

# WorldNet Rio

**WorldNet Rio** is a full duplex, multi-channel, multi-algorithm audio codec incorporating for the first time both Standard and Enhanced apt-X™. WorldNet Rio has been designed to deliver high quality audio for inter-studio networking, remote/outside broadcasts and STL applications achieved by utilising permanent digital links such as T1, E1, Satellite or Microwave. WorldNet Rio is suitable for broadcast AM, FM, DAB and other professional audio environments.

The apt-X™ algorithm is in daily use throughout the world delivering superior audio quality over countless networks and is the defacto standard across the professional audio industry. apt-X™ is a real time digital audio data reduction system that compresses audio samples by a factor of 4:1 with no perceptible audible degradation and negligible coding delay. Offering resilience to multiple coding, apt-X™ overcomes the problems associated with multiple psycho-acoustic passes of audio in the broadcast chain. Enhanced apt-X™ offers 16, 20 and 24-bit operation and increases both stereo and mono audio channel performance. It also offers a reduction in coding delay, improvements in audio quality and increased dynamic range.



## **WorldNet Rio offers key benefits for broadcast audio networking :**

- Available audio bandwidths from 10Hz through to 22.5kHz with corresponding synchronous bit rates from 56kbit/s to 576kbit/s
- Incorporates both Standard and Enhanced apt-X™ thus ensuring backward compatibility with previous APT products
- Integral back-up feature to assure program continuity, in the event of a failure of the main network
- Analog and AES/EBU I/O capability on a standard XLR-3 audio interface
- Auxiliary data to 9600 Baud for additional control and data transmission, such as RDS
- Operational setup and monitoring through front panel controls and display
- 5 status alarms
- 4 opto-coupled I/PS for remote status
- SMPTE timecode implemented through standard XLR-3 interfaces

# WorldNet Rio



## Technical Specification

### Physical

Size	1U x 19" rack mount (44mm x 482mm x 255mm)
Weight	2.25kg
Power Supply	100-250VAC, 50-60Hz
Power Consumption	<15W
Environmental	0°C to 55°C , 95% humidity

### Interfaces

DTE Interfaces Port 1 & 2	X.21/V.35, 15 way D type, RS422 level
Data Rates	56-576kbit/s
Aux. Data	9 Way D type, RS232 level
Data Rates	1200, 2400, 4800, 9600 Baud
Digital Operation	Audio I/O, AES-3, Balanced XLR-3 Impedance 110 $\Omega$ Digital Reference Input, XLR-3
Analog Operation	Balanced XLR-3 Input Impedance 600 $\Omega$ /10k $\Omega$ Output Impedance <50 $\Omega$ /600 $\Omega$
Alarms	15 Way D type
Timecode I/O	XLR-3
Opto-coupler	15 Way D type

### Audio

Sampling Frequencies:	
Digital Operation	32kHz, 44.1kHz, 48kHz
Analog Operation	8kHz-48kHz
Sample Rate Convertor	3:1 (with bypass modes)
Audio Bandwidth:	
Digital Operation	10Hz through to 22.5kHz mono & stereo
Analog Operation	10Hz through to 22.5kHz mono & stereo
Source Coding	Standard and Enhanced apt-X™
Compression Ratio	4:1
Coding Delay:	
Standard apt-X™	2.5ms @ 48kHz
Enhanced apt-X™	2.0ms @ 48kHz
Dynamic Range	16-bit > 85dB, 20-bit > 105dB, 24-bit > 110dB
Phase Response	Linear : DC to $F_s/2$
Pass Band Ripple	<-0.2dB

NB: All specifications are subject to change without notice.  
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