IRT

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IRT Eurocard

Type AMS-4171

2 x 2 relay switcher
for HD, SDI, G.703 or analogue video
&
AES, RS422 or stereo audio signals

Designed and manufactured in Australia

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

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Revision History

Revision	Date	By	Change Description	Applicable to:
0	16/04/2008	AL	Original Issue.	S/N: > 0804001
1	16/02/2009	AL	Link setting changes for issue 4 PCB.	Issue 4 PCB.
2	29/06/2010	AL	Issue 4 PCB never made. Link settings corrected for all units ever made. SNMP functions updated.	All units.

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Instruction Book

Table of Contents

This instruction book applies to units with serial numbers > 0804001.

# 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 AMS-4171
2 x 2 relay switcher
for HD, SDI, G.703 or analogue video
&
AES, RS422 or stereo audio signals
General Description
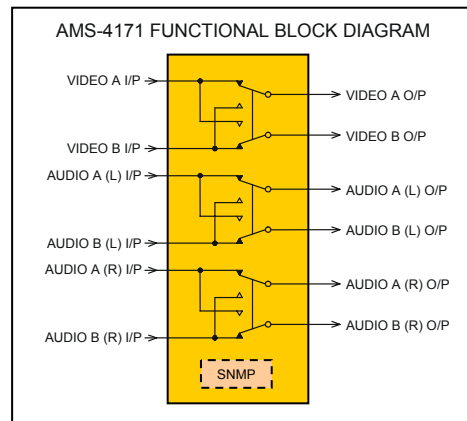
The AMS-4171 consists of one "video" and two "balanced audio" switches. Each switch is arranged as a changeover set with two inputs and two outputs. No terminations are provided on the board allowing the switcher to be used in a wide variety of applications and with signals of various types and impedances.

The "video" path uses enhanced performance relays to provide switching capabilities for high-speed data signals up to 1.485 Gb/s and may be used with analogue video, SDI, HDSDI[1], ASI or G.703 data signals.

The "audio" path may be used for balanced or unbalanced audio or control signals (RS232, RS422, RS485 etc).

The AMS-4171 is ideally suited to applications where a simple choice between two inputs or outputs is required and may be easily driven by audio, video or other detector circuits for automatic path selection.

Front panel switches allow a choice of local or remote control operation.

Front panel LED indicators are used to indicate the status of each relay circuit.

Remote control is via a switch to ground connection, where video and audio may be operated independently or with audio following video by means of link settings.

An optional SNMP (Simple Network Management Protocol) plug-in module is available for remote monitoring and control when used in conjunction with IRT's 4000 series frame fitted with SNMP capability.

The AMS-4171 is designed to fit IRT's standard Eurocard frames as well as IRT's 4000 series frame for use with IRT's SNMP system and may be used alongside any other of IRT's analogue or digital Eurocards.

Standard features:

- **One video and two balanced audio changeover switches in one package**
- **Video path suitable for HDSDI[*] (1.485Gb/s), SDI , analogue video, ASI data streams and G703 signals @ 2, 8, 34, 45, 144, 155Mb/s**
- **Audio path suitable for 2 balanced, or 4 unbalanced, audio or data signals**
- **Married or independent operation**
- **Default path on power fail**
- **Local or remote control**
- **Optional plug-in SNMP monitoring and control module**
- **Front panel LED status indicators**

NOTE: 1   For HDSDI applications, it is recommended that the AMS-4171 be used in either IRT's 1RU or 4000 series 3RU frames only.

Technical Specifications

IRT Eurocard module
Type AMS-4171

Video Signal Path:

Signal types	HDSDI/SDI/ASI/G.703/Video
Switching characteristic	Non latching 4 port changeover relay.
Video crosstalk between channels	< -70 dB to 10 MHz.
	< -50 dB to 300 MHz.
	< -30 dB to 1.5 GHz.
	(With measured channel input terminated by 75 Ω)
Frequency response	+0/-0.5 dB 0 Hz to 750 MHz,
	+0/-1.5 dB 750 MHz to 1.5 GHz
Return loss	25 dB @ 45 MHz
	15 dB @ 270 MHz
	15 dB @ 1.5 GHz

Audio/Low speed Data:

Audio Crosstalk	Between channels with measured channel input terminated by 600Ω. Less than -90 dB (20 Hz - 20 kHz).

Auxilliary Data:

Mode	TTL level: Local = 0V (LOW); Remote = 4.5V (HIGH) via pull-up resistor, or open drain (link selectable).
Data/Tally	Relay changeover contact set. Common can be left open, or linked to ground or +12V of the main board.

