

IRT

I R T Electronics Pty Ltd A.B.N. 35 000 832 575
26 Hotham Parade, ARTARMON N.S.W. 2064 AUSTRALIA
National: Phone: (02) 9439 3744 Fax: (02) 9439 7439
International: +61 2 9439 3744 +61 2 9439 7439
Email: sales@irtelectronics.com
Web: www.irtelectronics.com

IRT Eurocard

Type DAI-4200

3G/HD/SD-SDIDigital Audio Inserter

Designed and manufactured in Australia

**IRT can be found on the Internet at:
<http://www.irtelectronics.com>**

IRT Eurocard
Type DAI-4200
3G/HD/SD-SDI Digital Audio Inserter
Instruction Book

Table of Contents

Section	Page
Revision History	2
Operational Safety	3
General Description	4
Technical Specifications	5
Configuration	6
DIP Switch Settings	6
Audio Test Generator	6
Video Generator	6
Link Settings	6
Location of DIP Switch and Links	7
Installation	8
Front and rear layouts	9
Operation	10
Top Layer Menu Structure	10
STATUS Menu Structure	11
Video Status	12
Embedded Audio Status	12
AES Audio Status	13
Enter To Go Back	13
CONFIG Menu Structure	14
Embed Mode	15
AES Group configuration	16
Enter To Go Back	16
Audio Test Generator	17
Video Generator	17
SNMP – What Is It?	18
DAI-4200 SNMP Functions	20
Maintenance & Storage	21
Warranty & Service	21
Equipment return	21

This instruction book applies to units later than S/N: 0910001.

Operational Safety:

WARNING

Operation of electronic equipment involves the use of voltages and currents that may be dangerous to human life. Note that under certain conditions dangerous potentials may exist in some circuits when power controls are in the **OFF** position. Maintenance personnel should observe all safety regulations.

Do not make any adjustments inside equipment with power **ON** unless proper precautions are observed. All internal adjustments should only be made by suitably qualified personnel. All operational adjustments are available externally without the need for removing covers or use of extender cards.

IRT Eurocard

Type DAI-4200

3G/HD/SD-SDI Digital Audio Inserter

General Description

The DAI-4200 is a high performance audio embedder for either 270 Mb/s SD-SDI, 1.485 Gb/s HD-SDI or 2.97 Gb/s 3G-SDI video signals.

Each DAI-4200 is capable of inserting up to two audio groups into an existing SDI video stream. An audio group consists of two AES signals, thus four AES signals are capable of being inserted over two audio groups. AES 1&2 constitute one audio group, AES 3&4 constitute the second audio group.

Group position selection is made by the front panel local controls, or remotely via SNMP. Existing embedded data packets may be either all removed or selectively replaced.

The DAI-4200 supports AES synchronous or asynchronous¹ 48 kHz 24-bit audio data packets.

An audio presence indicator is provided for each input.

DIP switch settings allow optional colour bars or colour black to SDI output on loss of SDI input.

Two DAI-4200's can be cascaded for insertion of audio into all four groups if required.

Simple Network Management Protocol (SNMP) monitoring and control is possible when mounted in an IRT frame fitted with SNMP capability.

The DAI-4200 is fabricated in IRT's standard Eurocard format and may be housed in a variety of IRT Eurocard frames alongside other standard modules.

Standard features:

- **270 Mb/s SD-SDI, 1.485 Gb/s HD-SDI or 2.97 Gb/s 3G-SDI input and output**
- **Inserts up to 4 AES signals into 2 groups**
- **75 Ω unbalanced AES inputs**
- **AES resampling (or selectable non resampling mode on HD & 3G only)**
- **24 bit audio supported**
- **Z, C, U data preserved**
- **Ability to replace existing embedded audio**
- **Indicators for presence of input (SDI) & audio (AES)**
- **Cascadable - SDI output for connection to additional units**
- **Front panel Status and Configuration controls**
- **Simple Network Management Protocol (SNMP) capable**

¹ Asynchronous mode possible for HD-SDI & 3G-SDI only.

Technical Specifications

IRT Eurocard module Type DAI-4200

SDI input:

Number	1 (BNC).
Impedance	75 Ω terminated.
Equalisation	Automatic, >100 metres at 1.485 Gb/s & 2.97 Gb/s, > 250 metres at 270 Mb/s for Belden 8281 or equivalent cable.
Format	270 Mbit/s (SD-SDI) video with or without embedded audio serial data to SMPTE 259M; or 1.485 Gbit/s (HD-SDI) video with or without embedded audio serial data to SMPTE 292M; or 2.97 Gb/s (3G-SDI) video with or without embedded audio serial data to SMPTE 424M.

SDI output:

Number	1 (BNC).
Type	75 Ω sourced.
Format	Regenerated and re-clocked, as per input type.

AES/EBU inputs:

Number	4 x 48 kHz synchronous / asynchronous, 24-bit audio data packets.
Impedance	75 Ω unbalanced.
1 st Audio group	AES 1 & AES 2.
2 nd Audio group	AES 3 & AES 4.

Front Panel Indicators:

INPUT	SDI input present (Green).
AES (1 – 4)	AES audio present (Green).
Control Switch Indicator Blue	SDI input type – 3G.
Control Switch Indicator Green	SDI input type – HD.
Control Switch Indicator Orange	SDI input type – SD.

Front Panel Controls:

Sample Rate Converter (SRC)	ON/OFF (AES should always be resampled (ON) with SD-SDI, unless it has already been externally synced).
Normal/Replace/R1 Group/No Embed	Delete all audio groups / replace both selected audio groups / Replace 1 Group (AES 1&2) only / Pass SDI signal as is (no embedding).
SYNC / ASYNC_HD Group select	Synchronous / Asynchronous (HD & 3G) audio insertion. AES 1&2, AES 3&4.

Other:

Power requirements	28 Vac CT (14-0-14) or \pm 16 Vdc.
Power consumption	<6 VA.
Temperature range	0 - 50° C ambient.
Mechanical	Suitable for mounting in IRT 19" rack chassis with input output and power connections on the rear panel.
Finish:	Grey background, black lettering & red IRT logo.
Front panel	
Rear assembly	Detachable silk-screened PCB with direct mount connectors to Eurocard and external signals.
Dimensions	30 mm x 3 U x 220 mm IRT Eurocard.
Accessories supplied with module	Rear connector assembly.
Related Modules	DAX-4200 digital audio extractor.

Due to our policy of continuing development, these specifications are subject to change without notice.

Configuration

DIP Switch Settings:

- SW1-1 ON Default DAI-4200 setting. Do not change.
 SW1-2 OFF Audio Test Generator OFF (normal position - default).
 ON Audio Test Generator ON.

SW1-3	SW1-4	Operation
OFF	OFF	Video Generator on loss of SDI input disabled.
ON	OFF	SD Video Generator on loss of SDI input enabled.
OFF	ON	HD Video Generator on loss of SDI input enabled.
ON	ON	3G Video Generator on loss of SDI input enabled.

