: alarm mask
1.3.6.1.4.1.21678.188.11.4.5	ark1t_Trap4Enable	RW	Trap 4: alarm mask
1.3.6.1.4.1.21678.188.11.4.6	ark1t_Trap5Enable	RW	Trap 5: alarm mask
1.3.6.1.4.1.21678.188.11.4.7	ark1t_Trap6Enable	RW	Trap 6: alarm mask
1.3.6.1.4.1.21678.188.11.4.8	ark1t_Trap7Enable	RW	Trap 7: alarm mask
1.3.6.1.4.1.21678.188.11.5	ark1t_AlarmRelay		
1.3.6.1.4.1.21678.188.11.5.1	ark1t_Relay0Mode	RW	Relay 0: mode selector 0: alarm mask 1: mode indicator 2: RF status
1.3.6.1.4.1.21678.188.11.5.2	ark1t_Relay0Enable	RW	Relay 0: alarm mask
1.3.6.1.4.1.21678.188.11.5.3	ark1t_Relay1Mode	RW	Relay 1: mode selector 0: alarm mask 1: mode indicator
1.3.6.1.4.1.21678.188.11.5.4	ark1t_Relay1Enable	RW	Relay 1: alarm mask
1.3.6.1.4.1.21678.188.11.5.5	ark1t_Relay2Enable	RW	Relay 2: alarm mask
1.3.6.1.4.1.21678.188.11.5.6	ark1t_Relay3Enable	RW	Relay 3: alarm mask
1.3.6.1.4.1.21678.188.11.6	ark1t_AlarmFrontPanelEnable	RW	Front panel: alarm mask
1.3.6.1.4.1.21678.188.11.7	ark1t_AlarmJavaEnable	RW	Java: alarm mask
1.3.6.1.4.1.21678.188.11.8	ark1t_AlarmEventEnable	RW	Events: alarm mask
1.3.6.1.4.1.21678.188.11.9	ark1t_AlarmRfOffEnable	RW	RF Off: alarm mask
1.3.6.1.4.1.21678.188.12	ark1t_Config		
1.3.6.1.4.1.21678.188.12.1	ark1t_ConfigLoad	W	Load configuration
1.3.6.1.4.1.21678.188.12.2	ark1t_ConfigSave	W	Save configuration
1.3.6.1.4.1.21678.188.12.3	ark1t_ConfigReset	W	Reset board
1.3.6.1.4.1.21678.188.12.4	ark1t_ConfigStandByEnable	RW	LCD stand-by button enable 0: disabled 1: enabled
1.3.6.1.4.1.21678.188.12.5	ark1t_ConfigStandByStatus	R	Current device mode 0: normal 1: standby
1.3.6.1.4.1.21678.188.12.6	ark1t_ConfigTime		
1.3.6.1.4.1.21678.188.12.6.1	ark1t_Year	RW	Year setting (starting from

OID	Name	R/W	Description
1.3.6.1.4.1.21678.188.12.6.2	ark1t_Month	RW	Month setting
1.3.6.1.4.1.21678.188.12.6.3	ark1t_Day	RW	Day setting
1.3.6.1.4.1.21678.188.12.6.4	ark1t_Hour	RW	Hour setting
1.3.6.1.4.1.21678.188.12.6.5	ark1t_Minutes	RW	Minutes setting
1.3.6.1.4.1.21678.188.12.6.6	ark1t_Seconds	RW	Seconds setting
1.3.6.1.4.1.21678.188.13	ark1t_TrapAlarm		Alarm

3.16 Configuring alarms MASKS

The *ark1c_Alarm* leaf allows the monitoring of alarms status, the setting of alarm masks and thresholds.

Use alarm masks to select how and which alarm have to be notified.

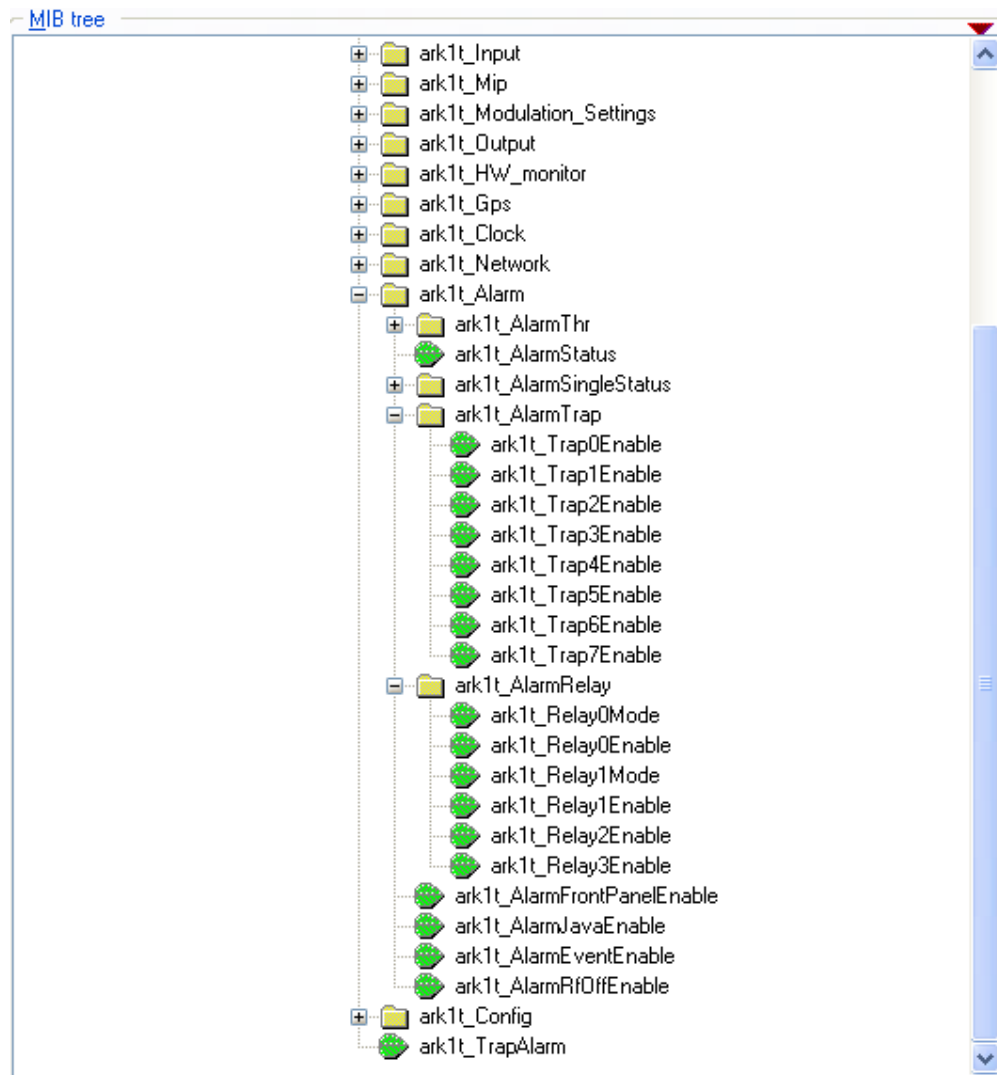


Figure 28. Configuring alarms

There are six families of alarm masks:

- **ARK1r_AlarmJavaEnable:** the selected alarms status is notified on the Java alarm page icon.
- **ARK1r_AlarmFrontPanelEnable:** the selected alarms status is notified on LCD display lighting the alarm button and listing the alarms in the Alarms menu (refer to [Alarms Menu](#) paragraph).
- **ARK1r_AlarmEventsEnable:** the selected alarms status generate an alarm event that will be logged in the event memory (refer to [Events](#) paragraph).
- **ARK1r_AlarmRelay:** the selected alarms switch-on the corresponding relay.
- **ARK1r_AlarmTrap:** the selected alarms generate the corresponding trap message.
- **ARK1r_AlarmRfEnable:** the selected alarms switch off the RF output. The RF mask is almost entirely fixed in order to avoid board damages or malfunctioning.

Each alarm mask is a 32 bits word and each alarm represents one bit (0: Off, 1: On). Set the decimal value corresponding to the mask you want to activate in the relative leaf. The following table shows the bit-to-alarm association.

Bit-to-alarm association map

Table 18

Alarm	Bit	Alarm	Bit
Up converter Osc. Unlock	0	Signal 10 MHz Lock	16
PS Voltage out range	1	Signal 120 MHz Lock	17
PS Current out of range	2	Signal 960 MHz Lock	18
Absolute Power Limiter	3	Input Not Valid Alarm	19
Communication error	4	Late MIP Alarm	20
Temperature High Alarm	5	Network delay Alarm	21
Temperature Level-3dB	6	File System Error	22
Temperature High Warning	7	Bad File in File system	23
Forward Power High	8	DVB-T 1PPS Lock	24
Forward Power Low Warning	9	DVB-T PPS Phase	25
Forward Power Low Alarm	10	DVB-T System Delay	26
Reflex Power High	11	DVB-T No MIP	27
Fan Speed	12	No Input	28
Input Not Present Alarm	13	FPGA Boot alarm	29
GPS Lock	14	Warm up alarm	30
GPS Communication Error	15	Input Not Valid Alarm	31

E.g. if you want to enable the No MIP and No Input alarms of a generic alarm mask, set the decimal value of 805,306,368 that corresponds to a binary value of 0011 0000 0000 0000 0000 0000 0000.