Control:

Inputs	Ground, or TTL compatible circuit with 2k2 internal pull-up resistors to +4.5V.

Connectors:

	Audio:	5 pin plug in screw termination sockets.
	Control:	4 pin plug in screw termination socket.

Other:

Relay contact rating		24 Vdc - 1 A
		100 Vac - 0.3 A
Power requirements:		28 Vac CT (14-0-14) or $\pm$ 16 Vdc.
Power consumption		1 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:	Front panel	Grey background, black lettering & red IRT logo.
	Rear assembly	Detachable silk-screened PCB with direct mount connectors to Eurocard and external signals.
Dimensions		6 HP x 3 U x 220 mm IRT Eurocard.
Supplied accessories		Rear connector assembly with matching connectors for control and audio inputs.
Optional accessories		SNMP plug-in module for use with 4000 series frame fitted with SNMP "Agent".

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

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.

Configuration

Link Settings:

LK1	1-2	Separate audio control.
	2-3	Audio follow video control.
LK2	1-2	If LK1 set for separate audio control (1-2 position), set LK2 to 1-2 position also.
	2-3	Local control selection tally at SK5-3 output. Use only, if desired, when LK1 is in the audio follow video setting (2-3 position).
LK3		Not fitted.
LK4	1-2	Relay K3 Common (SK6-1 on rear assembly) set to +12Vdc via a 4R7 resistor.
	2-3	Relay K3 Common (SK6-1 on rear assembly) set to Ground.
	OUT	Relay K3 Common (SK6-1 on rear assembly) open (floating).
LK5	IN	Local/Remote tally 4.5V via pull-up resistor for Remote setting.
	OUT	Local/Remote tally open drain for Remote setting.

Remote control mode:

With the front panel Local/Remote switch set for remote control operation, control of the AMS-4171 changeover relay is by a permanent ground contact only, via SK5 on the rear assembly.

Local control mode:

With the front panel Local/Remote switch set for local control operation, control of the AMS-4171 changeover relay is by front panel Main/Standby switch. Remote switching to Standby via SK5 is still possible even with the front panel Local/Remote switch set to local.

Input termination:

No terminations are provided on the module so that the switcher can function in changeover mode.

For 2 x 1 switcher applications the following terminations are recommended be installed:

Video:
Output A (Main) only is used and should be terminated at connected equipment.
Output B (Standby) should be terminated in 75Ω (or 50Ω if being used for 50Ω RF signals) using a BNC termination plug.

Audio:
Outputs A only are used and should be terminated at connected equipment.
Output B may be terminated if desired by connecting termination resistors to the connector on the rear assembly of the module. The resistor values should be chosen to match the characteristic impedance of the rest of the connected audio system. For example for balanced 600Ω, two 300Ω resistors should be used.
In most modern audio systems a low output impedance of approximately 40Ω and input impedances of greater than 10 kΩ are used. If this is the case no termination of the unused audio output is required.

Installation & Operation

Installation in frame or chassis:

See details in separate manual for selected frame type.

See also *Configuration* section.

Video (analogue, SDI, HDSDI, G.703 data) Signal connections:

Signal connections are made to BNC coaxial connectors. No termination of inputs is provided on the module. When switched to the output the input load impedance is that of the load connected to the output. Where the input signal is required to be terminated, and one of the outputs is not connected to anything, then this unconnected output should be terminated by an appropriate BNC terminator of the required impedance, usually 75 Ohm.
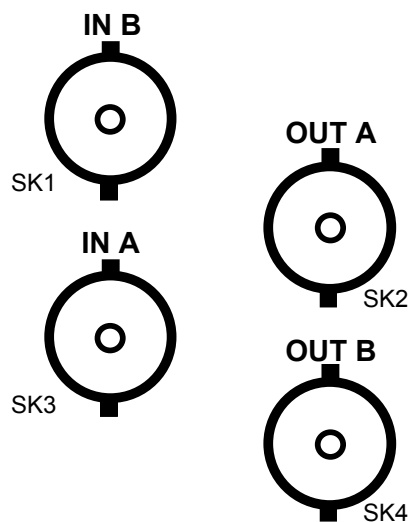
Audio Signal connections:

Audio signal connections are made to 5-pin plug in screw terminating connectors. No termination of inputs is provided on the module. When switched to the output the input load impedance is that of the load connected to the output.

