

MN510 (C-band) MN520 (Ku-band)

MENOS Radio Satellite Interactive Terminal (SIT)

MENOS

Description

The MENOS Radio SIT is one of the terminal types that can be used within the MENOS satellite network environment. The terminal is intended for network members who need to exchange or distribute professional radio content with remote sites in a fast, reliable and efficient way. The Radio terminal also provides high-speed Internet, VPN and VoIP services independently of the availability of terrestrial links.

The core of the Radio SIT is the Multimedia Exchange Unit (MMX), which processes both live audio signals and audio files. The MMX of the SIT exchanges radio content with the MMX of the MENOS hub in any of the following modes:

- live Radio streaming: live audio contribution through bandwidth reservation with guaranteed QoS
- play to air and local play facilities: live streaming from local storage to local device or to remote terminal
- store and forward: Best effort audio file transfers

These exchange sessions are synchronized and activated automatically by the hub's Multimedia Reservation Server (MRS).

The MENOS concept starts with the end-users in mind. The terminals require little maintenance, are easy to install and operate and are configured for specific applications while being made of common building blocks using standardized technologies.

Applications

Radio Contribution and Distribution:

The MENOS Radio SIT can be used to contribute content from a remote station to the MENOS hub where it can be stored in a central repository for distribution or archiving. The Radio SIT can also be used to locally receive and store a signal distributed from the hub's central archive to the remote stations. Users can access the central archive to browse, preview and request content. The store and forward capability allows the contributor/distributor to schedule the exchange of the radio content at a time when the load of the network is lower, thereby saving on the cost of transmission. Depending on the model, up to 4 analog audio stereo input channels (8 mono) and up to 12 analog audio stereo output channels (24 mono) are supported. All available channels can be received and transmitted simultaneously.

IP access services:

As an integrated satellite IP access platform, the MENOS Radio SIT provides an 'always-on' high-bandwidth intranet and internet connection, both for unicast and multicast traffic. Network members also use this connection for capacity reservations, access to the central archive, and VoIP collaboration.

Secure Virtual Network Operation:

Professional users have the ability to create IP VPN connections among several SIT's to allow secured access for exchanging private data. The Virtual Private Networks are implemented by the tunnel mode IPSec Internet standard, encrypting and authenticating the entire IP packet contents for maximal security.

VoIP collaboration channels:

The VoIP collaboration channels enable cost-effective SIT to SIT voice communication and multi-party conferences for daily operations, while consuming very little satellite bandwidth. The embedded Quality of Service (QoS) features ensure high quality VoIP.

Features

- Fully integrated, easy to install turn-key system
- Sat3Play IP broadband access
 - DVB-S2 Constant Coding Modulation Forward Channel
 - MF-TDMA Return Channel
- Two frequency bands supported (Ku / C-band)
- Radio Multimedia Exchange Services (MMX):
 - MPEG-4 HE-AAC v2 coding (max 12 stereo decode channels)
 - Real Time or Store & Forward
 - Automated interface with MRS (Multimedia reservation server)
- Supports IP broadband unicast and multicast applications
- Integrated encryption on sessions and data available
- High speed IP connection with embedded acceleration
- Fully integrated VoIP services
- Quality of Service (QoS) implementation
 - Support of four dynamic QoS traffic classes
 - Support of constant bit rate allocation reservations for VoIP and Radio traffic
- Remote monitoring and diagnostics
- Remote software upgradeable

Related Products And Documents

Other MENOS products

- MN610 and MN620 IP SITs
- MN410 and MN420 TV exchange SITs

Application notes

- MENOS applications – broadband access
- MENOS applications – Real-time Radio exchange