3.17 Traps

While a management station can poll, at fixed time interval, all the agents it knows for some key information, each agent is responsible for notifying the management station of any alarm condition. These events are communicated in SNMP messages known as *traps*.

The following parameters should be set in order to correctly configure traps:

- SNMP Agent Port: 162.
- SNMP Agent Transport protocol: IP/UDP.
- Variable
 - OID: 1.3.6.1.4.1.21678.188.13.
 - Value(gauge): 32 Bit

3.17.1 Configuring traps

Use Java (refer to [Network](#) and [Alarms](#) paragraphs for further information) or SNMP user interfaces to configure traps.

The configuration of traps is performed through the setting of a trap alarm mask, by means of leaves housed in the *ARK1t_AlarmTrap* node (refer to [Configuring alarms](#) paragraph), and through the setting of the destination IP Address of the receiving management stations, by means of leaves housed in the *ARK1t_Network* node as shown in next figure.

Figure 29. Configuring traps

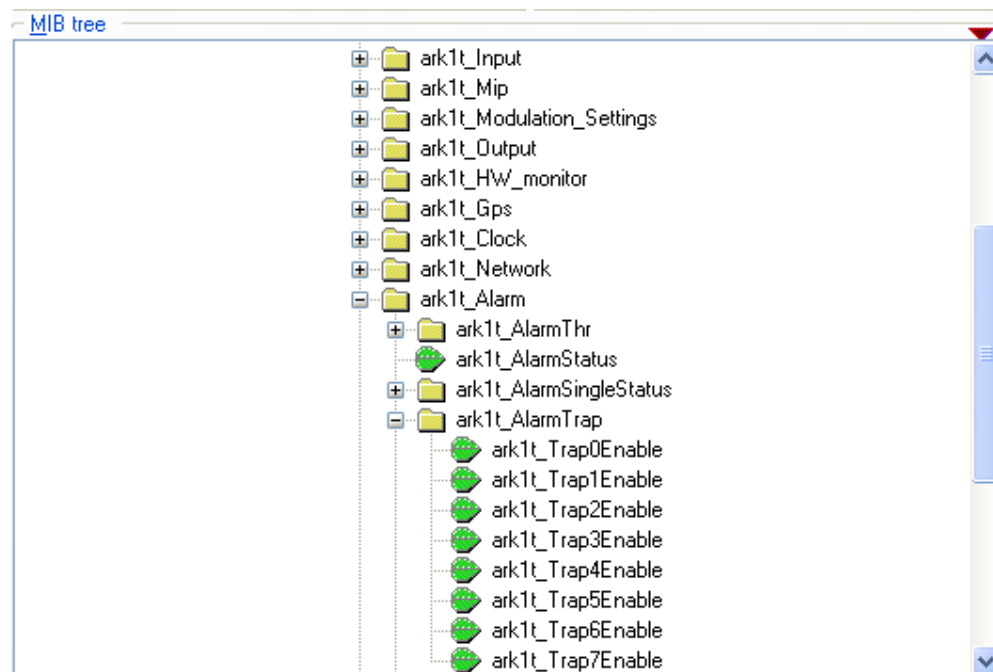
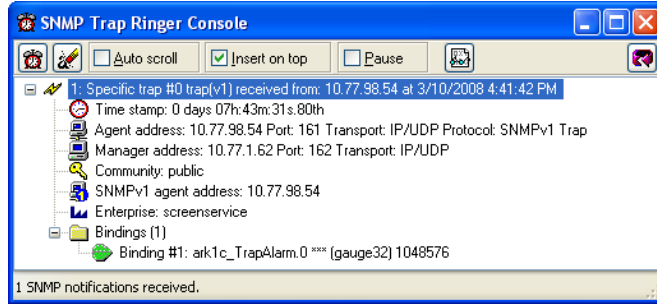


Figure 30. SNMP Trap Message



Each trap carries a 32 bits word in which each alarm represents one bit (0: Off, 1: On). The following table shows the bit-to-alarm association.

Bit-to-trap association map

Table 19

Alarm	Bit	Alarm	Bit
Up converter Osc. Unlock	0	Signal 10 MHz Lock	16
PS Voltage out range	1	Signal 120 MHz Lock	17
PS Current out of range	2	Signal 960 MHz Lock	18
Absolute Power Limiter	3	Input Not Valid Alarm	19
Up converter communication error	4	Late MIP Alarm	20
Temperature High Alarm	5	Network Delay Alarm	21
Temperature Level-3dB	6	Not Used	22
Temperature High Warning	7	File System Error	23
Forward Power High	8	Bad File in File system	24
Forward Power Low Warning	9	1PPS Lock	25
Forward Power Low Alarm	10	PPS Phase	26
Reflex Power High	11	System Delay	27
Fan Speed	12	DVB-T No MIP	28
Input Not Present Alarm	13	No Input	29
GPS Lock	14	FPGA Boot alarm	30
GPS Communication Error	15	Warm Up	31

E.g. A trap carrying the decimal value 805,306,368, corresponding to a binary value of 0011 0000 0000 0000 0000 0000 0000 0000, means that DVB-T No MIP (bit 28) and No Input (bit 29) alarms rose.

The Community shown in trap messages can be set from Java interface in the *Community* box within the Network window (refer to [Network](#) paragraph).

box within the Network window (refer to [Network](#) paragraph).

Appendix A. Seamless input switching

The Ark1-T device provides the functionality of seamless input auto-switching. This switching occurs between primary and secondary input selected, under the following restrictions:

- The device is working in SFN mode;
- The frequency reference selected is external or GPS;
- The two inputs are both ASI, and contain the identical stream.

Under these conditions, when primary input becomes not locked, the device automatically switches to the secondary input. No errors in synchronism bytes or in continuity counters can be observed in output transport stream. If primary input became locked again, the device would automatically switch to the primary input, with no errors in synchronism or in continuity counter.

At the status of the art this functionality is implemented only for ASI inputs, so in Java or SNMP interface only ASI inputs can be selected as secondary input. The SFN mode with external frequency reference is required in order to allow the device to achieve the synchronism.

synchronism.

Appendix B. Standalone/Driver working modes

Two different working modes are provided:

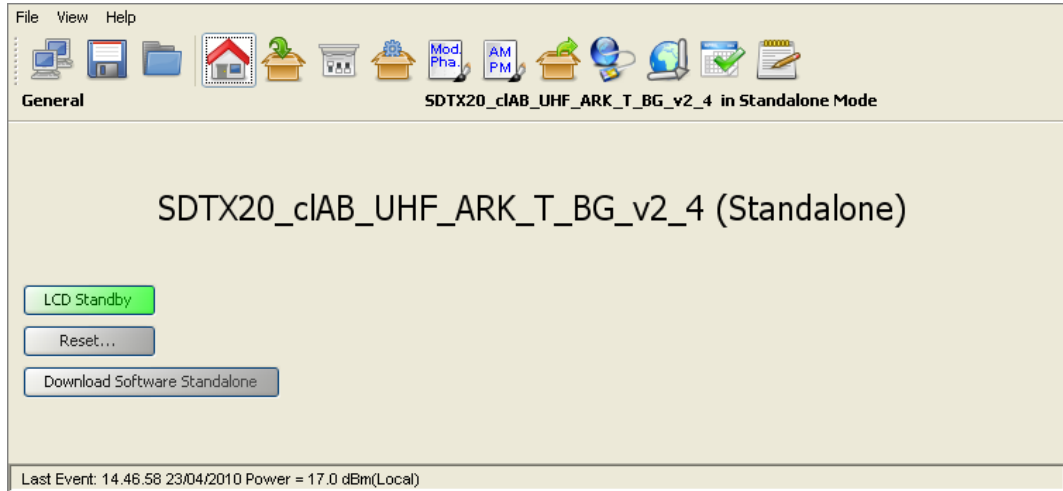
- **Stand-alone:** the device works in stand-alone mode. The system configuration can be totally set through user interfaces. Pre-correction curves are automatically selected according to channel and power range.
- **Driver:** the device works in a driven system. The system configuration cannot be totally set through user interfaces. Some settings are disabled on the user interfaces in order to be driven by serial interface commands. Pre-correction curves are not automatically selected according to channel and power range, but the selection is manually performed through serial interface commands.

The following table lists the commands, specific to each system interface, which must be enabled or disabled while working in Driver mode.

[Note: Diver mode is a specific working mode available and used only in N+1 configuration systems.](#)

Appendix C. Installer Definitions feature

The various Installer Definitions allows to support some different transmission standard definition, different working mode, power supply and power output in the first page of java interface are showed name and version of installer definition



Following table explain the feature of each Installer Definitions

Appendix D. Transport-level Protocols

ARK 1 device allows connections over different ports and using different transport protocols over Gigabit Ethernet depending on functions and operations.

In the following table used ports and protocols are listed to help users understand what software functions allow multiple connections and which port must be enabled.

E.g. pre-correction curves editing and files updating operations open and keep busy the connection to port 5000 till the connection releasing. The connection to this port precludes the possibility of multiple connections and of programming the device.

Table 20. Transport-level Protocols

Port	Protocol	Application	Multiple connections
10001	TCP	Management	Yes
5000	TCP	Updating	Not
	TCP	Pre-correction curves	Not
161	UDP	SNMP	Yes
162	UDP	SNMP Trap management	Yes

Appendix E. Application Note

Screenshots of this application note are used as an example and shown file names are not related to ARK1-T device.