There are four 5-pin audio connectors (IN A / OUT A Left, IN B / OUT B Left, IN A / OUT A Right and IN B / OUT B Right). Common Ground between IN and OUT is shared via the middle pin (pin 3).
   For example:
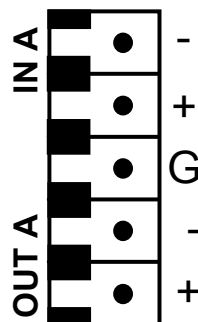
When wiring, be sure to keep phase of audio cables the same. The above connector will take either a balanced input, balanced output audio (or data (RS-232, RS-422, etc.)) signal, or two unbalanced audio signals, where the ground connectors are commoned together and the two unbalanced audio signals connected to each of the +/- phase connections.

Control connections:

Video switch status is made by a relay contact on SK6 connector (Video Tally) located on the rear assembly. With pin 3 short circuited to pin 1 (pins 1 and 2 open circuited), module is in REST position, i.e. Input A (Main) to Output A and Input B (Standby) to Output B. Likewise, if pin 2 is short circuited to pin 1 (pins 1 and 3 open circuited) then module is in SET position, i.e. Input A (Main) to Output B and Input B (Standby) to Output A. Audio switch status is only possible when the AMS-4171 is configured for audio follow video mode.

Video Tally input connector SK6 pin configuration is as follows:

Pin	Description
1	Relay common (contact connected to either +12Vdc via 4R7 resistor, ground, or open via link LK4 position – see *Configuration* section).
2	Relay SET position – I/P B (Standby) selected.
3	Relay REST position – I/P A (Main) selected.

1   2   3 SK6

VIDEO TALLY
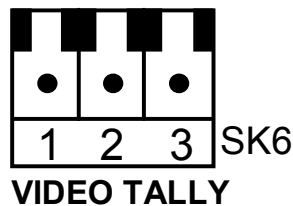
Remote control connections are via the SK5 connector located on the rear assembly.

Control input connector SK5 pin configuration is as follows:

Pin	Description
1	Video SET control – select Input B (Standby) to Output A.
2	RESET control – not used. For mag-latch relays only (non standard).
3	Audio SET control (or Local/Remote tally indication if setup for audio follow video).
4	Ground.

SK5

1   2   3   4
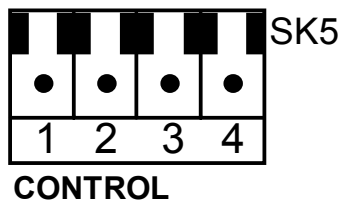
CONTROL

Connecting the appropriate control input to ground will cause the relays to operate and the output state to cross over as follows:

Control	Input		Output
SET (Gnd)	A (Main)	↔	B
	B (Standby)	↔	A

Removing the ground connection will switch back the relays to the REST state.

	A (Main)	↔	A
	B (Standby)	↔	B

With the unit set for audio follow video mode (LK1 in position 2-3 state), grounding the video SET control (SK5-1) will switch both the video and audio relays at the same time. The audio SET control (SK5-3) no longer operates as a control port. With link LK2 in the 2-3 position, SK5-3 acts as a Local/Remote mode tally.

This tally uses TTL logic to indicate local or remote setting. The local setting is indicated by approximately 0V (LOW) on pin 3 of SK5, whilst the remote setting, with link LK5 IN, is indicated by approximately 4.5V (HIGH) via a pull-up resistor on the same pin, or with link LK5 OUT remote setting is indicated by an open drain output of a FET transistor.

Front Panel controls:

On the front panel there are two switches. The upper switch is a 2 way toggle switch for selecting between the inputs A (Main) and B (Standby). In order for this switch to operate the lower switch, which is a 2 way toggle switch, must be set to the *Local* position. With the lower switch set to the *Remote* position, the upper Input Select switch does not operate.

With the Local/Remote switch set to the *Local* position, a red LED illuminates to give a visual warning indication that the unit is in local operation.

The AMS-4171 is controlled by a permanent ground contact closure. Even if the switcher was to be set to the *Local* position, local control will not operate whilst this remote control has control. With the switcher set to the *Local* control position, it is still possible for a remote control to operate (SET) and over-ride the local control setting.

With the AMS-4171 configured for separate audio controls, the front panel local switch will only switch the video circuit. Audio will only switch by the local control if the AMS-4171 is configured for audio follow video mode.