- SW1-5 OFF Colour Bars when Video Generator enabled via SW1-3 and SW1-4 settings.
 ON Colour Black when Video Generator enabled via SW1-3 and SW1-4 settings.
 SW1-6 Not used (normal position OFF - default).
 SW1-7 Not used (normal position OFF - default).
 SW1-8 Not used (normal position OFF - default).

Audio Test Generator:

When SW1-1 is in the ON position, a 1 kHz tone is generated for insertion into the SDI input signal for testing of audio channels within a system. This allows the wiring to be checked for correct connection at the far end.

The 1 kHz tone is sequentially switched between the left and right channels of the four AES channels in order via the front panel menu button as selected by the operator. Audio insertion is as per the CONFIG menu settings as described in the *Operation* section of this manual.

Note that the Audio Test Generator is for testing purposes only and overrides the inputted AES signals. When using the DAI-4200 with external AES signals, leave the SW1-2 in the OFF position.

Video Generator:

To allow an output SDI video signal on loss of SDI input, SW1-3 and SW1-4 enable an SD-SDI, HD-SDI or 3G-SDI signal, either colour bars or colour black as per the SW1-5 setting. This allows the AES inputs to still be embedded within an SDI signal should the AES path be critical.

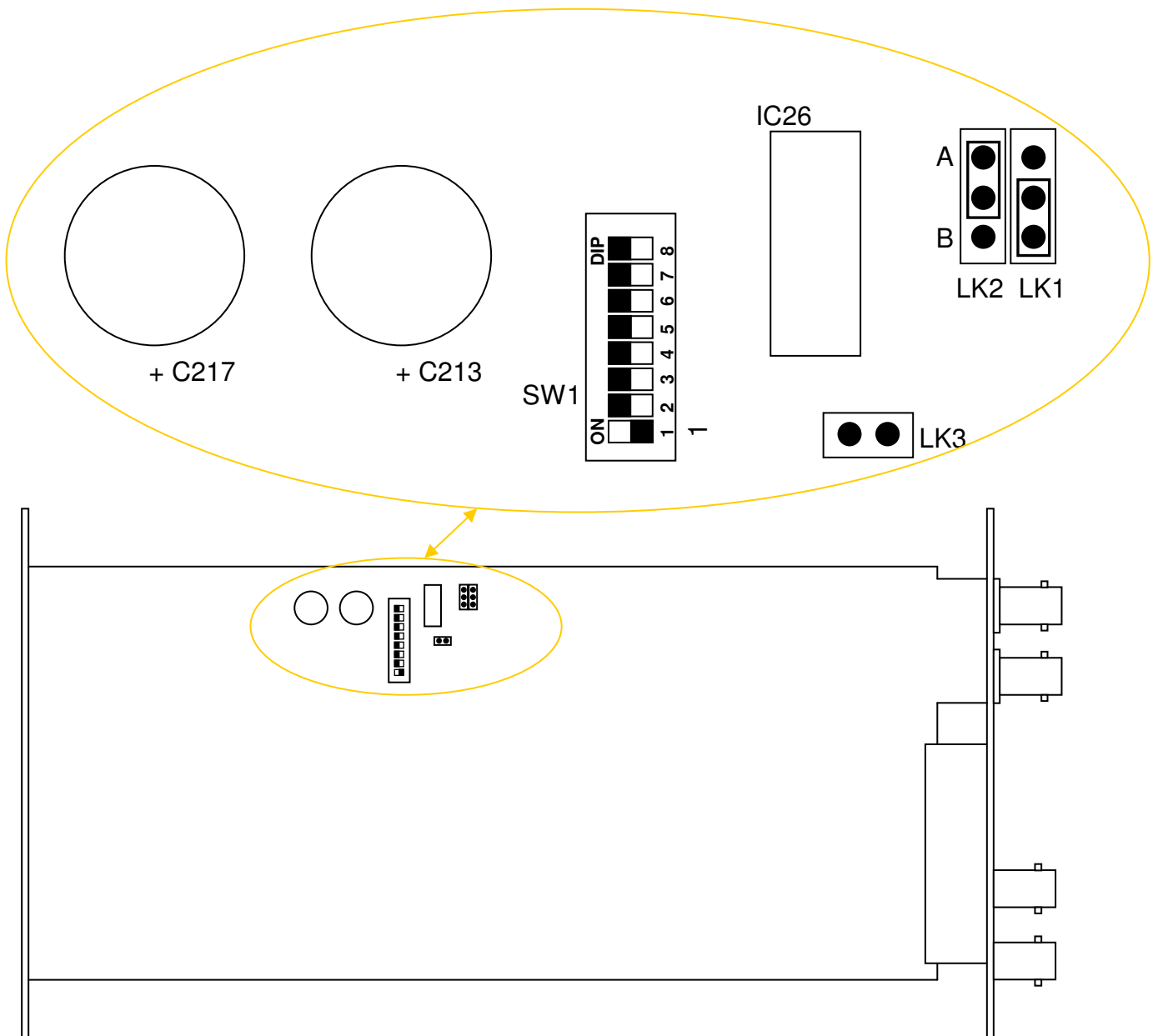
When setting, set to expected SDI input type (SD, HD or 3G) so that signal types match, else downstream equipment may not function correctly.

The colour bars give a visual indication of loss of SDI input. The colour black may be preferential for live broadcast applications. It is also possible to disable the video generator via the SW1-3 and SW1-4 settings for situations where a redundant backup system automatically switches in independent of this card.

Link Settings:

- LK1 B Factory use only. Default position. Do not change.
 LK2 A Factory use only. Default position. Do not change.
 LK3 OPEN Factory use only. Default position. Do not change.

Location of DIP Switch and Links:



Installation

Pre-installation:

Handling:

This equipment may contain or be connected to static sensitive devices and proper static free handling precautions should be observed.

Where individual circuit cards are stored, they should be placed in antistatic bags. Proper antistatic procedures should be followed when inserting or removing cards from these bags.

Power:

AC mains supply: Ensure that operating voltage of unit and local supply voltage match and that correct rating fuse is installed for local supply.

DC supply: Ensure that the correct polarity is observed and that DC supply voltage is maintained within the operating range specified.

Earthing:

The earth path is dependent on the type of frame selected. In every case particular care should be taken to ensure that the frame is connected to earth for safety reasons. See frame manual for details.

Signal earth: For safety reasons a connection is made between signal earth and chassis earth. No attempt should be made to break this connection.

Installation in frame or chassis:

See details in separate manual for selected frame type.

Connections:

SDI Video:

Input:

The SDI input is a single BNC connector terminated in 75 Ohms.