E.1 How to update by installer

1. Launch the Java installer.

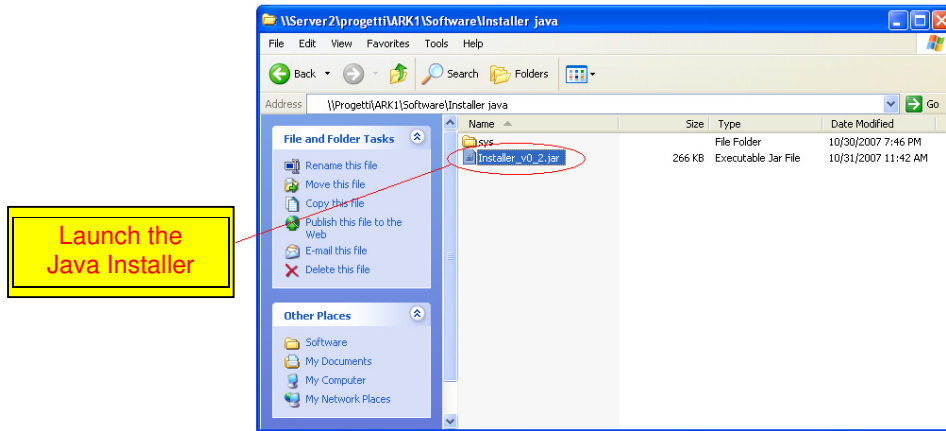
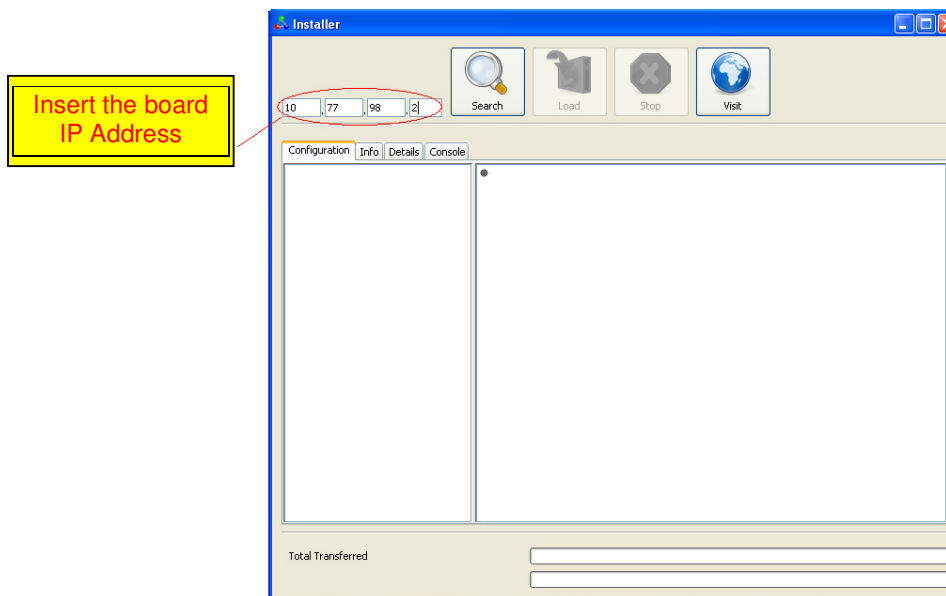


