Product Information

Model name

PCM-R300

Description

2 channel DAT recorder

Product concept & Target Application

- Low-cost "PCM" series
- Master recorder for musicians

Market	Customer Requirement	PCM-R300	PCM-R500	PCM-R700	PCM-7000 series
Audio for Video	TC Chase				✓
High-end Audio application	Confidential Monitor			✓	
Recording studio	4.D.D.reliability Pro interface		✓	✓	
Musician (Private studio)	SBM 44.1 rec SCMS free	✓	✓	✓	

Features & Benefits

- **The SBM Recording Function achieves an S/N ratio equivalent to that of a 20-bit system with 1-bit type Pulse AD converter**
  Allows analog source recordings to be made at near 20-bit quality, which will then playback on any standard DAT machine.

- **Offers Start ID, End ID, Skip ID control on front panel.**
  Makes it easier to find and edit ID sets.

- **Setup menu for preference section-set ID6 (SCMS), level sync threshold, CD-Q decode, Start ID decode and more.**
  Provides more user flexibility and convenience, sets up-for use in various applications.

- **Error rate display can be selected on the display mode.**
  Allows more accurate troubleshooting of tape / machine heads, can be checked against other benchmarks.

- **Coaxial and optical digital interface.**
  Flexible digital interface for compatibility with both consumer + semi-pro gear.

- **A/D and D/A monitoring modes.**
  Allows user to set levels without engaging heads and causing excessive head / tape wear. Allows user to use A/D front end (20Bit / SBM) for feed into other digital equipment (PC,CDR,etc.).

- **Recording and playback in Long play mode.**
  Useful for archiving or recording long-length program, especially when "highest" fidelity is not required (speech, rehearsal tapes, logging, etc.).

Technical advantage

- **Super Bit Mapping**

Super bit mapping is a process designed to get 20-bit like performance from a 16-bit format like DAT and CD.

It is an intelligent filter process that takes advantage of the human ear's nonlinear frequency response. Since our ears are less sensitive at higher an lower frequency response, the Super bit mapping process uses noise shaping to distribute digital quantization noise in the areas of frequency response where the ears is less likely to perceive it. As a result, SBM process raises the bit-detail and increases the potential auditory dynamic range of music to be recorded on a DAT machine.

Same as PCM-R500 / 700, PCM-R300 also employs Super bit mapping. Based on high quality Pulse AD converter which is 64 time oversampling delta-sigma type, and has 20-bit resolution. Super bit mapping utilizes lower 4-bits which is truncated at digital filter in normal digital filtering process.

This all Super bit mapping process is single encoded process. The benefits are applied in recording process so tapes made on DAT recorder with SBM will sound better on machines without SBM.

- **Menu System**

PCM-R300 employs preset menu system for preference section same type as PCM-R500 / 700's (The menu items related DATE and CLOCK are exclusive for R500/700). This allows ideal customize setting for various environment. Follows descriptions are brief explanations of each menu. Customer can enter this preset menu by the "Mode Switch".

1) SET ID6
Selects the copy information to be written on the tape at Analog input recording.
Settings: 00 Copy permitted

10　Copying prohibited
　　　　　　　11　One generation copy only

2) REC MUTE

　　　　　Setting the duration if the blank space created between tracks by the record
　　　　　muting function.

　　　Setting range　0.5 to 9.5 seconds

3) L-SY TH

　　　　　Set the reference input level for automatic writing of start IDs.

　　　　　Setting range　-12 to 60 dB (1dB step)

4) L-SY BK

　　　　　Set the length of time that the input signal must remain below the reference
　　　　　level before automatic writing of Start ID s begin.

　　　　　Setting range　1 to 10 seconds

5) IEC S-ID

　　　　　Selects the automatic start-ID writing by the start-ID signal from digital coaxial
　　　　　input (from another DAT).

6) IEC CD-Q

　　　　　Selects the automatic start-ID writing by the Q-code signal from digital coaxial
　　　　　input (from a CD Player).

7) SKIPPLAY

　　　　　Selects the skip play on / off.

8) P-TMDISP

　　　　　Specifies whether the track playing time shows on the display or not at the
　　　　　mode button is pressed.

9) FIRST

　　　　　Allows renumbering or setting the track number of first track.

　　　　　Setting range: 1 to 99

10) TAPE ID6

　　　　　Status checker of the copy information of the inserted tape.

11) DIF

　　　　　Digital signal format checker of input signals.

　　　　　Display shows the format of the digital input signal from the connector selected
　　　　　by the input switch.

12) Hour

　　　　　Hours meter

Setting range: 0 to 9999

13) INIT SET

Reset all the menu settings to factory settings.

● **Error rate counter**

In PCM-R300, error rate display is one of the display mode which can be incremented by " Mode" switch same as preset menu function.

The counter shows the error rate of the audio signal being played back for both A and B playback head. The four digits on the right and left show the error rate detected on the A head and B head respectively.

Actually, the origin of this error rate counter functions are error checker for quality check in production or service department in each manufacturer. Still the each company's standard of the figure is not unified. This function is get popularity in current market, but we have to treat this counter as the function to know the maintenance timing. Follows are the one of standard of PCM-R300's figure.

Ex.

0000	No Problem. Ideal condition!
0001~0400	There are some damaged portion in part on the tape.
0400~	Dirty Head. The head must be cleaned with Cleaning tape. or continuous damage of the tape.

PCM-R500 / 700 also equipped error rate counter as one of service mode. But, because of the design of internal software, this error rate counter in PCM-R500 / 700 can not activate as stand alone function from the service mode.

So this information is concealed to the public. If you need more information about the error rate counter of PCM-R500 / 700, Please access Pro Audio Service Home Page. The ULR is follows.

http://43.134.48.16/audioweb/DAT/errate.html

Specifications

Digital audio signal format

System	Rotary head DAT recording
Tape	Digital audio tape
Modulation	8 to 10 Modulation
Digital audio channel	2 channels stereo
Sampling frequency	48kHz,44.1kHz,32kHz
Quantization	Standard : 16bit linear
	Long-play : 12bit non-linear
Error correction	Double -encoded Reed Solomon code
Drum Rotation	Standard : 2,000r.p.m
	Long-play : 1,000r.p.m

Audio Characteristics

Frequency response	Standard: 20~20,000Hz (+-0.5dB)
	Long-play: 20~14,500Hz(+-0.5dB)
S/N ratio	90dB or more
	(20kHz LPF, A-Weight filter ON)
Total harmonic distortion	Standard: 0.05% or less
	Long-play: 0.3% or less
	(1kHz, Reference level 20kHz LPF ON)
Wow and flutter	Below measurable limit (+-0.001% W.Peak)

Input / Out puts

Analog I/O	Unbalanced (RCA Phono, -12dBs)
Digital I/O	Optical jack
	Coaxial (RCA Phono)

General

Power requirement	AC120V,60Hz (for the U.S. and Canada)
	AC220 to 230V,50/60Hz (for Europe)
Power consumption	30W
Dimensions(w/h/d)	Approx. 432 x 122 x 325mm
Weight	Approx. 5.0 kg

Supplied Accessories

      Wireless remote commander RM-D757 x 1

      AC power code x 1

      Screws(M5 x 12) x 4

      Decorative washers x 4

      Operation manual x 1

      Rack mount adapters x 2