Front panel LEDs give a visual indication of inputs selected. VID MAIN (Input A) LED is a green LED and indicates that the Video Input A (Main) is switched to Video Output A, and Video Input B (Standby) is switched to Video Output B. VID STANDBY (Input B) LED is a yellow LED and indicates that Video Input A (Main) is switched to Video Output B, and Video Input B (Standby) is switched to Video Output A. Likewise AUD MAIN (Input A) LED is a green LED and indicates that the Audio Input A (Main) is switched to Audio Output A, and Audio Input B (Standby) is switched to Audio Output B. AUD STANDBY (Input B) LED is a yellow LED and indicates that Audio Input A (Main) is switched to Audio Output B, and Audio Input B (Standby) is switched to Audio Output A.

SMU-4000 Installation

The SMU-4000 plug-in SNMP management controller module can only be fitted to IRT's 4000 series modules that are capable of being SNMP upgradeable. To determine whether a module is SNMP upgradeable, a square section on the main PCB is silk screened and fitted with three multipin sockets – as shown below:
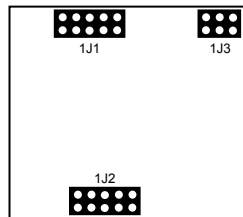
This is where the SMU-4000 plug-in SNMP management controller module is fitted. The three sets of multipins on the underside of the SMU-4000 line up with the three sets of multipin sockets on the main PCB module. Align all pins and then gently press the SMU-4000 all the way down into place.

If the SMU-4000 is not already programmed with the correct firmware to match the module that it is being plugged into, it then needs to be programmed via the pins on the topside of the SMU-4000.

Note that installation will generally be done by IRT Electronics at the time of ordering.

Note also that an SMU-4000 will only be functionally operational when the main module that it is plugged into is fitted into an IRT SNMP capable frame fitted with a CDM-xxxx SNMP agent and being interrogated by a suitable Network Management System.
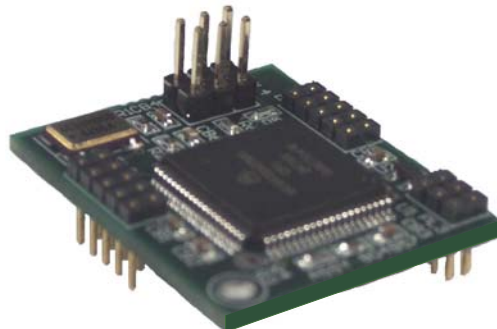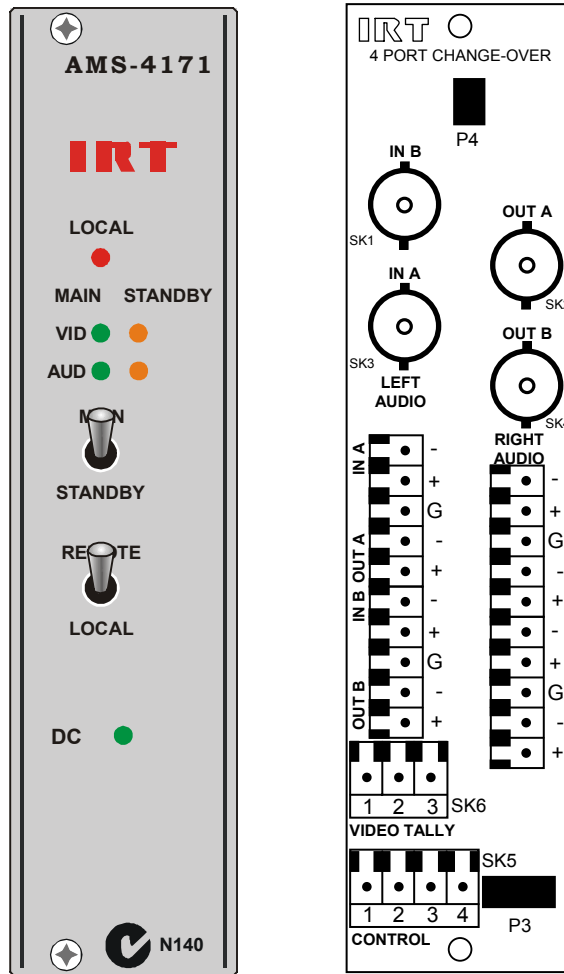

Figure 1: SMU-4000 module

Front & rear panel connector diagrams

The following front panel and rear assembly drawings are not to scale and are intended to show relative positions of connectors, indicators and controls only.