Figure 31. Java Installer

2. Insert the board IP address into the numeric field.

Figure 32. Java Installer - IP Address insertion



3. Click on the "Search" button.

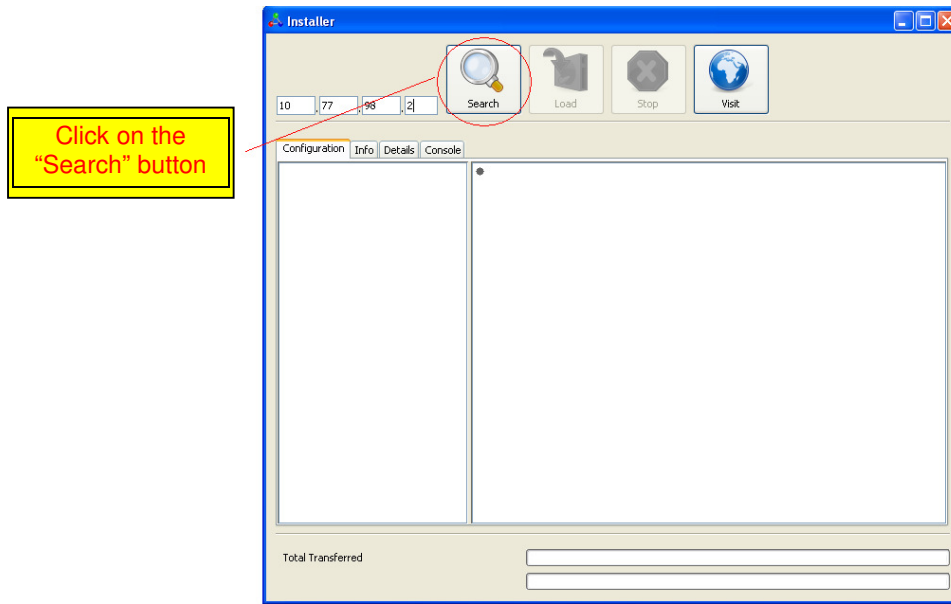


Figure 33. Java Installer - Search button

4. Select the device version you want to load.

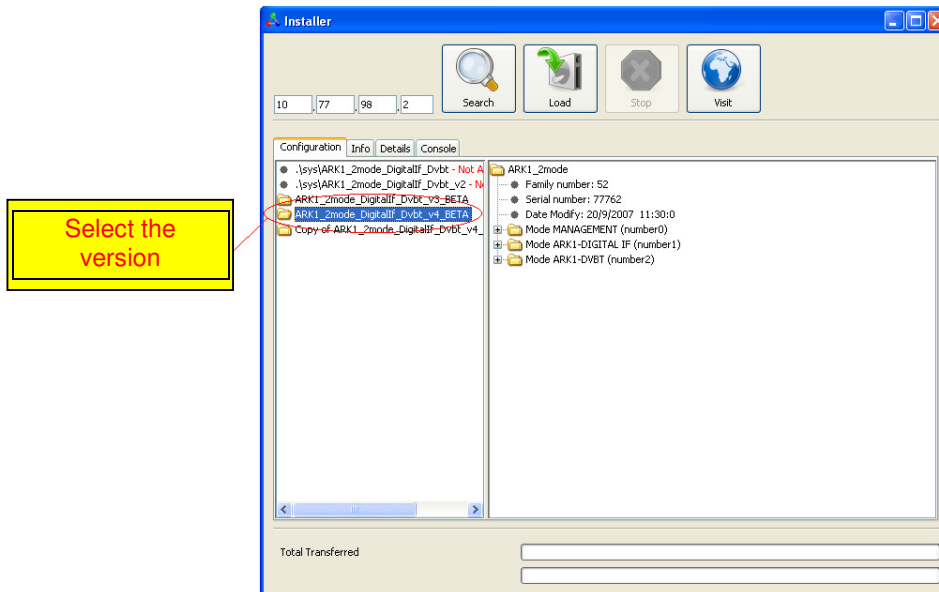


Figure 34. Java Installer - Device Version Selection

5. Click on the "Load" button.

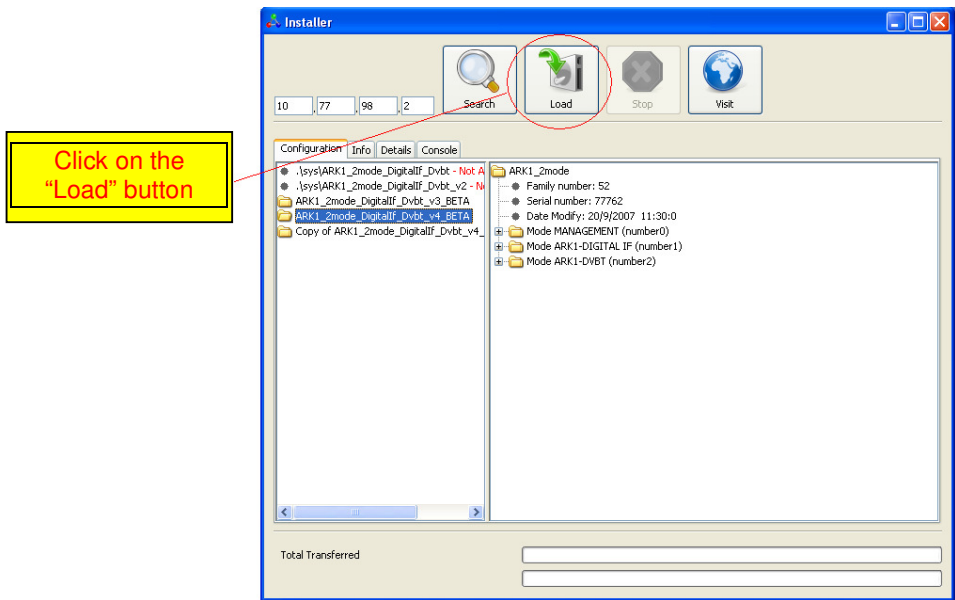
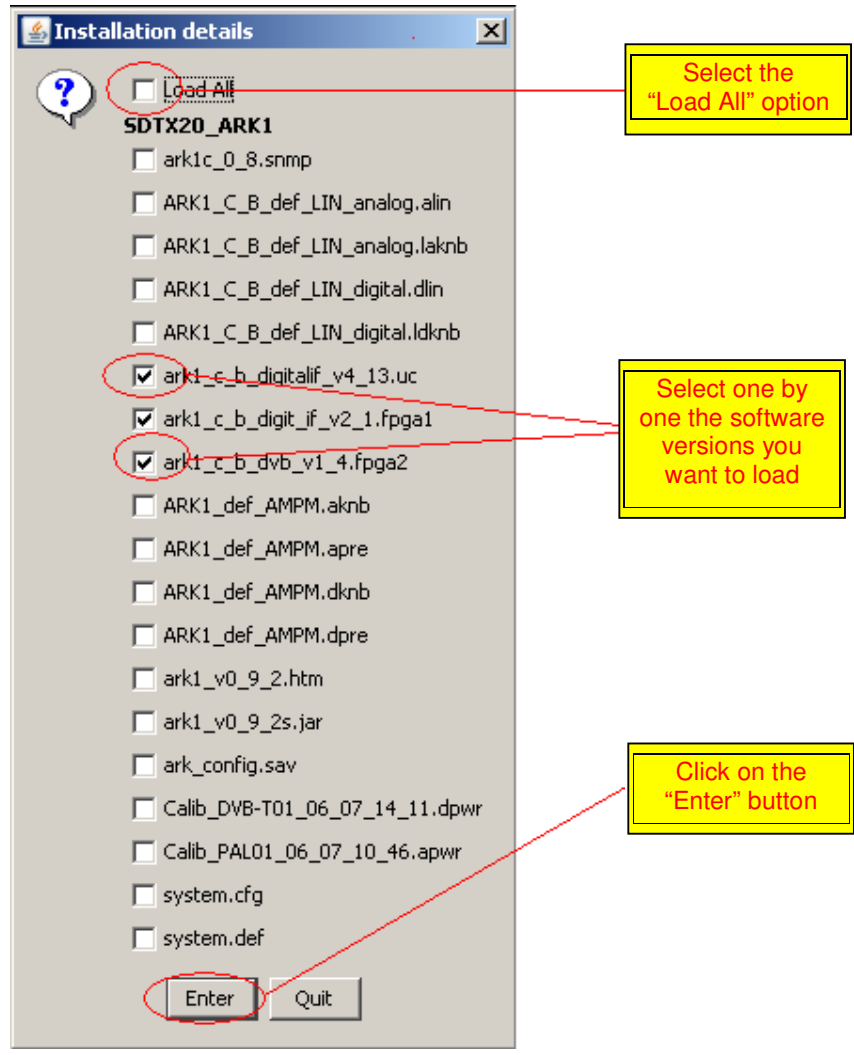


Figure 35. Java Installer - Load button

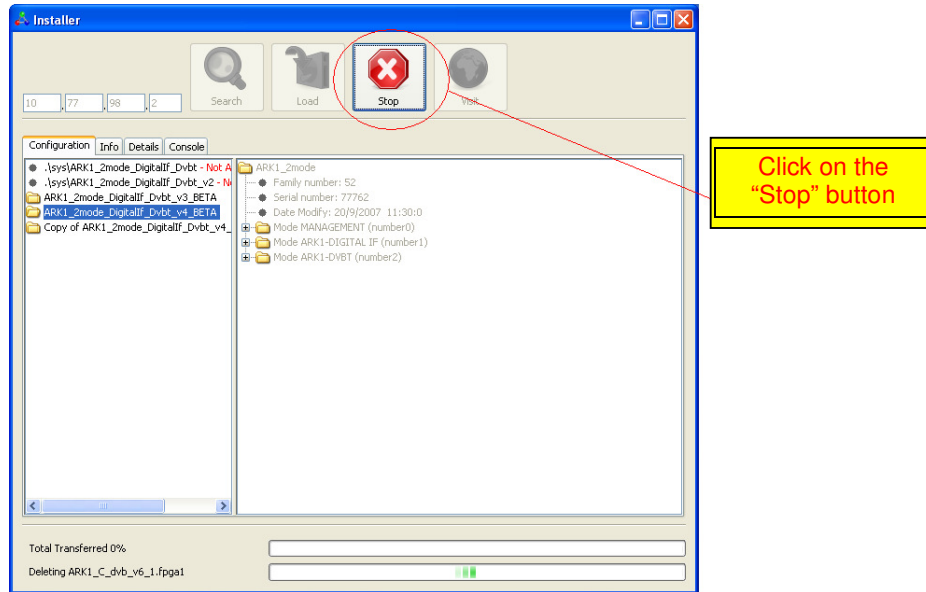
6. If you want to update only some software versions, click on the check boxes corresponding to the software version you want to load, otherwise click on the check box corresponding to the Load All option. Click on the "Enter" button to start the loading.

Figure 36. Java Installer - Software versions selection



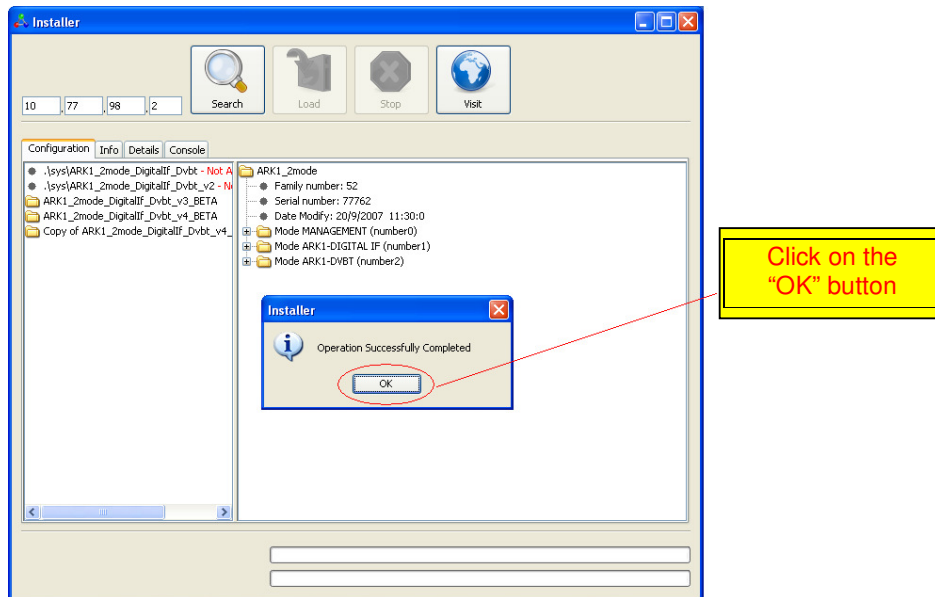
- Once started the loading, the "Stop" button lights up. Click on this button to end the programming.

Figure 37. Java Installer - Stop button



- When the loading is complete, the pop-up window "Operation Successfully Completed" appears. Click on the "OK" button.

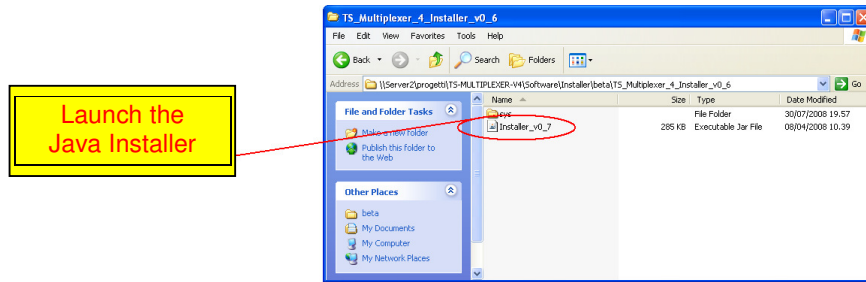
Figure 38. Java Installer - Operation Successfully Completed



E.2 How to backup by installer

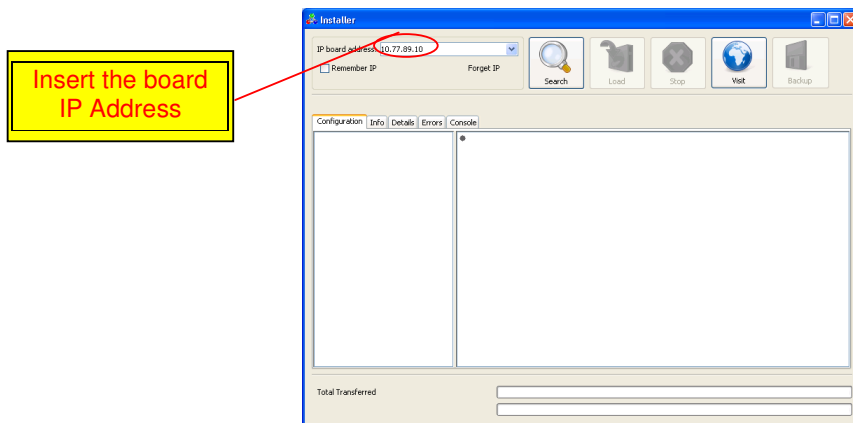
1. Launch the Java installer.