The input equaliser compensates automatically for losses of up to 250 metres for SD-SDI, and up to 100 metres of HD-SDI or 3G-SDI, of high quality 75 Ohm coaxial cable. Performance tests are made using Belden 8281 cable as a reference. Actual results and bit error rates will depend on the quality of the cable and the noise environment as well as the quality of the originating equipment.

Output:

One 75 Ohm impedance SDI output is provided matching the input type with the relevant embedded AES data. This output should only be used with 75 Ohm coaxial cable and must be 75 Ohm terminated at the destination in order to obtain correct levels and performance.

When more than two groups need to be embedded with AES data, this output cascades into the input of a second DAI-4200 inserter card to allow all four groups of an SDI stream to be embedded.

AES Data:

Inputs:

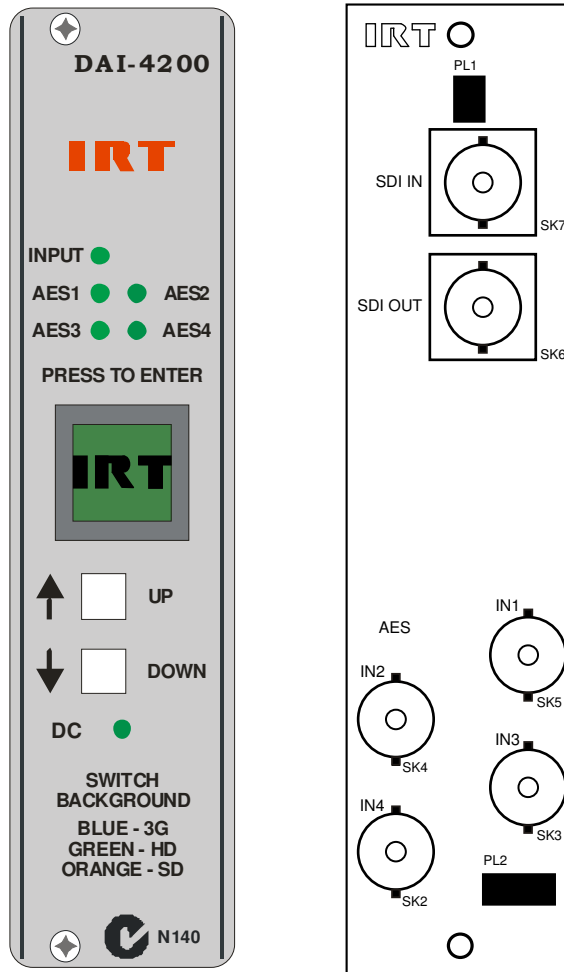
The four AES data inputs, typically AES audio, are single BNC connectors terminated in 75 Ohms.

AES 1&2 form one audio/data grouping, AES 3&4 form the second audio/data grouping. Each audio/data grouping can be inserted into a different one of the four possible audio/data group numbers within an SDI stream. It is not possible to insert both audio/data groupings into the same SDI group number.

When using the replace single group number option in the configuration setting, only audio/data grouping AES 1&2 applies. AES 3&4 are ignored.

Front & rear panel connector diagrams

The following front panel and rear assembly drawings are not to scale and are intended to show connection order and approximate layout only.



Operation

The DAI-4200 will embed up to two groupings of AES audio or data (AES 1&2 and AES 3&4) within two separate SDI group numbers. To embed into all four possible group numbers within an SDI stream two DAI-4200s can be cascaded together.

The SDI input stream can be either 3G-SDI (2.97 Gb/s), HD-SDI (1.485 Gb/s) or SD-SDI (270 Mb/s). The output stream matches that of the input stream with the configured embedded AES options.

The front panel comprises of an INPUT and four AES green LED indicators, and three pushbutton switches - a large square pushbutton switch in the middle of the panel acting as the MENU SCREEN, and two smaller square pushbuttons below marked with UP and DOWN arrows.

The INPUT LED illuminates when an SDI input signal is connected to the SDI IN connector on the rear assembly. Likewise when unbalanced 75 Ohm AES signals are connected to any of the AES inputs on the rear assembly the corresponding front panel AES LED will illuminate.

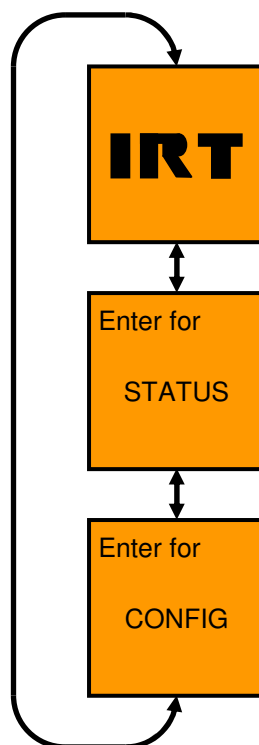
The MENU SCREEN pushbutton will illuminate to indicate the type of SDI input signal detected –
 a blue background for a 3G-SDI signal;
 a green background for an HD-SDI signal; and
 an orange background for an SD-SDI signal.

STATUS of the input SDI signal and CONFIGURATION settings for the AES insertion are performed via the MENU SCREEN pushbutton in conjunction with the two smaller UP / DOWN pushbuttons.

Top Layer Menu Structure:

There are three top layer menus on the MENU SCREEN pushbutton. The top default screen has the display **IRT**. Scrolling down the menus by pressing the DOWN arrow pushbutton comes the STATUS menu followed by the CONFIG menu, then back to the **IRT** menu again.

All the following examples have the background colour corresponding to an SD-SDI input signal.