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 *NMS*s 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 *NMS*s 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
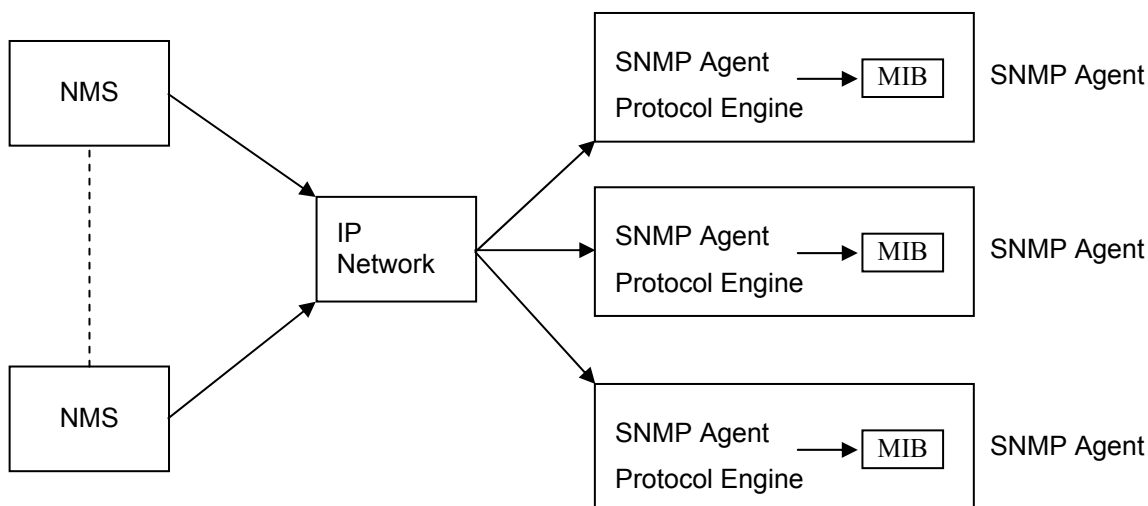
SNMP with IRT Products:

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.
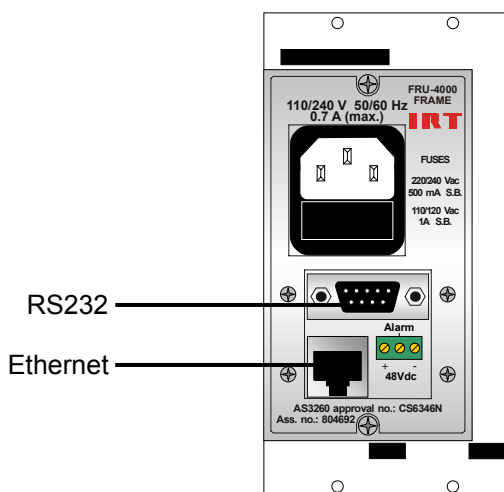
IRT SNMP Connections
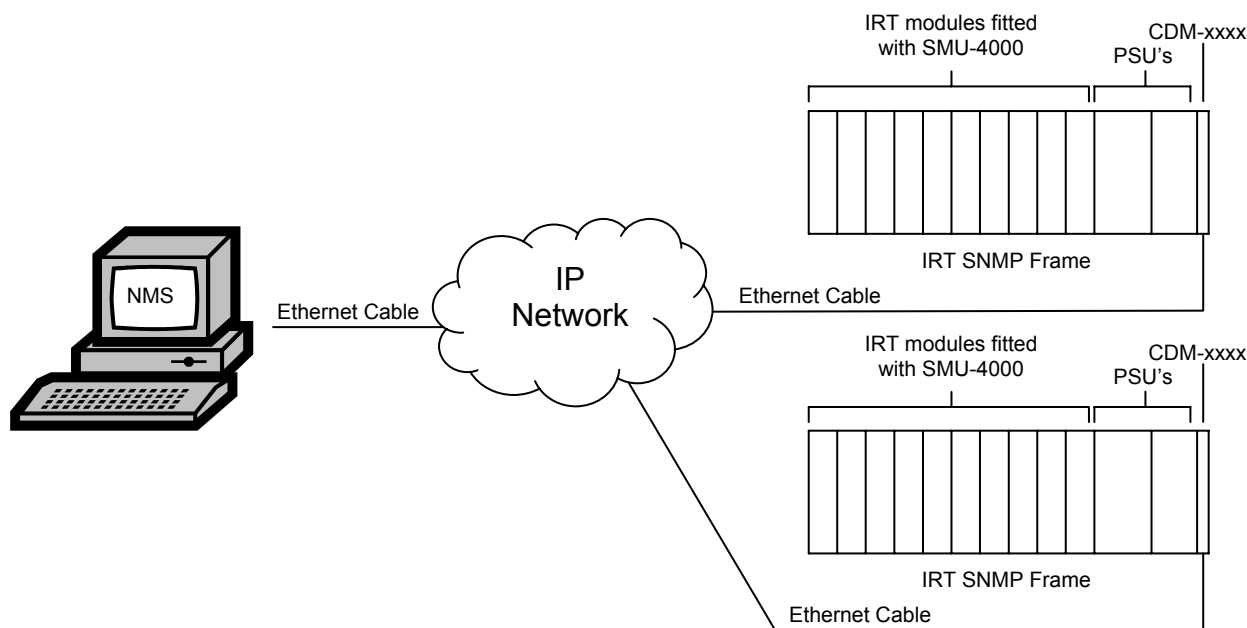
IRT SNMP Setup

