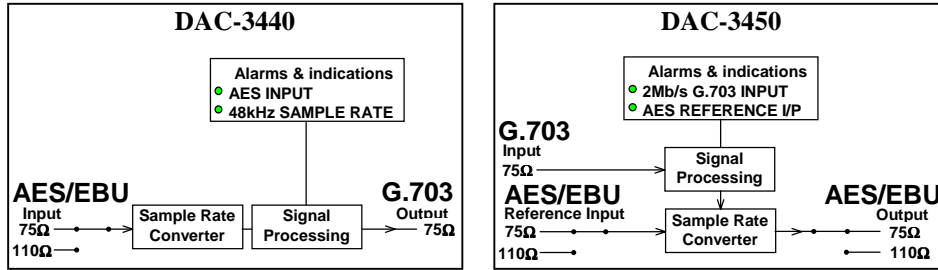


### Functional Block Diagram:



### Features:

- Conversion of AES/EBU audio to 2Mb/s G.703 for transport via telecom circuits.
- Choice of 75Ω unbalanced or 110Ω balanced AES/EBU line connections.
- 48 kHz 20 bit default sample rate, 25 – 55 kHz rates supported.
- Optional external AES/EBU reference input for rates other than 48 kHz.
- Allows Channel (C) or User (U) data to be conveyed.
- IRT Eurocard format.



### General:

The DAC-3440, together with the DAC 3450, forms a transmitter/receiver system, which is designed to allow an AES/EBU digital audio signal to be distributed via the phone network.

The DAC-3440 converts an AES/EBU digital audio signal into a non-framed G.703 compatible signal.

The DAC-3440 combines the 20 bit audio data with either C data or U data into an output stream at 2.048 Mb/s. This stream is then output as a standard G.703 HDB3 encoded 75Ω unframed signal.

The DAC-3450 converts a G.703 signal, whose content is formatted as per the output of the DAC-3440, to an AES/EBU data stream. The receiver obtains synchronism with the incoming stream and then separates the audio data from the combined C (or U) data.

The DAC-3450 allows a local reference AES/EBU signal to be input for rate synchronization of the output. With no reference signal present, output rate is automatically set to 48 kHz.

The system can handle mono or stereo 20 bit AES/EBU audio at any rate from 25 KHz to 55 kHz, although it is designed for a nominal 48 kHz.

The system also allows either the Channel (C) or User (U) data to be conveyed.

Front panel LEDs indicate when an AES/EBU signal is present and when the input AES/EBU signal sample rate is 48 kHz on the DAC-3440, and when a valid 2.048 Mb/s G.703 input signal is present and when a valid AES/EBU reference signal is applied to the DAC-3450.

A relay output is provided on each of the rear assemblies for remote status indication for when a valid AES/EBU signal is present or invalid.

The DAC-3440 is fabricated in IRT's standard Eurocard format and may be housed in a variety of IRT Eurocard frames alongside other standard modules.

# DAC-3440/DAC-3450 Technical Specifications

(Preliminary)

## DAC-3440:

### Input:

Input Level	AES/EBU (75Ω unbalanced or 110Ω balanced) 200 mVp-p minimum.
Format	AES3-1992 standard.
Sample Rate	25kHz to 55kHz
Input Cable Length	>500m 75Ω (Belden 8281) >200m 110Ω (AES digital high quality shielded pair)

### Output:

Impedance	2.048 Mb/s G.703 75Ω unbalanced terminating.
Format	CCITT G.703 compliant.

## DAC-3450:

### Input:

Impedance	2.048 Mb/s G.703 75Ω unbalanced terminating.
Format	CCITT G.703 compliant.

### Reference Input:

Input Level	AES/EBU (75Ω unbalanced or 110Ω balanced) 200 mVp-p minimum.
Format	AES3-1992 standard.
Sample Rate	25kHz to 55kHz
Input Cable Length	>500m 75Ω (Belden 8281) >200m 110Ω (AES digital high quality shielded pair)

### Output:

Format	AES/EBU (75Ω unbalanced or 110Ω balanced) AES3-1992 standard.
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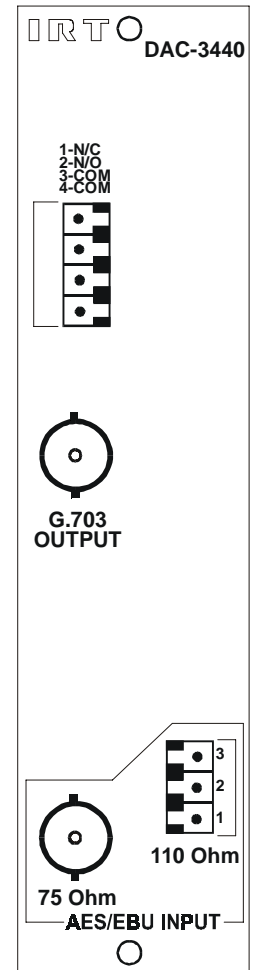
### System Performance (End to End):

Dynamic Range	120 dB (20Hz to 20kHz, -60dB input)
THD + N	< -88 dB (20Hz to 20kHz, full scale input) (Fin <sup>1</sup> & Fout <sup>2</sup> between 25 and 55kHz)
	< -100 dB (1kHz, full scale input ) (Fin <sup>1</sup> & Fout <sup>2</sup> between 34 and 55kHz)
	< -94 dB (10kHz, full scale input) (Fin <sup>1</sup> & Fout <sup>2</sup> between 34 and 55kHz)
Output signal rise and fall times	<20 nS
Frequency Response	±0.05 dB 20Hz to 20kHz.

(Notes: 1. Fin = sample rate of AES/EBU input to DAC-3440;  
2. Fout = sample rate of AES/EBU output from DAC-3450)

### Other:

Power requirement per unit	28 Vac CT (14-0-14) or ± 16 Vdc. (3.5VA)
Temperature range	0 - 50° C ambient.
Connectors	Unbalanced BNC. Balanced Removable screw terminal blocks.
Mechanical	Suitable for mounting in IRT 19" rack chassis with input output and power connections on the rear panel.
Finish:	Front panel Grey background, silk-screened black lettering & red IRT logo. 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



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

Detailed specifications available from:

Manufacturer:

**IRT Electronics Pty Ltd**

26 Hotham Parade

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