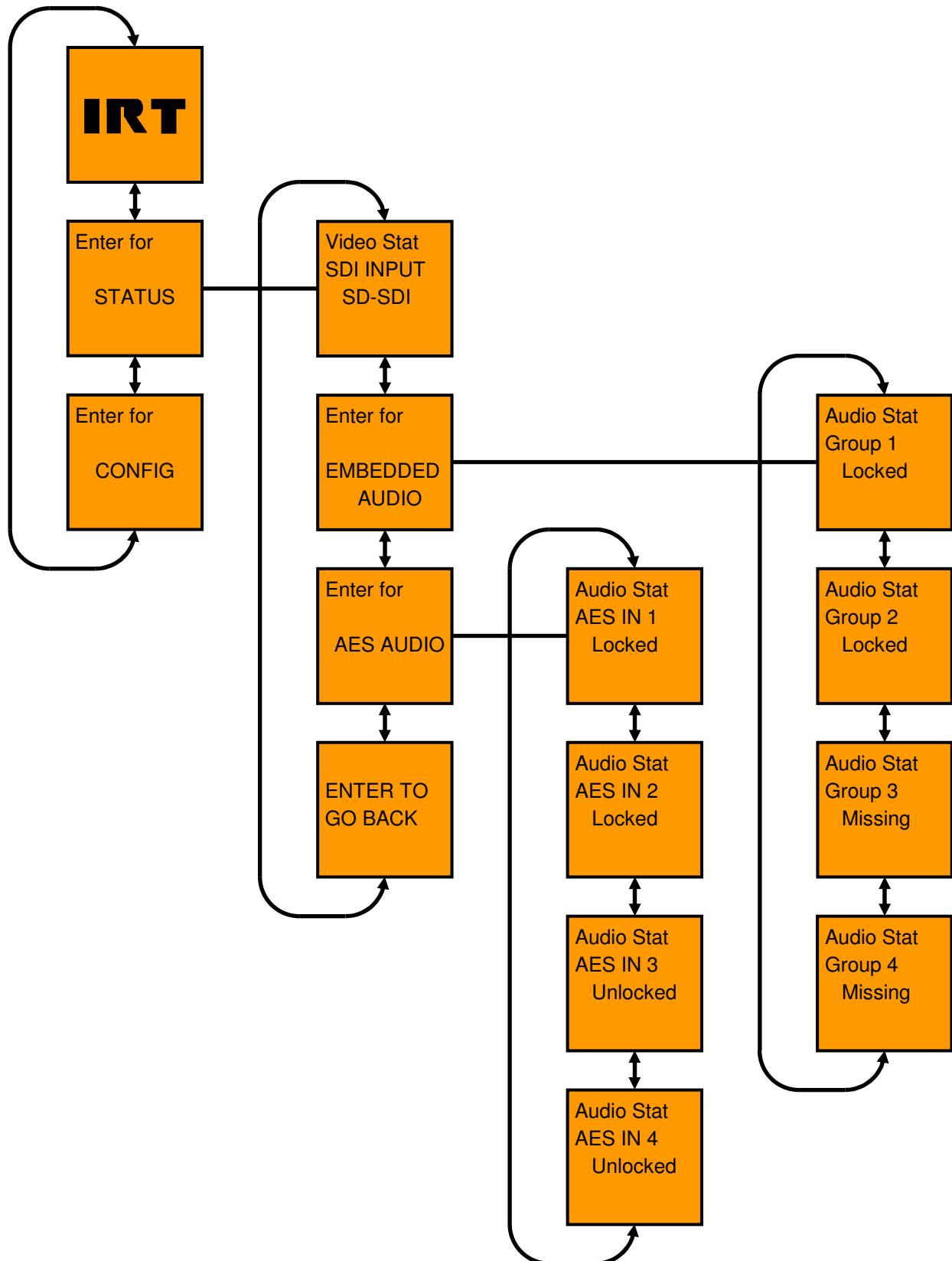


To enter the STATUS or CONFIG menus, push the MENU SCREEN pushbutton when at the corresponding menu screen to open the next sub-menu. Pressing the **IRT** menu does not do anything as there are no sub-menus below this screen. After a period of time, if left in one of the other menu screens, the menu defaults back to the **IRT** screen.

STATUS Menu Structure:

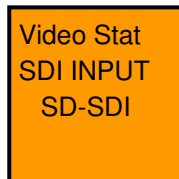
Pressing the STATUS menu option gives status information about the inputted signals such as the type of SDI signal present (3G, HD or SD), whether the four Groups of the SDI signal contain AES data or not, and whether the four AES inputs are present or not. It does not give status information about the configuration settings. The CONFIG menu gives this information when setting.

The following menu structure shows the various status information screens. To scroll between the various sub-menus under the STATUS menu press the UP / DOWN arrow pushbuttons on the front panel.



1. Video Status:

The first menu under the STATUS menu is the Video Status screen.



This screen shows what type of input signal is present:

- 3G-SDI;
- HD-SDI;
- SD-SDI; or
- Unlocked - for no input or invalid inputs (non SDI).

Pressing this switch when in this position switches back to the previous "Enter for STATUS" menu screen.

2. Embedded Audio Status:

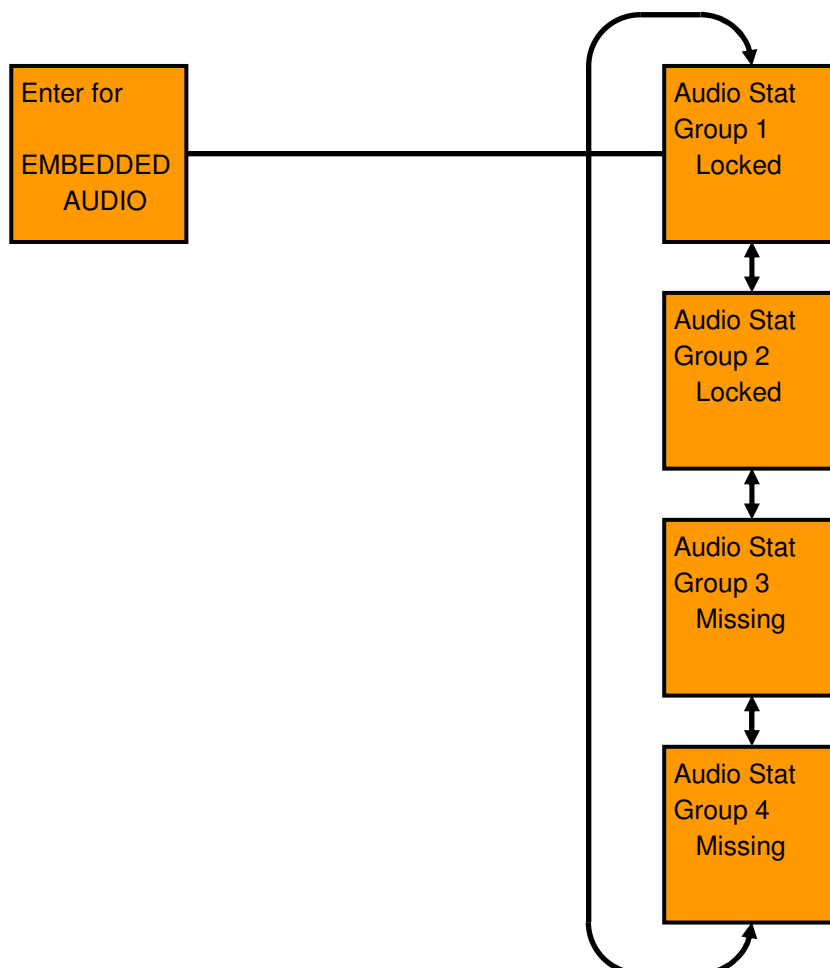
The second menu under the STATUS menu is the EMBEDDED AUDIO status.

Pressing this switch when in this position switches to a sub-menu of Audio Status, which indicate the presence (Locked) or absence (Missing) of AES data within the four individual audio groups of the SDI input stream.

The four audio groups are designated as Group 1, Group 2, Group 3, and Group 4.

To access information about each individual group, press the UP / DOWN arrow pushbuttons on the front panel until the desired group number is shown. In the example below Groups 1 & 2 both contains AES data (Locked) whilst Groups 3 & 4 both do not contain any AES data (Missing).