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Specifications – MN510/520

SATELLITE INTERFACE

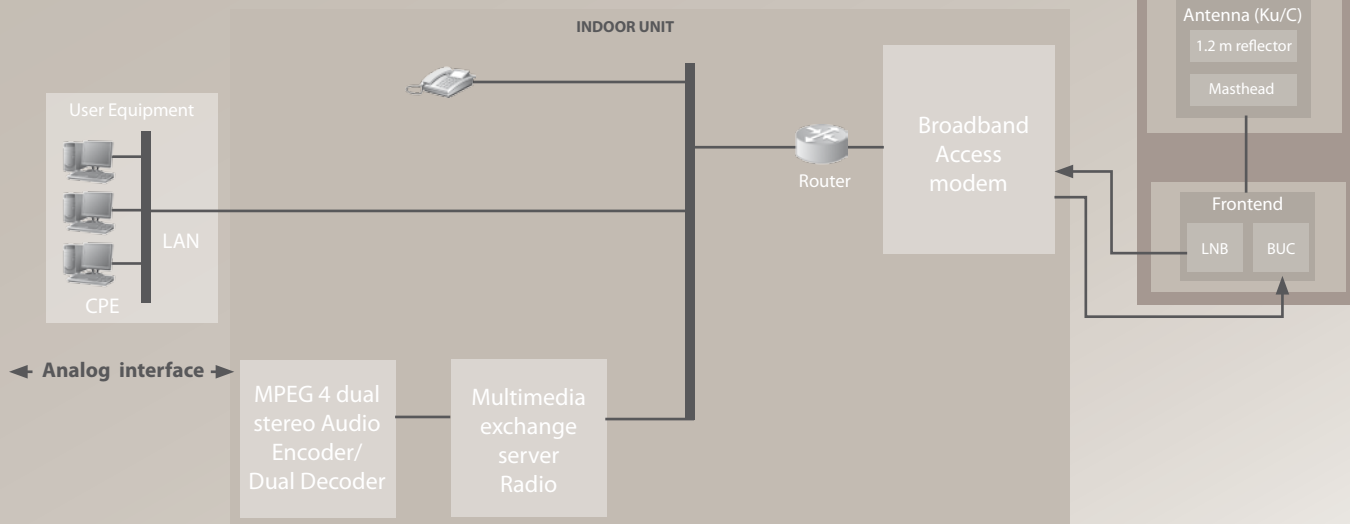
Broadband access system

- Forward Channel:
Modulation : DVB-S2 QPSK/8PSK CCM
Rates : 3 to 30 Mbaud
- Return Channel:
Modulation : 4CPM
Rates: 512 kHz for IP rate of 466 kbps
- Outdoor unit Ku Band (MN520):
TX Frequency : 13.75 to 14.25 GHz
TX Output power : 4 W
RX Frequency: 11.7 - 12.75 GHz (optional 10.7 - 11.8 GHz)
Polarisation : linear (Tx/Rx orthogonal)
Antenna: 1.2m offset
Tx Gain: 43.3 dBi @ 14.3 GHz
Rx Gain: 41.8 dBi @ 12.0 GHz
- Outdoor unit C Band (MN510):
TX Frequency : 5.85 to 6.425 GHz
TX Output power : 5 W
RX Frequency : 3.7 to 4.2 GHz Polarisation: circular (Tx/Rx opposite)
Antenna: 2.4m offset
Tx Gain: 41.95 dBi @ 6.1375 GHz
Rx Gain: 38 dBi @ 3.95 GHz

AUDIO SUBSYSTEM

- Multimedia Exchange Server:
Dual 100 BaseT Ethernet (RJ-45) for traffic
Single 100 BaseT Ethernet (RJ-45) for management
250 GB HDD for local storage of radio content
- Audio Encoder / Decoder:
Single 10/100/1000 BaseT Ethernet (RJ-45) for traffic
Single 10/100 Ethernet (RJ-45) for management
Analog audio I/O:
- 4 stereo or 8 mono I/O channels
- 25-pin female sub-D, twisted pair cables with XLR
Sample rates of 32, 44.1, 48 and 96 kHz
MPEG-4 AAC-HE with 32 kbps / 48 kbps bandwidth
MPEG-TS over AAC audio (IETF RFC 3640)
SMA 2.0 compliant streaming
- SIP phone:
VoIP SIP phone, G.729 codec

IP PERFORMANCE



- IP data Throughput:
Forward : Max. 2 Mbps Unicast, 16 Mbps Multicast
Return : 466 kbps (4CPM2 MODCOD 2)
- Collaboration channel:
1 VoIP channel

STANDARDS AND PROTOCOLS

STANDARDS

EN 301790 (DVB-RCS (partially)), EN 302307 (DVB-S2),
EN 301421 (DVB-S), IEEE 802.3 (10T Ethernet),
IEEE 802.3u (100TX Ethernet), ISO/IEC 13818-1 (MPEG-2)
ISO/IEC 14496-14 (MPEG-4)

ROUTING PROTOCOLS

RFC 768 (UDP), RFC 791 (IP), RFC 792 (ICMP), RFC 793 (TCP),
RFC 826 (ARP), RFC 959 (FTP), RFC 2131 (DHCP)

ENVIRONMENT

- Mechanical - 19" rack
Housing : 60cm W x 80cm H x 80cm D
Weight : - minimum configuration (MN5x0): 100 kg
- maximum configuration (MN5x0/AI-05): 111 kg
- Temperature (indoor unit)
operational : 0 to 40 degC – non condensing
storage : -40 to 70 deg C up to 95% condensing
- Temperature (outdoor unit) : -30 to 55 deg C
- Power Supply : 230V / 6A
- Power consumption : - minimum configuration (MN5x0): 307 Watt
- maximum configuration (MN5x0/AI-05): 515 Watt

ORDERING INFORMATION

MN510: Radio terminal with C Band RF Front End + Antenna (no mount)
MN520: Radio terminal with Ku Band RF Front End + Antenna (no mount)

VARIANTS

MN5x0: 4 mono / 2 stereo channel in / 4 mono / 2 stereo channel out
MN5x0/AI-01: 8 mono / 4 stereo channel in / 8 mono / 4 stereo channel out
MN5x0/AI-03 : 8 mono / 4 stereo channel in / 16 mono / 8 stereo channel out
MN5x0/AI-05 : 8 mono / 4 stereo channel in / 24 mono / 12 stereo channel out
x = 1: C-band
x = 2: Ku band

Options:

AN-01 : non-penetrating mount 1.2 m (Ku-Band)
AN-03 : non-penetrating mount 2.4 m (C-Band)
AL-01 : 2 x 100 m L-band cable
AS-01 : LNB RF range: 10.7 - 11.7 GHz
AS-02 : LNB RF range: 11.7 - 12.75 GHz
AV-01 Grandstream ATA HT-502 as a replacement for the VoIP IP phone

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