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IRT Eurocard

Type AAP-3190

Stereo Monitoring Amplifier

Designed and manufactured in Australia

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

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Type AAP-3190

Stereo Monitoring Amplifier

Instruction Book

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This instruction book applies to units later than S/N 9700000.

General Description

General

The AAP-3190 has been designed to fulfil the role of a general-purpose audio monitoring amplifier for the broadcast industry.

Most monitoring applications require only low audio power levels, but high quality performance in the smallest convenient packaging. The Eurocard format is ideal for this use as it allows these monitoring amplifiers to be positioned in the same frame as other modules such as audio distribution amplifiers and switchers.

The front panel of the unit features two LED bargraph displays with VU drivers for visual indication of input levels. These may be switched to indicate Left + Right and Left - Right so that the phase of a stereo signal may be checked. This allows easy monitoring of phase throughout the audio chain to ensure that phase reversals do not result in loss of audio in mono recordings or transmission.

The AAP-3190 is provided with links for matching the gain to input level so that a wide variety of source levels may be accommodated.

The front panel volume control may be disabled and remote control exercised by a single potentiometer located in a convenient position.

The AAP-3190 is suitable for mounting in IRT 1 RU or 3 RU Eurocard chassis. The maximum number of AAP-3190's per frame may be limited by PSU capability and the desired output operating level.

Uses:

- **Phase & level monitoring in distribution chain.**
- **Edit suites audio monitoring.**
- **Headphone monitoring for live recording.**
- **O.B. van audio monitoring.**
- **Headphone amp for multilingual conferences.**

Standard features:

- **Switchable level or phase display (L+R & L-R).**
- **Remote or front panel volume controls.**
- **Input gain adjustable to +6, +12, or +18 dB.**
- **Maximum volume pre-set.**

Equipment provided:

AAP-3190 Stereo monitoring amplifier.
RB-3190 Rear assembly

Accessories available: -

FR-700 Eurocard module mounting frame	Mounts up to 12 Eurocard modules and one PT-700 Dual AC power supply side by side in 134 mm of standard rack space (3 Rack Units).
FR-722 1 RU chassis conversion/PSU	Converts Eurocards to a 1 rack unit format. The FR-722 can be fitted with either one or two Eurocards in a horizontal side by side format. A single AC power supply is included to power the cards.

TME-6 Eurocard extender board.

Instruction Book.

Technical Specifications
IRT Eurocard module
Type AAP-3190

Audio inputs:

Number	1 x stereo.
Type	Balanced, transformerless.
Input impedance	10 KΩ.
Maximum input level	
Connectors	Phoenix plug in screw terminals. Type MC 1.5/3-ST-3.81.

Control input:

Number	1 x External stereo volume control.
Control component required	Potentiometer - 5 KΩ linear.
Format	DC control 0 - 12 V.
Connector	4 pin IDC.

Output:

Number	1 x stereo loudspeaker level.
Output power	4 W + 4 W (RMS continuous).
Minimum load impedance	8 Ω.
Connector	4 way Phoenix plug in screw terminal. Type MC 1.5/4-ST-3.81.

Performance:

Gain	Internal links for a maximum gain of + 0, + 4 or +8 dB.
Frequency response	±1 dB for 20 Hz to 20 KHz.
Harmonic distortion	< 0.2% 20 Hz to 20 KHz at +4 dBu.
Noise	<-80 dB, Ref. +8 dBu 20 Hz to 20 KHz.
Crosstalk between channels	<-45 dB 20 Hz to 20 KHz.
Power Requirements	28 Vac CT (14-0-14) or ± 16V DC.
Power consumption	<30 VA. (Maximum number of AAP-3190's per frame may be limited by PSU capability.)

Other:

Temperature range		0 - 45° C ambient
Mechanical		Suitable for mounting in IRT 19" rack chassis types FR-700 & FR-722 with input output and power connections on the rear panel
Finish:	Front panel	Grey enamel, silk-screened 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

Internal Adjustments

The following adjustable resistors are factory set and should not be adjusted unless a component has been changed. They are not 'operational' controls. Before adjusting any of these controls allow time for the module to reach temperature stability.