Figure 39. Java Installer



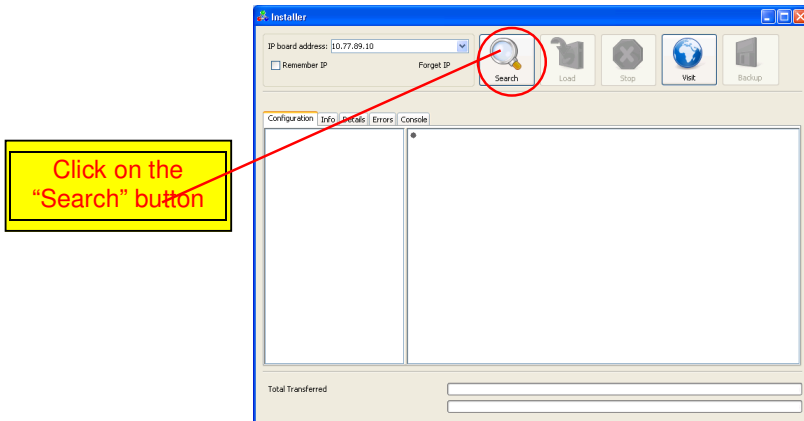
2. Insert the board IP address into the numeric field.

Figure 40. Java Installer - IP Address insertion



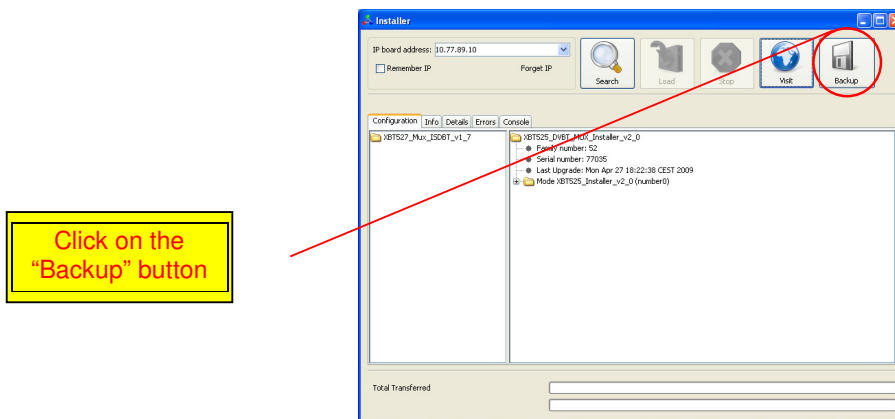
1. Click on the "Search" button.

Figure 41. Java Installer - Search button



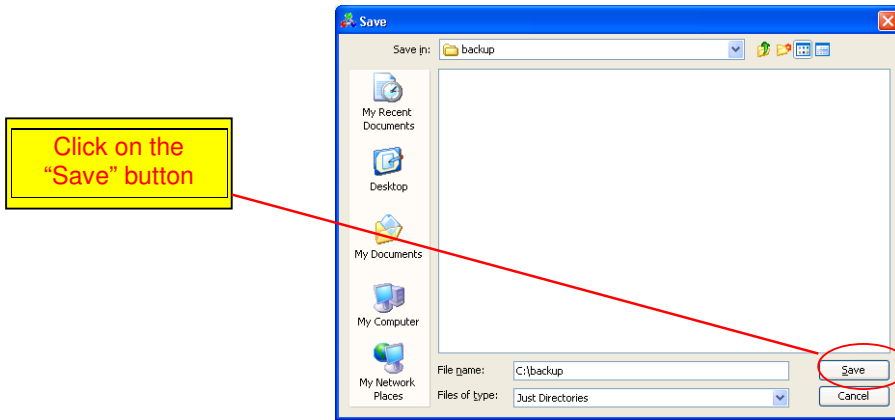
2. Click on the "Backup" button.

Figure 42. Java Installer – Backup button



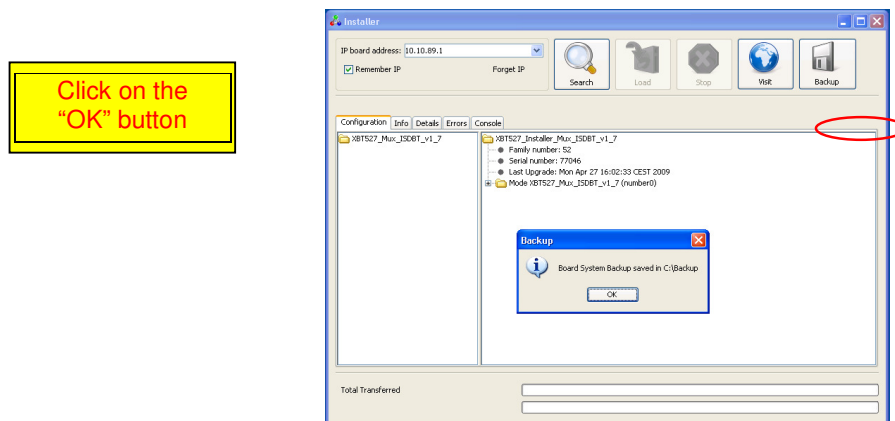
3. Select an existing destination folder and click on the “Save” button.

Figure 43. Java Installer – Save button



4. When the backup is complete, the pop-up window “Board System Backup saved in Destination Folder” appears. Click on the “OK” button.

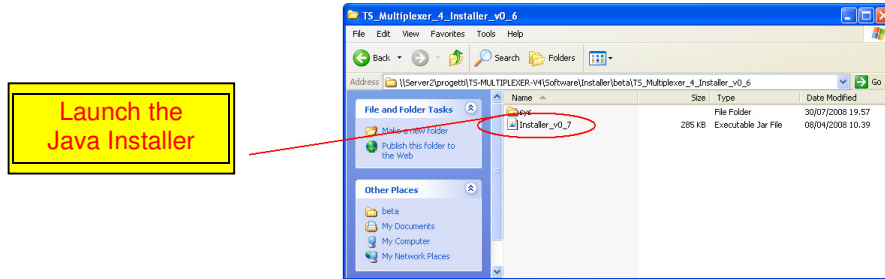
Figure 44. Java Installer - Operation Successfully Completed



E.3 How to open the Java User Interface by installer

1. Launch the Java installer.

Figure 45. Java Installer



2. Insert the board IP address into the numeric field.

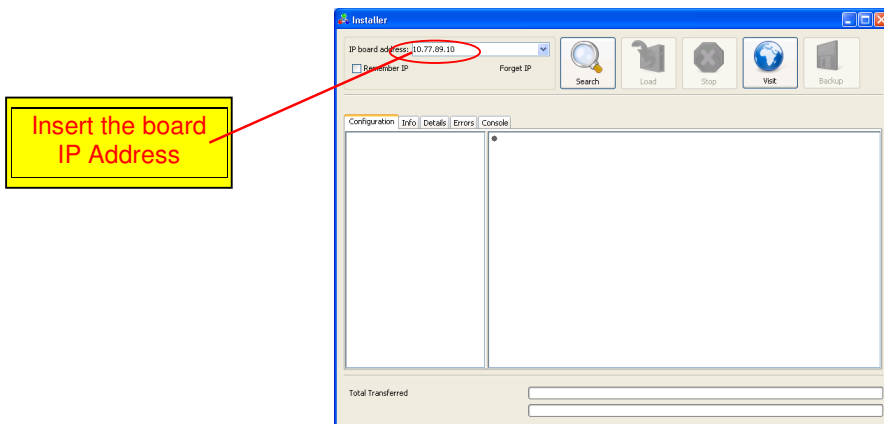
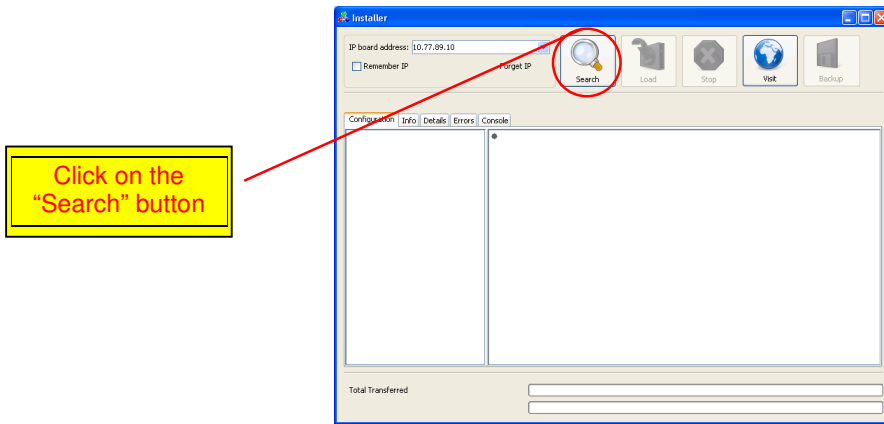


Figure 46. Java Installer - IP Address insertion

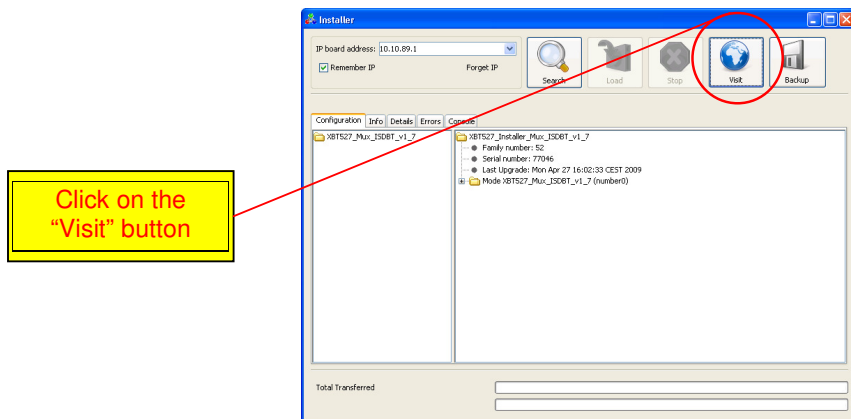
3. Click on the "Search" button.

