

NC200A/IC

NICAM Encoder

NICAM 728 Encoder/QPSK Modulator



NC200A/IC is an Encoder/QPSK Modulator for NICAM 728 System B/G, D/K and I. The Encoder is mainly used in broadcasting networks, but also used for CATV and in laboratories. The output is a QPSK modulated carrier at intercarrier frequency, locked to the bit-rate.

The NC200A/IC converts analogue stereo sound via A/D conversion of two sound (stereo) channels, Transcoding of digital sound signals to NICAM format and QPSK modulation. Options include a 2-channel version and an Encoder-only version with Data + Clock output.

Key Features

- ⌋ AD conversion of two sound (stereo) channels
- ⌋ Transcoding of digital sound signals to NICAM format
- ⌋ QPSK modulator
- ⌋ Optional Encoder-only version
- ⌋ Optional 2-channel Encoder version

Specifications

Audio Inputs

Nominal level (NICAM test level):	0 dBu (differential inputs)
Impedance:	600 Ohms \pm 1% alt. high impedance
Connector:	XLR, female type

FM Channel Audio Output

Mono Mode:	M1/left channel
Stereo Mode:	(A+B)/2
Gain:	0 dB (sel. +3 dB in stereo mode)
Impedance:	< 1 Ohm, electronically floating output (either side may be grounded)

FM Channel Audio Output (contd.)

Load:	> 600 Ohms
Frequency Response:	within \pm 0.1 dB, DC -20 kHz
Overload level:	
- Balanced:	> +24 dBu
- Side grounded:	> +18 dBu
Noise:	< -92 dBu rms 20 Hz-20 kHz
Distortion:	< 0.005%
Crosstalk:	< -100 dB (M2 to M1)
Connector:	XLR, male type

Specifications (contd.)

A/D Conversion

Pre-emphasis:	CCITT J.17 (analogue)
Digital Overload Level System BG/DK:	+22 dB at 400 Hz
Digital Overload Level System I:	+24.3 dB at 400 Hz
Sampling Frequency:	4096 kHz
Resolution:	16 bits (delta/sigma)
Frequency Response:	
- 20 Hz-13.75 kHz:	within ± 0.2 dB (rel. ideal CCITT J.17)
- 14 kHz:	-0.5 dB
- 14.75 kHz:	-3 dB
- >17.3 kHz:	< -65 dB
Crosstalk:	< -90 dB at 1 kHz
Distortion THD+N:	0.01% at 1kHz max input (typical)
NICAM Encoded Signal:	0.04% (typical)
Noise:	-70 dB rel. 0 dBu (typical)

Stereo/Dual Mono Mode Switching Input

Stereo:	Logic '1'
Mono:	Logic '0'
Connector:	3.5mm jack
Electrical Interface:	CMOS input with 10kOhms pull-up resistor

Data + Clock Output (Optional)

Logic Levels:	± 2.5 V into 75 Ohms load
Impedance:	75 Ohms, $\pm 10\%$
Polarity:	Positive voltage, logic 'one'
Phasing:	Data changes on negative clock transitions
Connectors:	BNC

NICAM Intercarrier Signal Output

Frequency - System BG/DK:	5.850 MHz
Frequency - System I:	6.552 MHz
Impedance:	75 Ohms
Subcarrier Accuracy:	± 2 ppm when locked to internal reference
Spectrum Shape - System BG/DK:	Roll-off 0.4
Spectrum Shape - System I:	Roll-off 1.0
Demodulated Response:	eye height > 85%
Harmonics and Spurious Noise:	< -50 dB rel. NICAM carrier level
Connector:	BNC

Power Supply

Voltage:	100V – 264V AC
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Frequency Range:	48Hz – 64Hz
Connector:	IEC 320
Typical Power Consumption:	15W (typical)

Chassis

Type:	19" rack-mounting
Dimensions:	44mm (h) x 482mm (w) x 360mm (d)
Weight:	4 kg (typical)

Environmental

Operating Temperature:	+5° - 50°
Humidity:	10% - 85% non-condensing

Specifications subject to change without notice
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