RV 1 & RV 2 are balance controls and are adjusted to maximise the common mode rejection of the input circuits.

Configuration

Normal stereo:
This is the factory setting. Links LK 1 & LK 4 are installed and links LK 2 & LK 3 are open.

Left channel mono:
In this setting the left channel input is fed to both output circuits. Links LK 1, LK 2 & LK 3 are installed and LK 4 is open.

Right channel mono:
In this setting the left channel input is fed to both output circuits. Links LK 4, LK 2 & LK 3 are installed and LK 1 is open.

Left plus right mono:
In this setting the left and right channel inputs are mixed and fed to both output circuits. Links LK 1, LK 2, LK 3 & LK 4 are installed.

Display zero:
Links LK 5 and LK 6 set the channel gain prior to the display driver and may therefore be used to set the 0 VU setting for the display. Positions are provided on each channel for 0 VU = -4, 0 or +4 VU.

Remote gain:
The factory configuration enables the front panel gain control. If remote control of gain is required, you must isolate the front panel control by removing LK 7.
The remote gain controls both channels equally and simultaneously.

The configuration for a remote gain control is shown on diagram 803907 sheet 2. IRT does not provide these components, but they are available from any good retail electronics components shop and may be mounted on any suitable panel.

The potentiometer should be approximately 5 K Ohms and should have a linear characteristic.
The capacitor C 54 is included to minimise this effect and its value may be increased if desired. A large value will, however, cause a slight lag in the volume response of the gain circuit.

Remote control is via a DC control voltage and therefore stringent shielding is not necessary. However, if the control is to be located more than 10 metres from the amplifier a two-core cable with overall shield should be used to minimise noise pickup that may result in unwanted signal level fluctuations.

Installation

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.

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.

Audio:

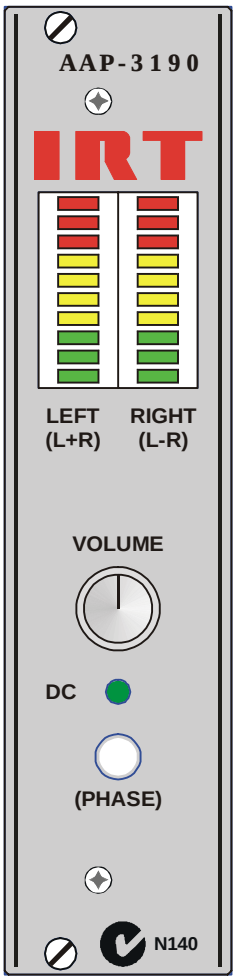
For mono operation it is usual to connect the input audio cable to the Left input pins. For stereo connect the Left input cable to the Left input and the Right input audio cable to the Right input.

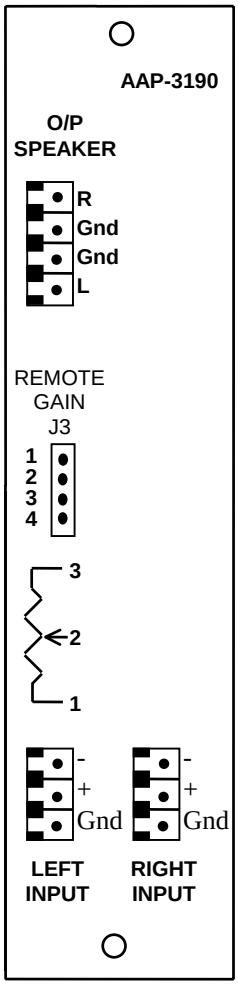
If input termination is required then termination resistors should be fitted to the input sockets on the rear assembly.

Connect as many outputs as required. Remember for stereo operation to observe the polarity markings on the rear assembly.

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.





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.

