

Product Overview

The MiChroSat OEM Modem Module (OMM) provides data connectivity through asynchronous data and direct internet connections. Connections supported are MiChroSat modem to MiChroSat modem, MiChroSat modem to PSTN user, PSTN user to MiChroSat modem and MiChroSat modem to Internet.

The MiChroSat OMM contains an Iridium network compliant communications device designed for wireless data solutions. The following are key features of the modem module.

- RS-232 Serial Interface via DB-25 Connector
- AT Command Set for Command, Control and Configuration of the Modem
- TNC RF Connector
- Remote Control of Module Power
- Integral SIM Card Reader
- Power Connector

Asynchronous Data

When providing async data services, the MiChroSat modem can be interfaced directly into existing applications currently using PSTN or GSM modems. The modem provides full duplex connectivity at a data rate of 2400bps. The MiChroSat OMM supports both Modem to PSTN/GSM connections and Modem to Modem connectivity.

Full 'Hayes' AT command set support allows existing applications to be easily interfaced to the modem.

Modem to modem

MiChroSat OMM also provides direct modem to modem connectivity, allowing one modem to call another directly without terrestrial network connectivity. This allows remote OMMs to call (or to be called) directly via a bank of OMMs located at the customers premises. It provides a secure independent communications network, removing any reliance on the existing terrestrial infrastructure.

Modem to PSTN

A MiChroSat OMM can be used to extend a PSTN dial-up application into locations where PSTN connectivity or GSM coverage is not available. The MiChroSat OMM can dial directly to PSTN/GSM numbers or it can wait in 'auto-answer' mode to receive calls from PSTN/GSM as required.



Direct Internet Connectivity

The MiChroSat OMM can be configured to provide a direct connection to the internet at 2400bps without having to dial an existing ISP via PSTN. To access the internet the modem dials a specific access number. Once the terminal is connected it allows the full suite of IP protocols to be used including WWW, FTP, SMTP and Telnet. Direct internet connectivity allows customer applications to update web pages for tracking/logging applications, or update servers via e-mail, or file transfers directly via the internet.

Standards Compliance

The MiChroSat OEM Modem Module has been designed to comply with the standards for Emissions Compliance, 47 CFR Part 25 as FCC ID: IHDT6NJ1 and also complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference. Any changes or modifications, including the use of a non-standard antenna, not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

IMPORTANT: To comply with FCC RF exposure requirements, a minimum separation of 20 cm is required between the antenna and all persons.

Mechanical Specifications

Length (inc. antenna connector) 216.1 mm (8.51")
 Length (exc. antenna connector) 196.4 mm (7.73")
 Width 82.6 mm (3.25")
 Depth 39.0 mm (1.54")
 Weight (approx.) 610 g

Environmental Specifications

Operating Temperature Range -20°C to +60°C
 Operating Humidity Range ≤ 85% RH
 Storage Temperature Range -40°C to +85°C
 Storage Humidity Range ≤ 85% RH

General RF Parameters

Frequency Range 1616 to 1626.5 MHz
 Duplexing Method TDD (Time Domain Duplex)
 Oscillator Stability ±1.5 ppm
 Input/Output Impedance 50 Ohm
 Multiplexing Method TDMA/FDMA

DC Power Input Specifications

Main Input Voltage – Range +4.0 to +4.8 Vdc
 Main Input Voltage – Nominal 4.4 Vdc
 Main Input Voltage – Ripple 40 mVpp

Power Consumption @ + 4.4V DC
 Idle: 0.5W (approx.)
 Average: 4W (approx.)
 Transmit: 6W (peak)

Link Margin

Configuration	Cable Loss	Link Margin
MiChroSat Modem Module with Motorola accessory antennas	3 dB Max.	12.1 dB

Analog Audio Interface Signal Descriptions

Signal Name	Signal Description
MIC_AUD	Analog audio input
SPKR_AUD	Analog audio output
ANALOG_AUD_EN	Analog audio enable input
ANALOG_GND	Analog audio gnd level signal ref.

Control/Audio Interface Signal Descriptions

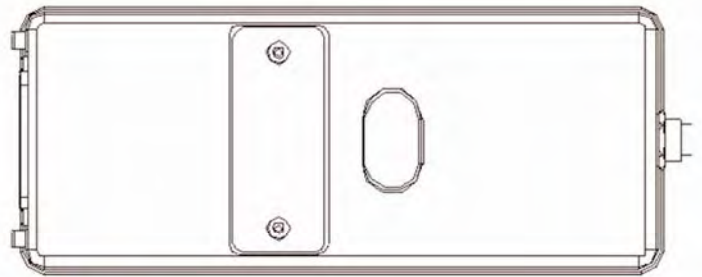
The control/audio interface enables peripherals such as handsets and SIM card readers to be interfaced to the unit. The interface utilises a Motorola Proprietary full duplex communication buss not detailed in this fact sheet. Details can be made available after appropriate Non-disclosure Agreements and/or License Agreements are executed.

RS232 Data Signal Descriptions

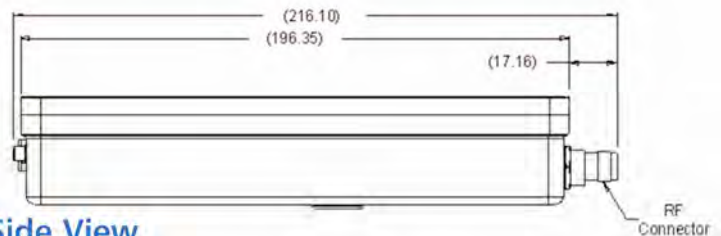
The RS232 data interface is comprised of eight standard RS232 data, control, and status signals plus a ground level signal reference. This interface allows a connected Data Terminal Equipment (DTE) to utilise the modem functionality via AT command control.

SIM Interface

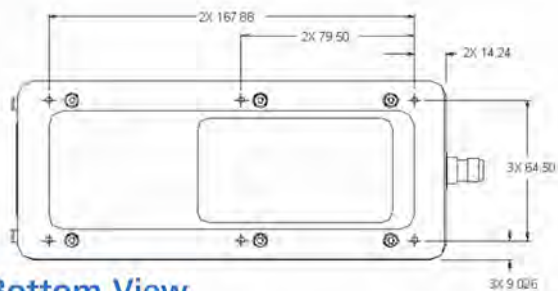
An integrated SIM chip connector is provided on the modem. An external SIM card reader may also be interfaced as a peripheral to the MiChroSat OEM Modem Module via the DSC bus of the control/audio interface. A SIM card in the external reader will take precedence over the SIM chip in the integrated connector when both are present.



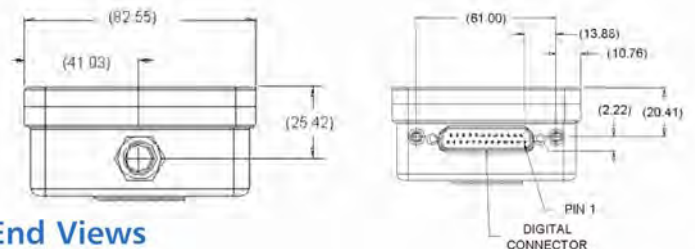
Top View



Side View



Bottom View



End Views