Pressing this switch when in any of these positions switches back to the previous "Enter for EMBEDDED AUDIO" menu screen.



3. AES Audio Status:

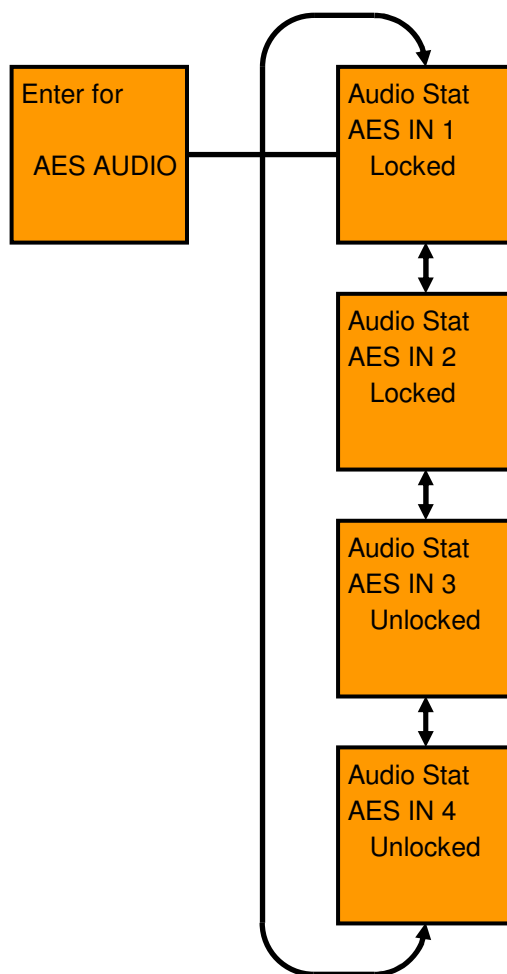
The third menu under the STATUS menu is the AES AUDIO status.

Pressing this switch when in this position switches to a sub-menu of Audio Status, which indicate the presence (Locked) or absence (Unlocked) of AES input signals on the rear assembly.

The four AES inputs are designated as AES 1, AES 2, AES 3, and AES 4.

To access information about each AES input, press the UP / DOWN arrow pushbuttons on the front panel until the desired AES number is shown. In the example below AES 1 & 2 inputs both have AES data (Locked) connected whilst AES 3 & 4 inputs both do not have AES data (Unlocked) connected.

Pressing this switch when in any of these positions switches back to the previous “Enter for EMBEDDED AUDIO” menu screen.



4. Enter To Go Back:

The fourth menu under the STATUS menu is the ENTER TO GO BACK screen.

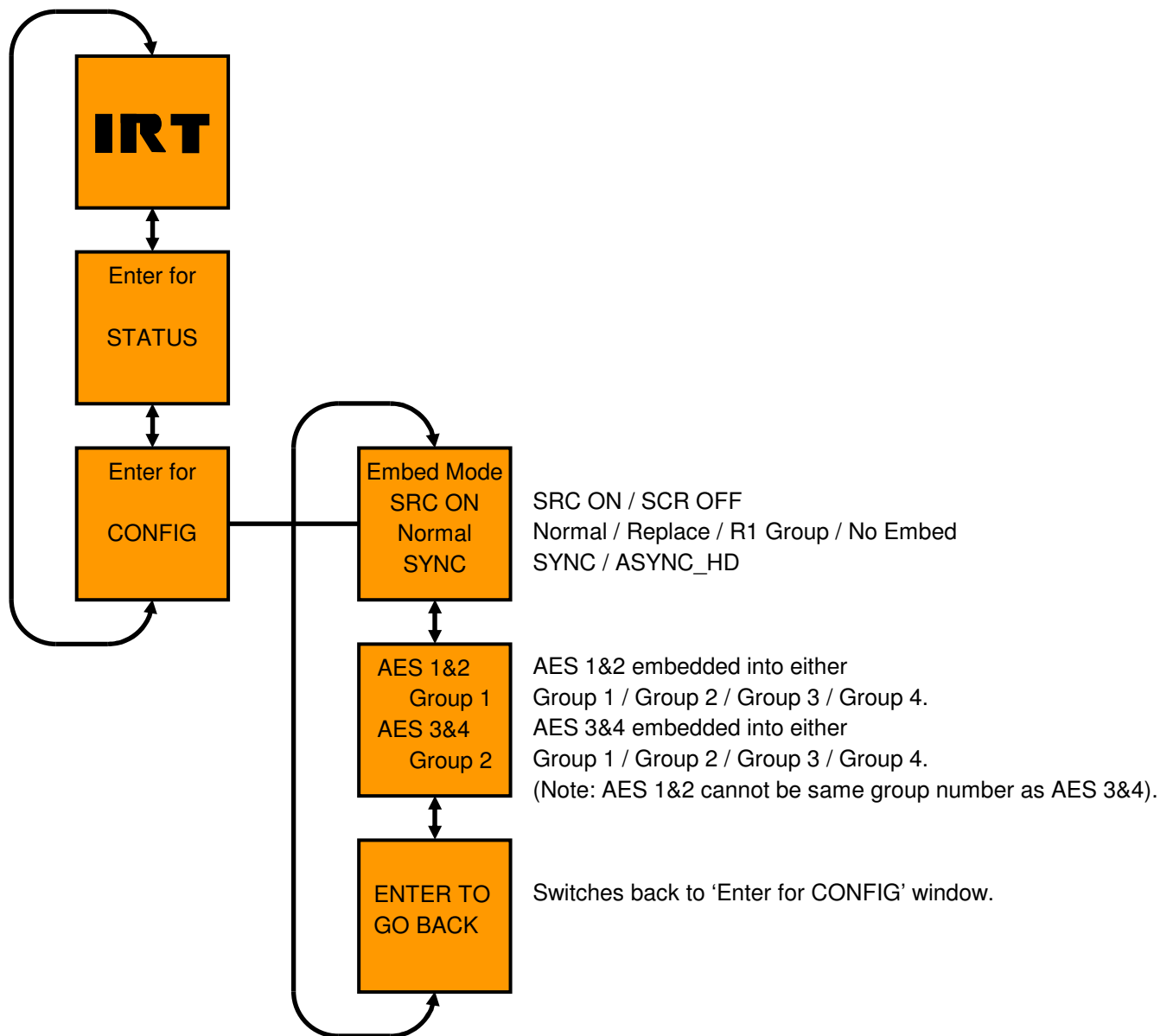


Pressing this switch when in this position switches back to the previous “Enter for STATUS” menu screen.

CONFIG Menu Structure:

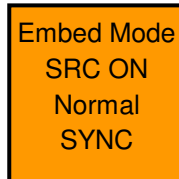
Pressing the CONFIG menu option gives configuration settings for embedding the input AES data.

The following menu structure shows the various configuration settings. To scroll between the various sub-menus under the CONFIG menu press the UP / DOWN arrow pushbuttons on the front panel.