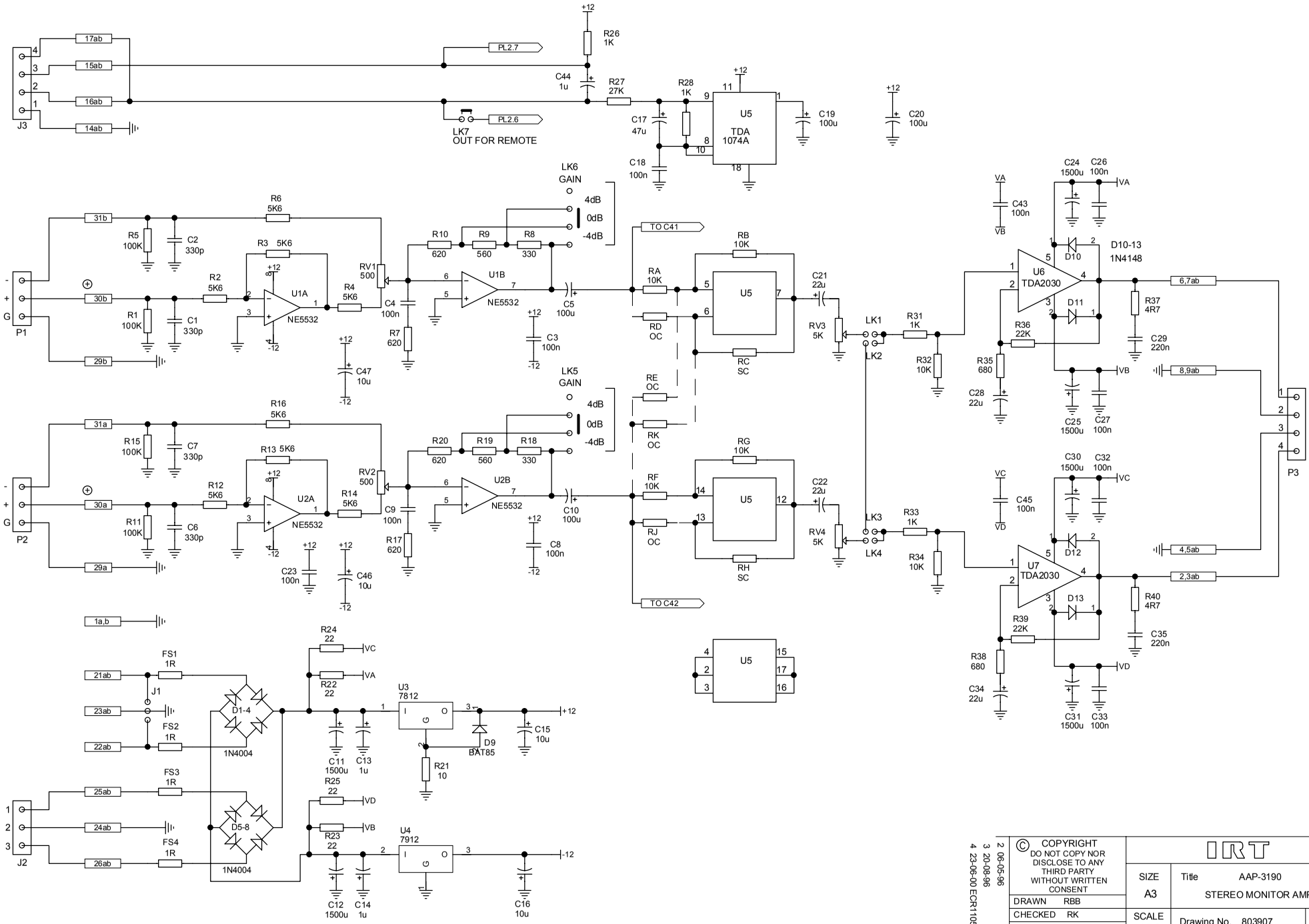
The equipment should be returned **to the agent who originally supplied the equipment** or, where this is not possible, to IRT direct as follows.

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
803907	1	AAP-3190 main circuit schematic.
803907	2	AAP-3190 display control & front panel display.



