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 ±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: within ±0.1 dB,
- Response: 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**:
  - NICAM 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, ± 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
- **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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