



MRT

Multiple Receiver Terminal

HIGHLIGHTS

- ▶ Low cost per receiver
- ▶ Receives up to 12 SCPC satellite carriers and interfaces them to the Internet
- ▶ Compact 9RU design accommodates up to 12 receivers per MRT and 48 receivers per rack
- ▶ Variable data rates from 64 kbps to 8.448 Mbps per receiver
- ▶ Hot swappable receiver cards
- ▶ Hot swappable power supplies
- ▶ Uses established industry-standard Radyne ComStream DBR2000 receiver cards
- ▶ Integrated L-Band RF distribution system

OVERVIEW

The Radyne ComStream Multiple Receiver Terminal (MRT) is your solution for flexible reception of multiple back channel transmissions. Combined with Radyne ComStream's DM240 Digital Video Modulator located at a hub site, and with multiple Radyne ComStream IPSat Remote Terminals in the field, you can now provide low-cost, extremely reliable Internet access to a large number of clients.

UNPARALLELED FLEXIBILITY

The flexibility of this professional receiver terminal enables you to setup numerous backlink channels at variable rates from 64kbps to 8.448 Mbps. User-selectable Sequential, Viterbi only, or DVB-compliant concatenated Viterbi and Reed-Solomon error correction coding gives you the power to optimize your link budget and maintain compatibility with most existing systems.

INTERNET BACKLINK OPERATION

The MRT can be factory-configured with a standard RS-422 synchronous interface for interacing to the WAN port of an external router or may be configured with an integrated TinyRouter with 10 Base T Ethernet Interface. While the RS422 interface will pass transparent data from a wide range of satellite modems, the integrated router is designed to receive data streams from Radyne ComStream's IPSat terminal.



RELIABILITY

The MRT has redundant power supplies with fault indicators and hot swap capability. This allows you to detect a power supply failure and then swap out a faulty supply without interrupting service to any of the users. The MRT also allows for the removal of individual failed receiver cards and the insertion of new cards without interrupting service to any of the other users.

PROVEN RADYNE COMSTREAM PERFORMANCE

The Multiple Receiver Terminal gives you the proven reliability of Radyne Comstream. Our digital networks are in operation in over 80 countries, with over 1.5 million demodulators operational worldwide. The world's largest information provider, Reuters Limited, has used Radyne Comstream data broadcast systems since 1988. In addition, the Shanghai Securities Exchange in China and two of the largest European PTTs as well as other information service providers in Europe, Latin America, North America and the Asia-Pacific, have chosen Radyne Comstream products for their data broadcast networks.



MRT Multiple Receiver Terminal

SPECIFICATIONS

GENERAL

Modulation	QPSK or BPSK
Data Rates	Variable in 1 bps steps from 64 kbps to 8.448 Mbps
Symbol Rates	64 kspss to 8.448 Mspss
FEC	Radyne ComStream Sequential rate 1/2 or 3/4 Concatenated Reed-Solomon and Viterbi Viterbi rates 1/2, 2/3, 3/4, 5/6, 7/8 Reed-Solomon rates 188/204 (DVB) or 187/204 (non-DVB)
Input Frequency	950 to 1750 MHz
Input Signal Dynamic Range	-75 to -20 dBm
L-Band Distribution	
Gain	-3 dB
L-Band Test Output	
Gain	5 dB
Frequency Selection	Synthesized in 1 kHz steps
Input Level	-10 dBm composite maximum
Noise Figure	10 dB max.
Input Impedance	75 ohms
Return Loss	>9 dB
AFC Range	±1.5 MHz

Initial Acquisition Time (3.3 Mbps QPSK at 8 dB E_b/N_0):

Frequency Offset	Acquisition Time
0 Hz	<1 sec
±125 kHz	<3 sec
±1 MHz	<75 sec

BER Performance for quasi error-free (BER 1×10^{-10}) performance with concatenated coding:

Code Rate	Typical E_b/N_0	Maximum E_b/N_0
1/2	4.0 dB	4.5 dB
2/3	4.5 dB	5.0 dB
3/4	5.0 dB	5.5 dB
5/6	5.5 dB	6.0 dB
7/8	5.9 dB	6.4 dB

Includes 0.5 dB implementation loss through L-band loopback.

Output Interface	RS-422 on a DB-25 female connector
Data Control	Control (C) input accepted but ignored, Indicator (I) output active on decoder in-sync, inactive on Decoder out-of-sync.

MONITOR AND CONTROL

Monitor	Receive carrier offset and signal level, E_b/N_0 , AGC gain factor
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MONITOR AND CONTROL (CONTINUED)

Control	Receive symbol rate, receive synthesizer frequency, receive mod type and code rate, fault reporting
Status	Carrier lock and decoder sync, receive synthesizer faults, demodulator fault summary
Indicators	Green LEDs for Power, Sync and Enable. Red LED for Fault
Rear Panel Interface	RS-232 and RS-485 electrical on DB-9 female connector

ETHERNET ROUTER

Physical Interface	10 Base T on RJ-45 connector per IEEE 802.3
Routing	Up to 256 hosts on LAN IP net
Protocols	TCP, UDP, multicast and unicast, IGMP
Decapsulation	HDLC per RFC 1490
Monitor and Control	Menu based via Telnet, SNMP agent
Latency	1 frame
Buffer	256 frames
Power Supply	Integrated with MRT Demod card

MECHANICAL

Size	40 cm H x 44.2 cm W x 36.6 cm D (15.75 in H x 17.4 in W x 14.4 in D)
Weight	approx. 58 lb.
Mounting	9 RU, rack-mount ears

POWER

Input Voltage (VAC)	90 to 264 VAC, autosensing
Frequency	47 to 63 Hz
Consumption	300 W true RMS power (maximum)

ENVIRONMENTAL

Temperature	0°C to 50°C operating; -20°C to 75°C nonoperating
Humidity	5% to 95% noncondensing, operating; 0% to 99% noncondensing, nonoperating

OUTDOOR EQUIPMENT

Radyne ComStream Ku- or C-band LNBs are recommended to guarantee the specifications quoted here. Ask your Radyne ComStream representative for more information on LNB frequencies and antenna specifications for optimum performance.

CUSTOMER SUPPORT SERVICES

Radyne ComStream offers turnkey solutions with end-to-end design, installation and commissioning services including IP network design, third party application integration, satellite link budget, antenna selection earth station design, system training and equipment installation and test.

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