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4	23-06-00 ECR1105

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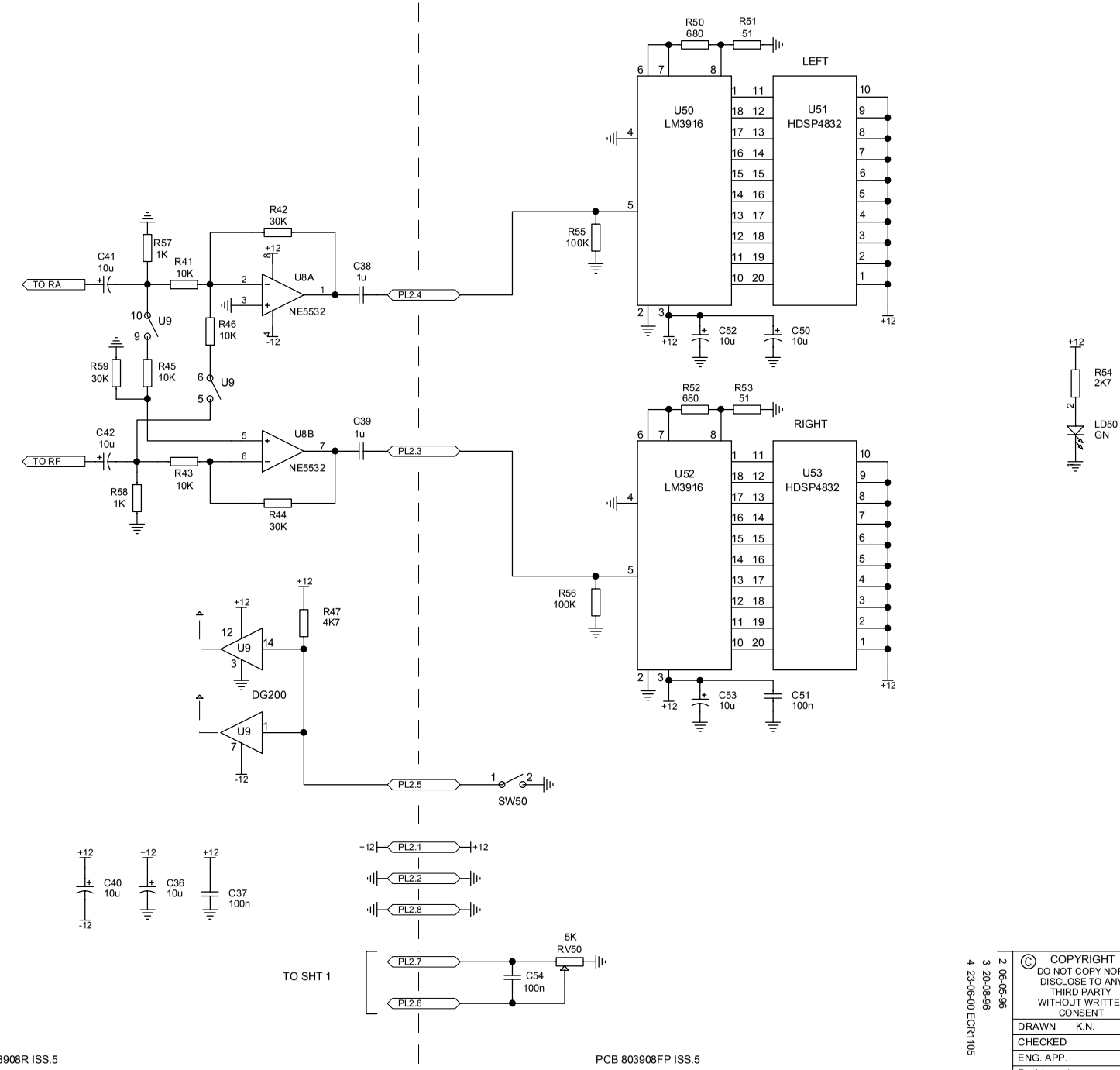
ENG. APP.		Sheet 1 of 2
Revision: 4	IRT Electronics Pty. Ltd. ARTARMON NSW AUSTRALIA 2064	
Date: 5-Oct-2001		



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PCB 803908FP ISS.5

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3	20-08-96
4	23-06-00 ECR1105

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ENG. APP.		
SCALE N.T.S.	Drawing No. 803907	Sheet 2 of 2
Revision: 4		
Date: 5-Oct-2001		

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