Figure 47. Java Installer - Search button



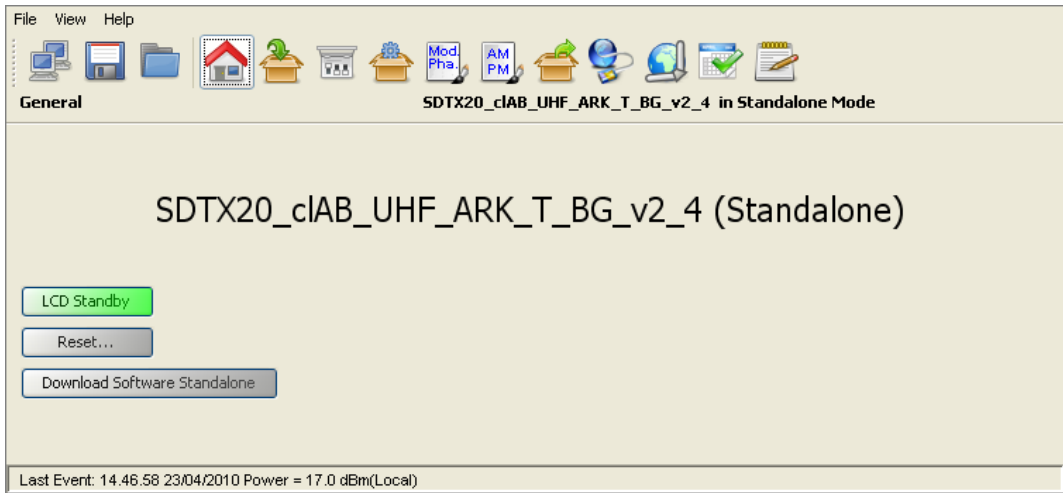
4. Click on the "Visit" button.

Figure 48. Java Installer – Visit button



- 5. The Java User Interface will open automatically.

Figure 49. Java User Interface – General window



Appendix F. Java Virtual Machine

The Java interface requires a host computer connected via Ethernet to the board with the proper Java Machine version installed.

F.1 Ethernet connection

The host computer has to be connected via Ethernet to the board.

Direct or crossed UTP **category 6 cable is recommended.**

NOTE: for best performances, a fast connection (i.e. gigabit Ethernet) is required. After careful testing it was found that a slow connection makes using the AM/PM tool difficult.

F.1.1 Configuration

In order to connect to the board through a LAN, all the devices have to be on the same network. The default IP address settings of the X-port are:

- IP address: 10.77.xx.xx , where xx is the host address unique for each board.
- Subnet mask: 255.255.0.0 .

Remember to change these settings if they are not compatible with the LAN where the computer and the board are connected.

IP address and network parameters can be changed only using the local interface. Please refer to chapter 6 for the network setting commands.

F.2 Java(TM) Platform

F.2.1 Download

The Java Interface works with any Sun Java Virtual Machine after the 1.4.1 version.

If the computer has no Java Virtual Machine installed, the recommended 1.5.0 version can be downloaded from the Sun Server through this link:

<http://www.java.com/>.

F.2.2 Java Control Panel

Java caching must be disabled; to do that follow the following steps:

1. Open the PC general Control Panel and enter in the Java Control Panel
2. The following window will suddenly appear.

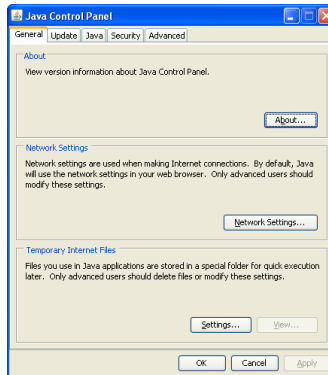
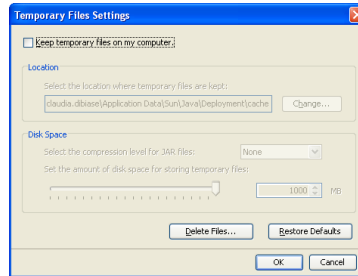


Figure 50. Java Control Panel

3. Select "Settings..." in the "Temporary Internet Files" section of the "General" tab.

4. Deselect the check box of the “Keep temporary files on my computer” (disable cache).

Figure 51. Temporary Files Settings



5. Push “OK” button and close the window.

F.3 Supported Web Browsers

The Java GUI is designed to support every Web Browser that uses Sun Java Virtual Machine from 1.4.1 and newer.

Here’s a list of Web Browsers where Java GUI has been tested and troubleshot:

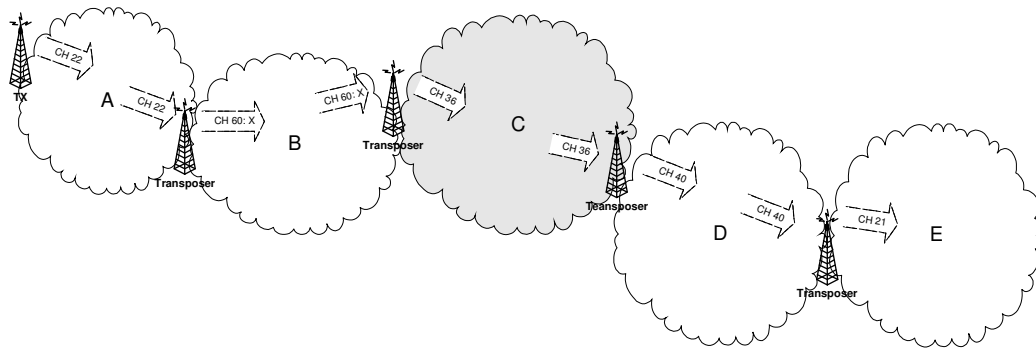
- Microsoft Internet Explorer, version 5 and newer.
- Mozilla Firefox, version 1.5 and newer.

3.18 AUTOMATIC FREQUENCY CONTROL

The Television Broadcasting through countrywide transposers networks requires special care to avoid too high frequency drift errors.

The Automatic Frequency Control is highly recommended for transposers chains. The following figure illustrates an example of when the AFC might be used to stop the overwhelming increase of such errors.

Figure 52. TROVA NOME



The Automatic Frequency Control in ARK1 devices is software defined.

Most of the frequency drift errors could be avoided by means of a stable frequency reference, such as GPS, but since it is not always available, the ARK1 AFC makes it possible to compensate frequency jitters owing to each previous transposer.

Frequency compensation of analog input signals is performed through a proprietary algorithm that, filtering the input video carrier, allows the control loop to extract frequency jitter information from the input RF phase deviation.

The frequency error adjustment slows down within 3 Hz; it takes about 2 minutes to fulfil the correction.

- Frequency resolution: $\pm 1\text{Hz}$.

Maximum frequency compensation: $\pm 4,000,000\text{ Hz}$.

Frequency compensation of digital input signals is carried out through frequency jitter information coming from STV0362 receiving the HP Transport Stream.

- Frequency resolution: $\pm 1\text{kHz}$.
- Maximum frequency compensation: $\pm 83\text{kHz}$.

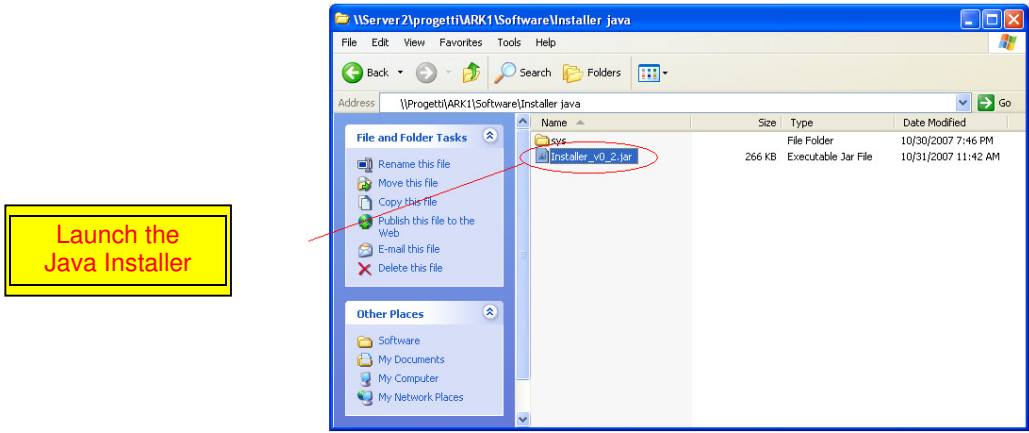
Due to the Symbol Rate error compensation of the frequency measure algorithm of STV, digital AFC can work properly only with 0ppm Symbol Rate errors in the input signal.