1. Embed Mode:

The first menu under the CONFIG menu is the Embed Mode screen.

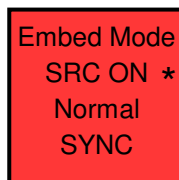


There are three modes that can be set.

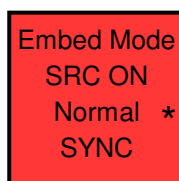
SRC ON / SRC OFF;
Normal / Replace / R1 Group / No Embed; and
SYNC / ASYNC_HD

- SRC ON - Sample Rate Converter ON. Input AES audio streams are resampled to 48kHz. For SD-SDI, AES audio signals should always have SRC ON, unless AES is externally synced to SDI input;
- SRC OFF - Sample Rate Converter OFF. Input AES audio streams are not resampled. Not suitable for SD. AES data signals (non audio), should always be externally synced to SDI input and have SRC OFF.
- Normal - All four Groups are deleted of existing data before embedding new AES data;
- Replace - Both Groups that are to be inserted with AES 1&2 and AES 3&4 deleted before insertion. Other two Groups' contents remain intact;
- R1 Group - Only AES 1&2 inserted into chosen Group, deleting any existing data within that Group. Other three Groups' contents remain intact. AES 3&4 not inserted into any group;
- No Embed - No AES insertion into any Group. Existing Group contents remain untouched.
- SYNC - AES data inserted synchronously with video input. Default state for SD-SDI;
- ASYNC_HD - AES data inserted Asynchronously with video input. Valid for HD-SDI and 3G-SDI input signals only. SD-SDI signals will still function in SYNC mode regardless.

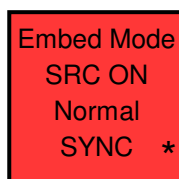
Pressing this switch when in this position allows the various Embed Mode options to be changed. With an input SDI signal present, background screen colour changes to red with a flashing asterisk (*) marker to the right of to the SRC setting. Note that when no input SDI is signal present the background screen does not change to red, only the flashing asterisk marker is present.



To change the Sample Rate Converter (SRC) between ON and OFF, press the UP / DOWN arrow pushbuttons on the front panel to the desired setting and then press the menu button. The SRC setting is now set and the asterisk (*) marker then moves down to the next Embed Mode option.



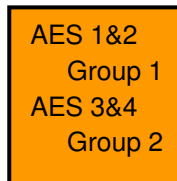
To change whether existing embedded data within the various four groups is deleted or not, press the UP / DOWN arrow pushbuttons on the front panel to the desired setting (Normal, Replace, R1 Group or No Embed) and then press the menu button. The asterisk (*) marker then moves down to the next Embed Mode option.



To change whether AES data is inserted synchronously (SYNC) or asynchronously (ASYNC_HD), press the UP / DOWN arrow pushbuttons on the front panel to the desired setting and then press the menu button. The asterisk then disappears and the background colour goes back to match the SDI input type. Note that with an SD-SDI input signal the AES data is always inserted synchronously regardless of the SYNC / ASYNC_HD setting.

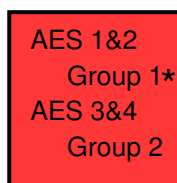
2. AES Group configuration:

The second menu under the CONFIG menu is the AES Group screen.

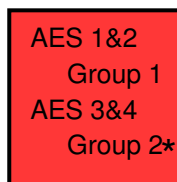


AES 1&2 form one audio/data group, AES 3&4 form a second audio/data group. An SDI signal contains positions for four audio/data groups. Each audio/data group contains up to two AES streams.

Pressing this switch when in this position allows the inputted AES 1&2 and AES 3&4 signals to be inserted into two of the four allowable Group numbers. Whether these are actually inserted into the SDI stream or not is dependent upon the Embed Mode Normal/Replace/R1 Group/No Embed setting. When pressed, with an input SDI signal present, the background screen colour changes to red with a flashing asterisk (*) marker to the right of the Group number corresponding to AES 1&2. Note that when no input SDI signal is present the background screen does not change to red, only the flashing asterisk marker is present.



To change the Group number of the AES 1&2 audio/data group between the four possible Group numbers, scroll either the UP or DOWN arrow pushbutton on the front panel to the desired setting and then press the menu button. The Group number setting for AES 1&2 is now set and the asterisk (*) marker then moves down to the next Group number of the AES 3&4 audio/data group.



It is possible to set the Group number for AES 1&2 to any of the possible four settings. If the selected Group number matches that of what AES 3&4 are set for, the Group number of AES 3&4 automatically changes to the next available number. For example, if AES 1&2 are set to Group 2, and AES 3&4 are already set to Group 2, AES 3&4 will automatically change to Group 3. Once the Group number for AES 1&2 has been set, AES 3&4 can only be set to one of the three remaining Group numbers.

To change the Group number of the AES 3&4 audio/data group between the three remaining possible Group numbers, scroll either the UP or DOWN arrow pushbutton on the front panel to the desired setting and then press the menu button. The asterisk then disappears and the background colour goes back to match the SDI input type.

3. Enter To Go Back:

The third menu under the CONFIG menu is the ENTER TO GO BACK screen.

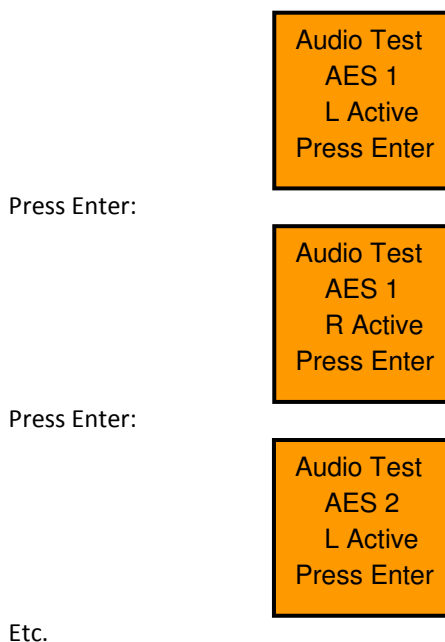


Pressing this switch when in this position switches back to the previous "Enter for CONFIG" menu screen.

Audio Test Generator:

With DIP Switch SW1-2 in the ON position, as per the *Configuration* section of this manual, a 1 kHz tone is embedded, as per the CONFIG menu settings, and sequentially switched between the left and right channels of each of the AES signals.

All four front panel LEDs illuminate and the front panel menu button changes to a new screen where the audio tone is switched between the left and right channel of the AES signal. Pushing the front panel menu button switches the tone sequentially with each press of the switch.



Audio paths may be checked down stream of the embedded SDI signal for such things as correct wiring or for correct SDI signal chosen.

Note that any actual AES inputs are ignored whilst the Audio Test Generator setting is enabled. Not for general use. Disable when using for live circuits.