AMS-4171 SNMP Functions:

With the AMS-4171 fitted with the optional plug-in SMU-4000 SNMP module, programmed with the firmware to suit and installed in an IRT 4000 series frame with SNMP capability, the unit can be interrogated by an SNMP Network Management System (NMS).

The following SNMP functions are capable of being controlled an monitored by an NMS:

irt4171VideoStatus   - An indication of the state of the video relays [main (1), standby (2)].
      Main defined as Input A connected to Output A and Input B connected to Output B.
      Standby defined as Input A connected to Output B and Input B connected to Output A.

irt4171AudioStatus   - An indication of the state of the audio relays [main (1), standby (2)].
      Main defined as Input A connected to Output A and Input B connected to Output B.
      Standby defined as Input A connected to Output B and Input B connected to Output A.

irt4171LocalRemote   - An indication of the setting of the local/remote front panel switch [remote (1), local (2)].
      SNMP control is disabled and front panel control is enabled if this switch is in the Local position. External control via the rear assembly is always in operation.

irt4171VideoControl   - Set the position of the video relays [main (1), standby (2), notAvailable (3)].
      Main defined as Input A connected to Output A and Input B connected to Output B.
      Standby defined as Input A connected to Output B and Input B connected to Output A.
      Not Available indicates that SNMP video control is not possible. This occurs when front panel Local/Remote switch is in the Local position.

irt4171AudioControl   - Set the position of the audio relays [main (1), standby (2), notAvailable (3)].
      Main defined as Input A connected to Output A and Input B connected to Output B.
      Standby defined as Input A connected to Output B and Input B connected to Output A.
      Not Available indicates that SNMP audio control is not possible. This occurs when front panel Local/Remote switch is in the Local position.

irt4171Reset   - Unit reset control. A set with a value of 2 sent to this OID will cause a system reset to occur. When queried returns a Null.

irt4171Trap   - Enable or Disable Traps to be sent when the Video or Audio Status changes [enabled (1), disabled (2)].

irt4171TrapSeqNo   - Indicates a number that increases by 1 for every Trap sent.

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.