3.19 APPLICATION NOTE

3.19.1 How to update

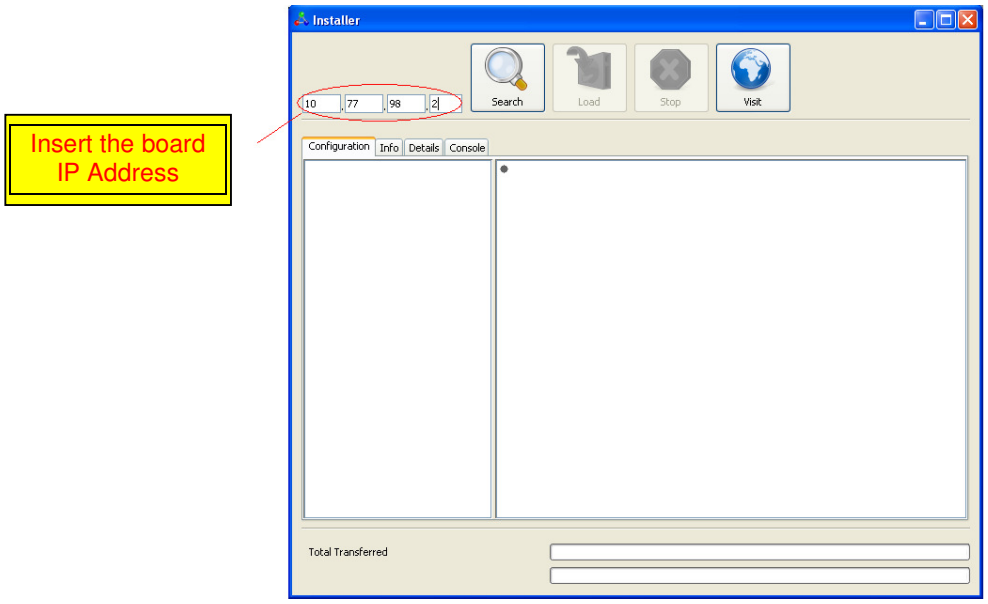
9. Launch the Java installer.

Figure 53. Java Installer



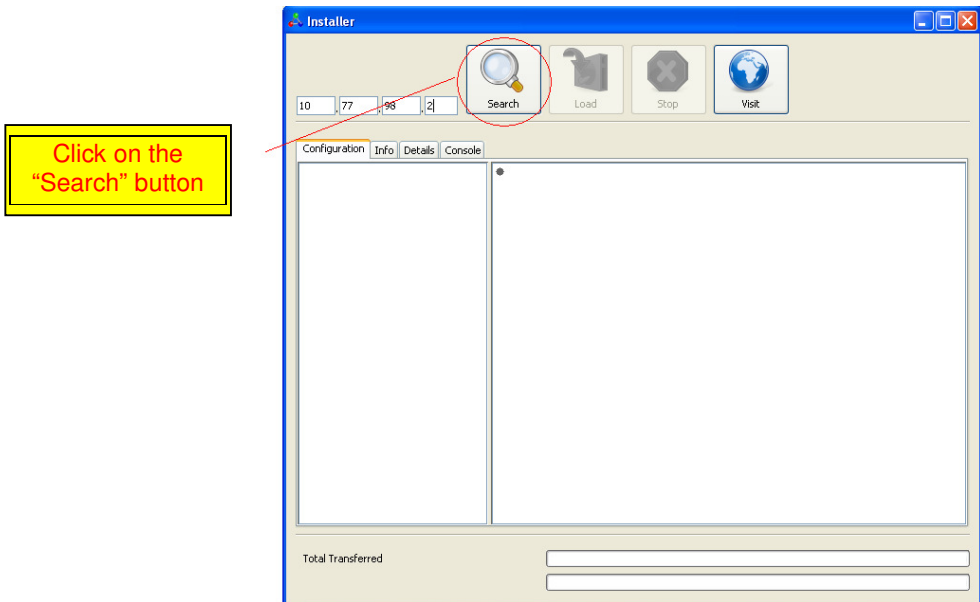
10. Insert the board IP address into the numeric field.

Figure 54. Java Installer - IP Address insertion



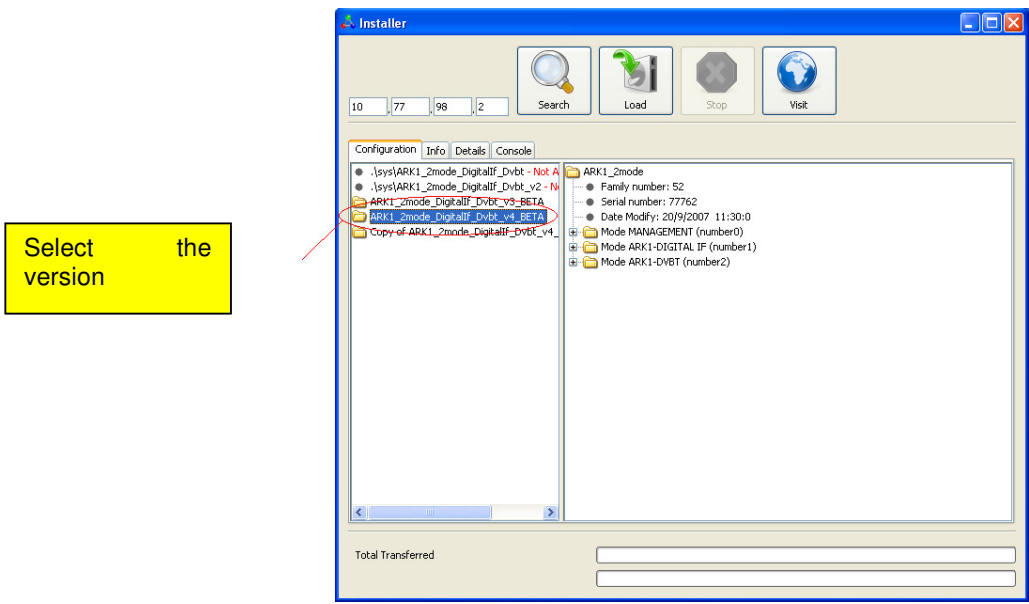
11. Click on the "Search" button.

Figure 55. Java Installer - Search button



12. Select the device version you want to load.

Figure 56. Java Installer - Device Version Selection



13. Click on the “Load” button.

Click on the
“Load” button

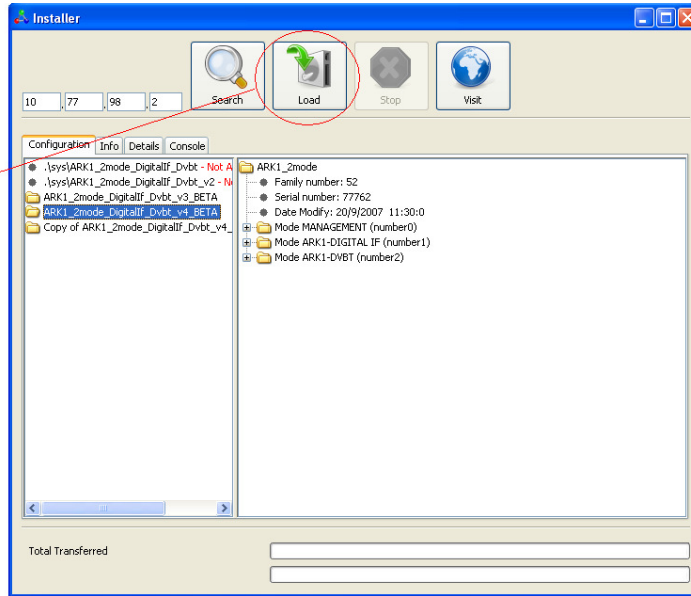
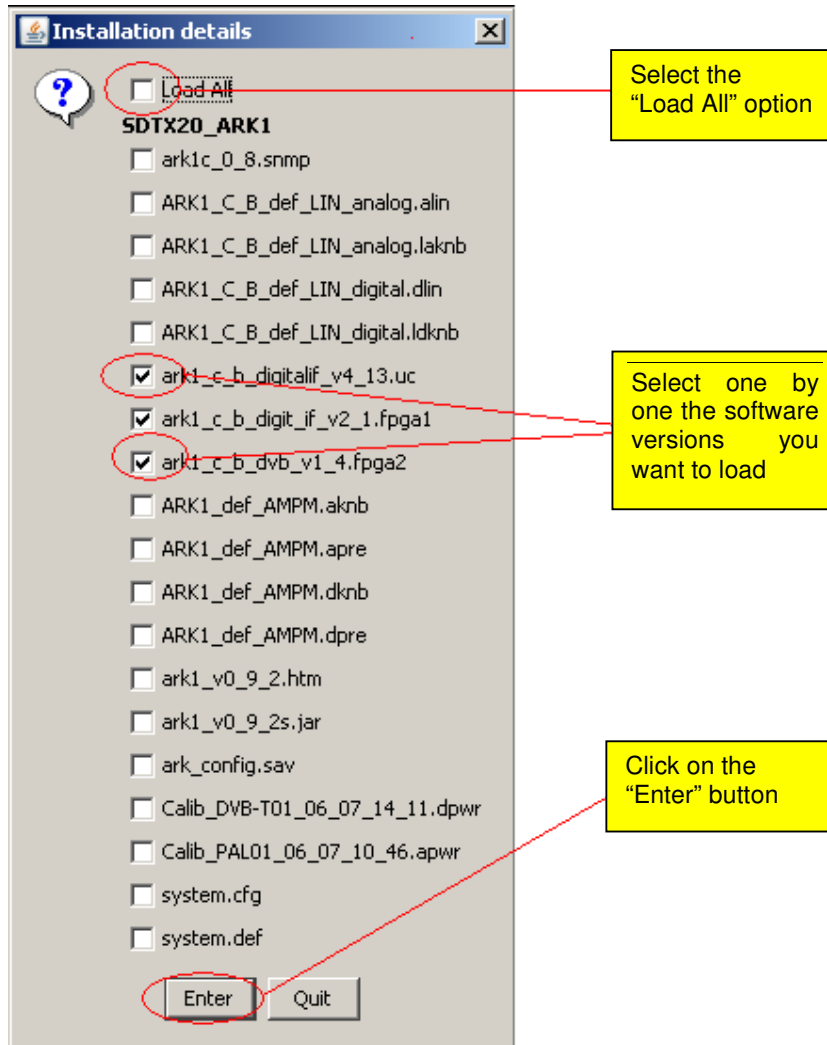


