

SONY

Professional DAT Recorder
PCM-R300



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The development of the DAT format by Sony in 1991 was a major breakthrough in recording technology. It introduced digital recording to many areas of professional audio and soon became an established recording standard for broadcast, post production and mastering applications.

The continuing development of Sony DAT recorders has played a pivotal role in the wide ranging acceptance of this format. The latest addition to this range is the Sony PCM-R300.

With its Super Bit Mapping (SBM) technology, the PCM-R300 optimizes the performance of analogue mixing consoles, while its IEC 958 Type II SP-DIF I/O is compatible with the growing number of digitally-based consoles.

The PCM-R300 is packed with features such as error rate display and A/D and D/A monitoring modes and, as a professional machine, SCMS copy management is defeatable.



High resolution converters deliver superb sound quality

The audio performance of any digital tape recorder is almost entirely dependent on the quality of the A/D and D/A conversion at its inputs and outputs. It is in these converters that the signal is most likely to be degraded. Sony has fitted the PCM-R300 with 20-bit delta-sigma A/D and 1-bit pulse D/A converter technology to ensure stable, highly linear performance with excellent signal-to-noise ratio.

SBM provides 20-bit signal quality from 16 bits

The DAT format uses 16-bit format recording. The signal from the analogue to digital converters is processed by the unique Sony SBM (Super Bit Mapping) circuitry that uses advanced noise shaping techniques to achieve a dynamic range of a 20-bit signal with only 16 bits. This advantage is preserved digitally, so a DAT recording made on an SBM-equipped machine produces a clearer sound on a subsequent CD master.

All three sampling rates supported, including long play

In normal playback mode the PCM-R300 supports sampling rates of 44.1 kHz and 48 kHz, selectable from the front panel. The 32 kHz long-play format allows up to four hours recording to be made on a standard two-hour DAT cassette. The signal is sampled using 12-bit, non-linear quantisation.

Advanced error correction

The double-encoded Reed-Solomon error correction circuitry is able to correct or conceal many of the errors caused by damaged tapes or poorly recorded material from other machines. The PCM-R300 features an error-rate display that makes it easy to see when head cleaning is due or if a poor quality tape is being used.

ID control

All the controls necessary to record Start ID, Stop ID and Skip ID are available on the panel. They are duplicated on the standard, infra-red RM-D757 Remote Control Unit.

Reliable mechanism

The front loading mechanism of the PCM-R300 uses a 2 head dual motor design with an advanced servo control system for high reliability and precise tape handling.

Menu system

The PCM-R300 uses a menu system with a large multicolour display to facilitate set up of the following features:

- Copy protect bit and current tape status
- Automatic record mute
- Automatic start ID writing
- DAT duplication – ID copy
- CD-DAT duplication – ID copy
- Display options
- Auto Track Numbering, with first track number selection (1-99)
- Digital interface signal format check
- Hours meter – shows total play / record time for maintenance purposes

The display shows tape time, recording time, tape remaining time and also provides comprehensive input level metering.

Specifications

Transport

Recording system	2-channel Digital Audio Tape (DAT), rotary head
Recording time	standard 120 min, long play 240 min, using a Sony PDP-124 cassette
Tape speed	standard mode 8.15 mm/s, long play mode 4.075 mm/s
Transfer rate	2.4 Mb/s

Digital inputs and outputs

Format	IEC 958 Type II, SPDIF
Inputs	
coaxial	phono, 75 ohms
optical	optical jack
lock range	±0.1%
Outputs	
coaxial	phono, 75 ohms
optical	optical jack, wavelength 660 nm

Analogue inputs and outputs

Line inputs	+8 dBu, impedance 47 kohms, phono x 2
Outputs	
line	+8 dBu, impedance 470 ohms, phono x 2
phones	impedance 32 ohms, 1/4-inch jack socket

Audio performance (SBM off)

Frequency response	
standard play	20 Hz – 20 kHz ±0.5 dB
long play	20 Hz – 14.5 kHz ±0.5 dB
Signal to noise	>90 dB (IEC A weighted)
Total harmonic distortion	<0.05% at 1 kHz
Wow and flutter	below measurable limits

General

Power requirements	230 V AC 50/60 Hz
Power consumption	30 W
Mass	5.0 kg
Dimensions	432(W) x 122(H) x 325(D) mm*

Supplied accessories

Infra-red remote control unit	RM-D757
Rack mounting kit	3U
Power requirements	2 AA batteries, AC Power cable
Literature	Operating manual

* without rack mount kit

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Design and specifications subject to change without notice

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