Note also that audio is only embedded into the two groups as per the *AES Group configuration* previously explained on the previous page of this manual.

Video Generator:

Colour Bars or Colour Black Video Generator on loss of SDI input allow an active path for AES insertion transmission. Once set there are no user operation controls. See *Configuration* section of this manual for DIP switch settings.

When automatic changeover of signals is to take place on a loss of SDI signal, video generator should be disabled.

SNMP

What Is It?

SNMP stands for Simple Network Management Protocol. It is an application layer protocol for managing IP (Internet Protocol) based systems. SNMP enables system administrators to manage system performance, and to find and solve system problems. SNMP runs over UDP (User Datagram Protocol), which in turn runs over IP.

Three types of SNMP exist: SNMP version 1 (SNMPv1), SNMP version 2 (SNMPv2) and SNMP version 3 (SNMPv3). It is not the intention here to discuss the differences between various versions, only to bring attention to the fact that IRT Electronics modules, fitted with SNMP capability, use SNMPv1.

An SNMP managed network consists of three key components: Network Management Systems (NMS), *agents*, and *managed devices*.

An *NMS* is the console through which the network administrator performs network management functions, such as monitoring status (e.g. alarm states) and remote controlling, of a set of managed devices. One or more *NMSs* must exist on any managed network. Generally the *NMS* is a computer running third party SNMP control software. There are a number of third party SNMP software applications currently available on the market.

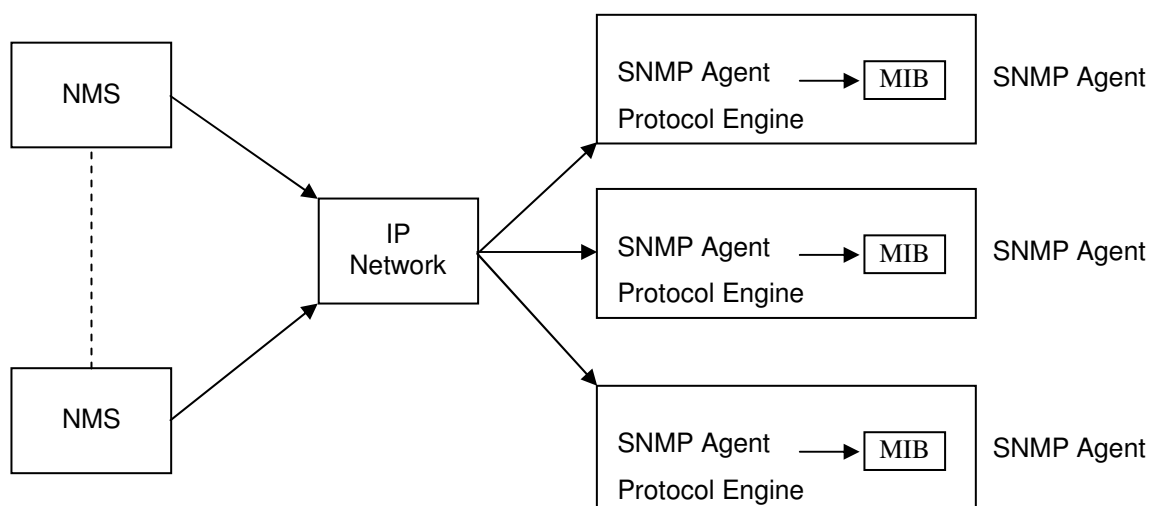
An *NMS* polls, or communicates with, an *agent*. An *agent* is a network management software module that resides in a *managed device*. An *agent* has local knowledge of management information and translates that information into a form compatible with SNMP. The *agent*, therefore, acts as an interface between the *NMS* and the managed devices. The *NMS* sends a request message, and control commands for the managed devices, to the *agent*, which in turn sends a response message, containing information about the *managed devices*, back to the *NMS*.

A *managed device* contains an SNMP *agent* and resides on a managed network. *Managed devices* collect and store management information and make this information available to *NMSs* using SNMP.

Managed device agent variables are organised in a tree structure known as a Management Information Base (MIB). Within the *MIB* are parameters pertaining to the *managed device*. An Object Identifier (OID) number within the *MIB* defines the managed device type. This is a unique number specific to the model of *managed device*. Other information relating to the device is also stored, information such as alarm states, controllable settings, etc. The *MIB* tree is organised in such a way that there will be no two *MIB* files with conflicting placements.

Normally an *NMS* polls an *agent* for information relating to the *MIB* in a managed device to be sent back to the *NMS*. When certain conditions are met within the *MIB*, such as major alarm conditions, for example, the *agent* automatically sends what is known as a *trap* to the *NMS* without any prompting from the *NMS*. This allows automatic notification of a predetermined event.

SNMP Block Diagram



SNMP with IRT Products:

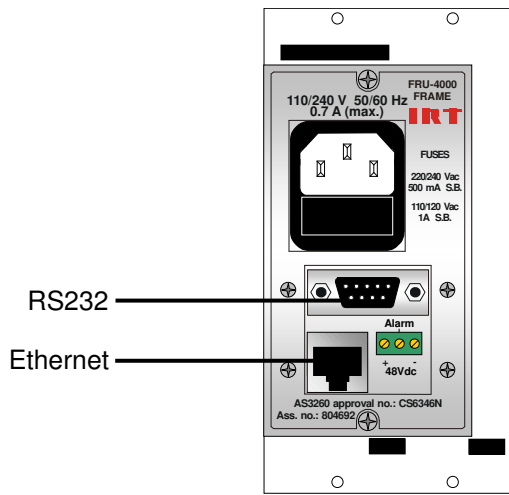
IRT Electronics currently employs SNMPv1 with its SNMP capable frames. The frame acts as an *agent* when fitted with a CDM-xxxx module. This module has its own designated slot next to the power supply so as to not affect the number of modules that the frame will take. Communication between the *NMS*, the frame and its loaded modules are via this CDM-xxxx module. Note that the *NMS* software is third party and not supplied by IRT Electronics.

Ethernet connection for SNMP operation is via an RJ45 connector on the rear of the frame, below the mains inlet. Ethernet rate runs at either 10 baseT or 100 baseT.