Figure 57. Java Installer - Load button

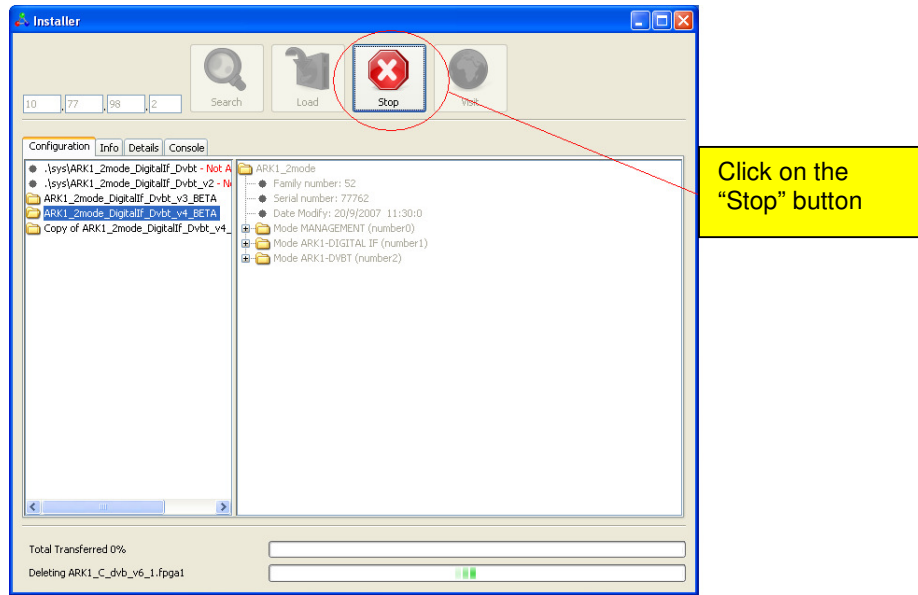
14. If you want to update only some software versions, click on the check boxes corresponding to the software version you want to load, otherwise click on the check box corresponding to the Load All option. Click on the "Enter" button to start the loading.

Figure 58. Java Installer - Software versions selection



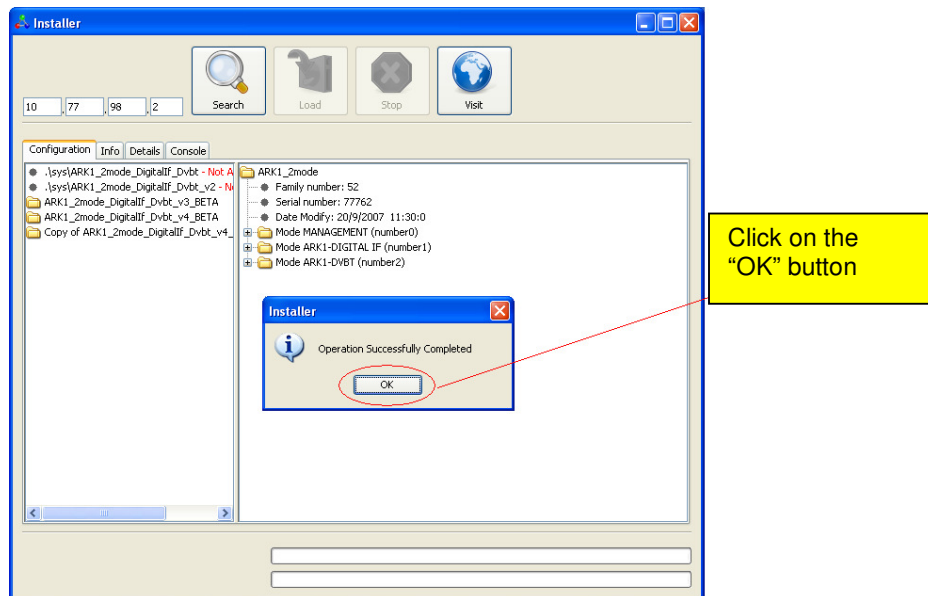
15. Once started the loading, the “Stop” button lights up. Click on this button to end the programming.

Figure 59. Java Installer - Stop button



16. When the loading is complete, the pop-up window “Operation Successfully Completed” appears. Click on the “OK” button.

Figure 60. Java Installer - Operation Successfully Completed



3.20 Java Virtual Machine

The Java interface requires a host computer connected via Ethernet to the board with the proper Java Machine version installed.

3.21 ETHERNET CONNECTION

The host computer has to be connected via Ethernet to the board.
Direct or crossed UTP **category 6 cable is recommended.**

3.21.1 Configuration

In order to connect to the board through a LAN, all the devices have to be on the same network. The default IP address settings of the X-port are:

- IP address: 10.77.xx.xx , where xx is the host address unique for each board.
- Subnet mask: 255.255.0.0 .

Remember to change these settings if they are not compatible with the LAN where the computer and the board are connected.

IP address and network parameters can be changed only using the local interface. Please refer to chapter 6 for the network setting commands.

3.21.2 Java(TM) Platform

3.21.3 Download

The Java Interface works with any Sun Java Virtual Machine after the 1.4.1 version.

If the computer has no Java Virtual Machine installed, the recommended 1.5.0 version can be downloaded from the Sun Server through this link:

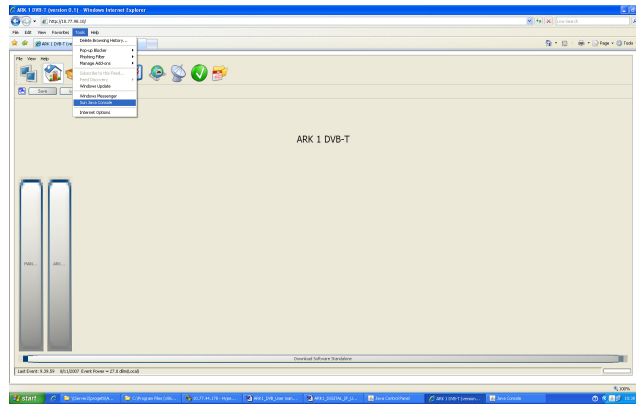
<http://www.java.com/>.

3.21.4 Java Control Panel

Java caching must be disabled; to do that follow the following steps:

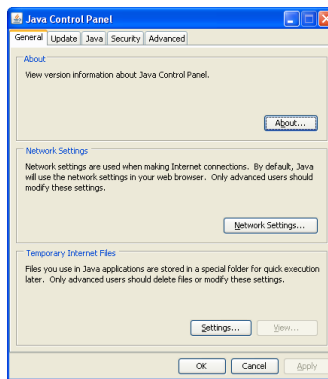
1. Open Internet Explorer, click on Tool button and select the Sun Java Console option.

Figure 61. Sun Java Console



2. Perform a right button mouse click on the Java(TM) Platform icon sited on the right corner of the Taskbar and select “Open Control Panel”. The following window will suddenly appear.

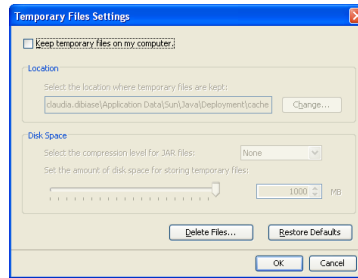
Figure 62. Java Control Panel



3. Select “Settings...” in the “Temporary Internet Files” section of the “General” tab.

4. Deselect the check box of the “Keep temporary files on my computer” (disable cache).

Figure 63. Temporary Files Settings



5. Push “OK” button and close the window.

3.22 SUPPORTED WEB BROWSERS

The Java GUI is designed to support every Web Browser that uses Sun Java Virtual Machine from 1.4.1 and newer.

Here’s a list of Web Browsers where Java GUI has been tested and troubleshot:

- Microsoft Internet Explorer, version 5 and newer.
- Mozilla Firefox, version 1.5 and newer.

3.23 SECURITY measures and systems used with the transmitter to make sure that only legal copies of the software can be loaded on the transmitter

The equipment can operate only with legal software released by SCREEN SERVICE.

Infact the firmware has been designed following certain software nomenclature and codes.

Other software, illegally loaded, will produce the BOOT ERROR at the switch on and then the eqipment stops.

It is worth to remind that the upgrading procedure foresees the use of a DEVICE INSTALLER which uses PROPRIETARY PROTOCOL as well.