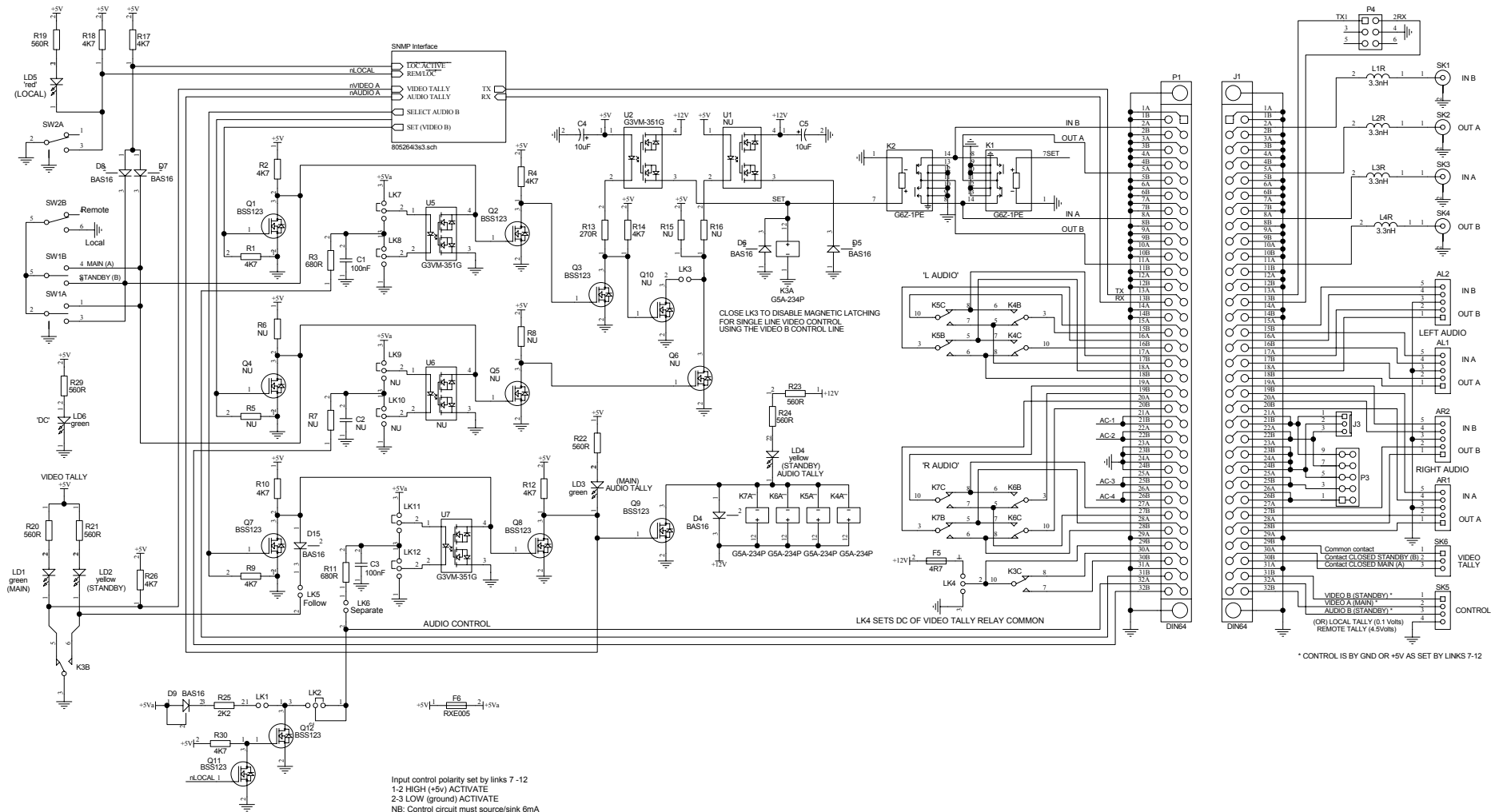Please note that all freight charges are the responsibility of the customer.

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
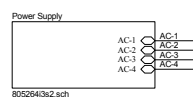Email: service@irtelectronics.com

Drawing Index

Drawing #	Sheet #	Description
805264	1	AMS-4171 main circuit schematic.
805264	2	AMS-4171 Power Supply.
805264	3	AMS-4171 SNMP interface.

SNMP Interface
LOC. ACTIVE
REM/LOC.
nLOCAL
nVIDEO A
nAUDIO A
VIDEO TALLY
AUDIO TALLY
SELECT AUDIO B
SET (VIDEO B)
805264i3s3.sch

CLOSE LK3 TO DISABLE MAGNETIC LATCHING
FOR SINGLE LINE VIDEO CONTROL
USING THE VIDEO B CONTROL LINE

LK4 SETS DC OF VIDEO TALLY RELAY COMMON

Relays shown in RESET or OFF position.

Input control polarity set by links 7 -12
1-2 HIGH (+5v) ACTIVATE
2-3 LOW (ground) ACTIVATE
NB: Control circuit must source/sink 6mA

Power Supply
AC-1
AC-2
AC-3
AC-4
805264i3s2.sch

LK5 CLOSED SEPARATE AUDIO CONTROL **OR**
LK6 CLOSED AUDIO FOLLOW VIDEO CONTROL

LK2 1-2 FOR SEPARATE AUDIO CONTROL
LK2 2-3 WILL INDICATE LOCAL CONTROL SELECTION AT SK5-3
WHEN AUDIO FOLLOW VIDEO CONTROL IS SELECTED SETTING
DO NOT USE WHEN LK6 IS SET FOR SEPARATE AUDIO CONTROL

CLOSE LK1 IF PULL-UP VOLTAGE REQUIRED FOR LOCAL TALLY.