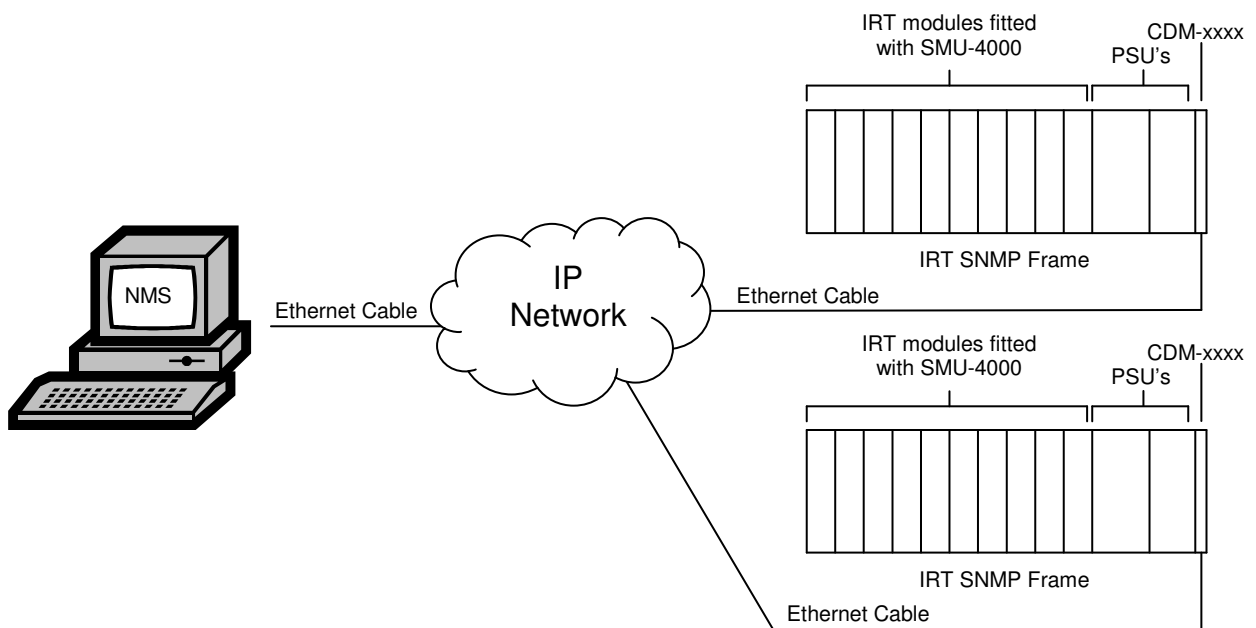
Frame parameters, such as Name, Address and Location, are set via an RS232 interface, a D9 connector on the rear of the frame below the mains inlet. A software terminal emulator, such as Tera Term or HyperTerminal, is used for setting and reading the parameters of the frame.

IRT modules that are SNMP compatible need a plug-in SMU-4000 module with a program relevant to the module that it is plugged into. Depending on the module, besides the module identification, parameters such as alarm states, inputs and controls etc. are communicated to the CDM-xxxx *agent* via a data bus on the rear of the frame. Thus the CDM-xxxx collects information on what is loaded within the frame, what positions they occupy, and their current status for communication to the *NMS* when the *NMS* sends a request for information.

In the event of a major alarm from any of the SNMP compatible modules, or power supplies, a *trap* is automatically sent by the CDM-xxxx *agent* to the *NMS* without any prompting by the *NMS*. This alerts the operator to any fault conditions that may exist that need immediate attention.



IRT SNMP Connections



IRT SNMP Setup

DAI-4200 SNMP Functions:

The DAI-4200 comes with SNMP capability built in as standard. When installed in an IRT frame with SNMP capability, the DAI-4200 can be interrogated by an SNMP Network Management System (NMS).

The following SNMP functions are capable of being monitored and/or set by an NMS:

- An indication that an input SDI signal is present and its type (notPresent (1), sd (2), hd (3) or sdi3g (4));
- An indication of each of the existing Group numbers within the inputted SDI (notPresent (1), present (2));
- An indication of the presence of each of the AES inputs (notPresent (1), present (2));
- An indication and control[†] of the Group numbers assigned to AES 1&2 and AES 3&4;
- An indication and control of the Embed Mode functions (normal (1), replace (2), r1Group (3), noEmbed (4));
- An indication and control of the Asynchronous[‡] mode (disable (1), enable (2));
- An indication and control of the Sample Rate Converter (SRC) setting (on (1), off (2));
- An indication of the firmware version of the FPGA in the format x.y where x is the major revision number and y is the minor revision number;
- An indication of the software version of the FPGA in the format x.y where x is the major revision number and y is the minor revision number;
- Trap automatically sent, if enabled, on loss or insertion of SDI input (enabled (1), disabled (2)); and
- Unit reset control - resets system up time counter. A set with a value of 2 sent to this OID will cause a system reset to occur. When queried returns 1.

NOTE: † Group numbers for AES 1&2 and AES 3&4 **must** be set differently from each other. Although it is possible to set the group numbers for AES 1&2 and AES 3&4 the same via SNMP and the corresponding front panel setting will then say the same, the AES insertion will not function correctly.

‡ Asynchronous mode only valid for HD-SDI and 3G-SDI input signals only. With an SD-SDI input signal the AES data is always inserted synchronously regardless if the asynchronous mode is enabled or not.

Maintenance & Storage

Maintenance:

No regular maintenance is required.

Care however should be taken to ensure that all connectors are kept clean and free from contamination of any kind. This is especially important in fibre optic equipment where cleanliness of optical connections is critical to performance.

Storage:

If the equipment is not to be used for an extended period, it is recommended the whole unit be placed in a sealed plastic bag to prevent dust contamination. In areas of high humidity a suitably sized bag of silica gel should be included to deter corrosion.

Where individual circuit cards are stored, they should be placed in antistatic bags. Proper antistatic procedures should be followed when inserting or removing cards from these bags.

Warranty & Service

Equipment is covered by a limited warranty period of three years from date of first delivery unless contrary conditions apply under a particular contract of supply. For situations when “No **Fault Found**” for repairs, a minimum charge of 1 hour’s labour, at IRT’s current labour charge rate, will apply, whether the equipment is within the warranty period or not.

Equipment warranty is limited to faults attributable to defects in original design or manufacture. Warranty on components shall be extended by IRT only to the extent obtainable from the component supplier.

Equipment return:

Before arranging service, ensure that the fault is in the unit to be serviced and not in associated equipment. If possible, confirm this by substitution.

Before returning equipment contact should be made with IRT or your local agent to determine whether the equipment can be serviced in the field or should be returned for repair.

The equipment should be properly packed for return observing antistatic procedures.

The following information should accompany the unit to be returned:

1. A fault report should be included indicating the nature of the fault
2. The operating conditions under which the fault initially occurred.
3. Any additional information, which may be of assistance in fault location and remedy.
4. A contact name and telephone and fax numbers.
5. Details of payment method for items not covered by warranty.
6. Full return address.
7. For situations when “No **Fault Found**” for repairs, a minimum charge of 1 hour’s labour will apply, whether the equipment is within the warranty period or not. Contact IRT for current hourly rate.

Please note that all freight charges are the responsibility of the customer.

The equipment should be returned **to the agent who originally supplied the equipment** or, where this is not possible, to IRT direct as follows.

Equipment Service
IRT Electronics Pty Ltd
26 Hotham Parade
ARTARMON
N.S.W. 2064
AUSTRALIA

Phone: 61 2 9439 3744 Fax: 61 2 9439 7439
Email: service@irtelectronics.com