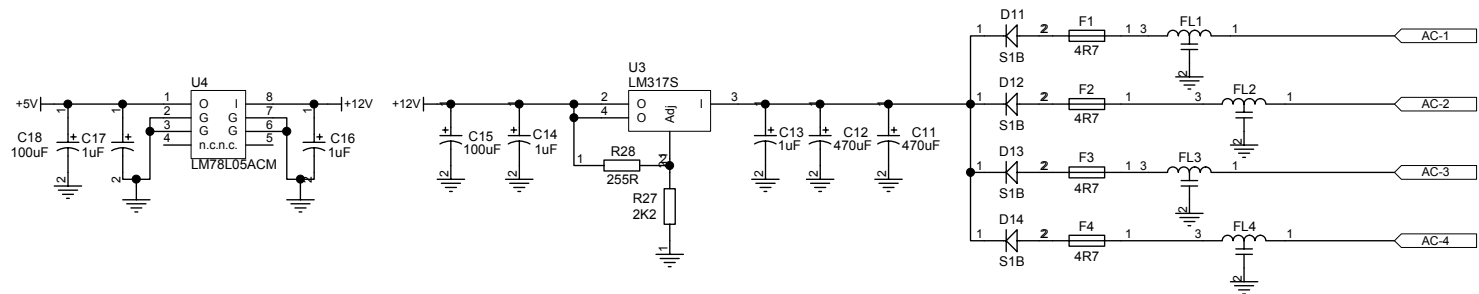Note: 'NU' denotes component not used in the circuit, may be fitted on board.

* CONTROL IS BY GND OR +5V AS SET BY LINKS 7-12

PCB 805249

Video Cross-talk <-50db @ 270 MHz
Video Cross-talk <-30db @ 1.5GHz
Audio Cross-talk <-85db 10HZ - 20KHz

Common contact
Contact CLOSED STANDBY (B)
Contact CLOSED MAIN (A)
VIDEO B (STANDBY) *
VIDEO A (MAIN) *
AUDIO B (STANDBY) *
(OR) LOCAL TALLY (0.1 Volts)
REMOTE TALLY (4.5Volts)

1	07-06-2007	
2	22-08-2008 ECR1868	
3	25-08-2008 ECR1869	

SIZE A2

Title   AMS-4171
4 PORT CHANGE-OVER
VIDEO+AUDIO RELAY MODULE

DRAWN   K.N.
ENG.APR.
CHECKED
SCALE   N.T.S.
Revision: 3
Date: 29-Jun-2010

Drawing No.   805264

Sheet 1 of 3

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+5V

C18
100uF

+ C17
1uF

U4
O G G
G
I
G G
n.c.n.c.
LM78L05ACM

1
2
3
4
8
7
6
5

+12V

+ C16
1uF

+12V

+ C15
100uF

+ C14
1uF

U3
LM317S
O
O
Adj
I

2
4
3

R28
255R

R27
2K2

+ C13
1uF

+ C12
470uF

+ C11
470uF

D11
S1B
1   2

F1
4R7
1   3

FL1
1

AC-1

D12
S1B
1   2

F2
4R7
1

FL2
3
1

AC-2

D13
S1B
1   2

F3
4R7
1   3

FL3
1

AC-3

D14
S1B
1   2

F4
4R7
1

FL4
1

AC-4

1 07-06-2007
2 22-08-2008 ECR1868
3 25-08-2008 ECR1869

DRAWN   K.N.
CHECKED
ENG. APP.
Revision: 3
Date: 29-Jun-2010

IRT

SIZE
A3

Title   AMS-4171
Power Supply

SCALE
N.T.S.

Drawing No.   805264

Sheet
2 of 3

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ARTARMON NSW AUSTRALIA 2064

SMU-4000

SNMP CPU Sub-Module

ASSEMBLY 804857

1J3

+5V   C6
6   2 | 1
5   100nF
4PAD4
3   13A   TX
2
1   13B   RX

1J2
10
9
8PTA1
7PTA0   SELECT AUDIO B   SELECT AUDIO B
6PTA3
5PTA2
4PTA4
3PTA5   SELECT INPUT B   SET (VIDEO B)
2PTA6
1PTA7

1J1
10
9
8PTB6
7PTB7
6PTB4   nLOCAL CONTROL ACTIVE   LOC.ACTIVE
5PTB5
4PTB2   nLOCAL CONTROL SELECTED   REM/LOC
3PTB3
2PTB0   nINPUT "A" SELECTED   AUDIO TALLY
1PTB1   nINPUT "A" SELECTED   VIDEO TALLY