MiChroSat 2400

Overview

MiChroSat 2400 is a low data rate communications solution developed by Wireless Innovation for deployment in remote locations. Operating via LEO (Low Earth Orbit) satellite networks, MiChroSat 2400 provides global coverage. MiChroSat 2400 offers data connectivity either via direct internet dial-up connectivity or 'async' type modem to modem connections. The system may also be expanded to provide data acquisition, alarm reporting and discrete I/O functionality.

System Operation

The MiChroSat 2400 system can provide data connectivity in two different manners:

When providing async data services the MiChroSat 2400 modem can be interfaced directly into existing applications utilising PSTN or GSM modems. The modem provides async data connectivity at 2400 bps.

The MiChroSat 2400 system supports both Modem to PSTN/GSM connections and Modem to Modem connectivity.

The MiChroSat 2400 modem supports the full 'Hayes' AT command set allowing existing applications to be easily interfaced to the modem.

The diagrams overleaf show a typical applications, where a MiChroSat 2400 modem is being used to extend a PSTN dial-up application to locations where there is no PSTN connectivity or GSM coverage. The MiChroSat 2400 modem can dial directly to PSTN/GSM numbers or can wait in 'auto-answer' mode to receive calls from PSTN/GSM as required.

MiChroSat 2400 also provides direct modem to modem connectivity, allowing one modem to call another directly with no terrestrial network connectivity. This method of configuration allows a number of modems in the field to call (or to be called) directly via a bank of modems located at the customers premises. This provides a secure independent communications network, removing any reliance on the existing terrestrial infrastructure.

The Michrosat 2400 product contains an intelligent interface board to allow it to be operated in many different scenarios, typically found in remote monitoring environments.

Power management

The modem may be scheduled to power on/off at fixed times, effectively allowing it power up to provide an operational window, and sleep out side this period to conserve power.

The modem can be configured to automatically power cycle at fixed intervals, this provides a method of automatically clearing any RTU/Modem communications issues, and re-initializes the modem without a trip to site.

DTR and TX data sensing, allows the modem to detect a change in state of the DTR pin or detect traffic on the TX line and automatically come out of sleep mode, initialize the modem and start communications, equally if nothing is detected on these lines for a user defined period of time the modem will automatically drop back into sleep mode.

Automatic Configuration

The interface board may be configured to automatically program the modem with a user defined initialization file at power up, the board allows the modem to be configured for use with 'dumb' logger type devices for example by automatically configuring the modem with the correct RS-232 setting and enabling auto-answer for example.

This functionality also ensures that the modem will always power up in a specific known configuration, and again ensures reliable communications between RTU and modem.

RS-232 Isolation

The interface board fully isolates the RS-232 connection between RTU/Device and the actual modem, this ensures that the actual signals received by the modem are clean ensuring good communications, and further ensures that variations in RS-232 signal levels from the connected device (frequently seen from low power RTU's for example) will have no impact on effective communications.

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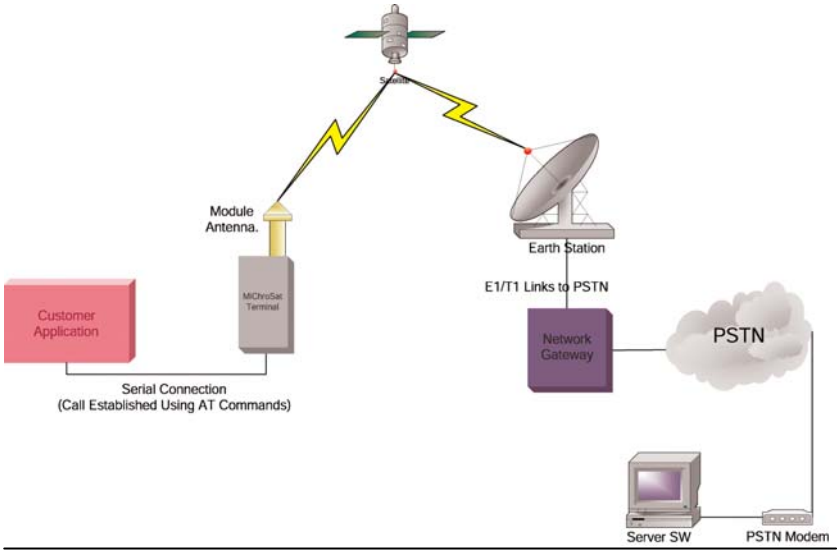
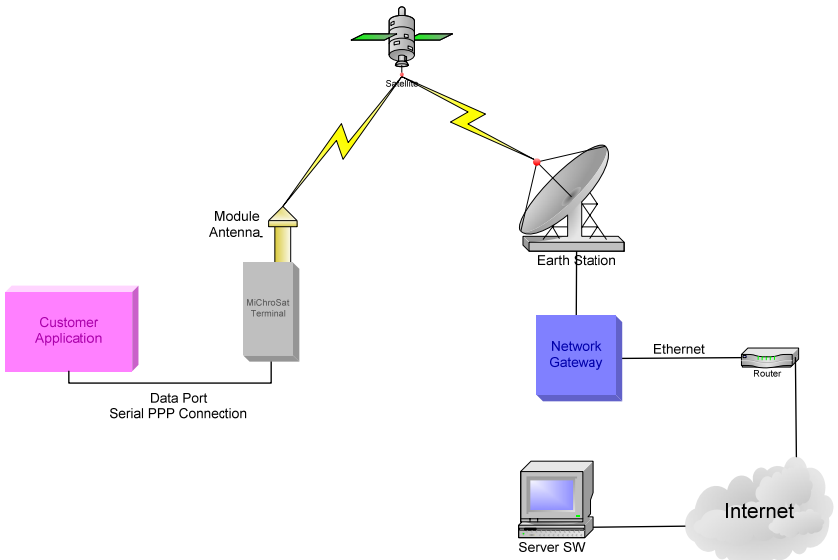




Typical MiChroSat 2400 Uses:

Extension of PSTN/GSM Based Telemetry - MiChroSat 2400 is deployed on a permanent basis with a telemetry outstation to extend communication to sites not served by existing PSTN/GSM networks. Typically it would report in once per day with a health check message but MiChroSat 2400 can also report on an exception basis.

Temporary Installations - Typically a temporary installation at a site. MiChroSat 2400 can be deployed with confidence as long as "the sky can be seen" allowing the unit to be deployed with confidence, without waiting for PSTN installation, or concerns over GSM coverage.

Global Coverage - MiChroSat 2400 uses a single network providing the same service pole to pole, allowing global delivery of service to a single point, without having to negotiate contracts in different regions.

Examples:

MiChrosat 2400 has been deployed for Wind Farm Acquisition, CSO monitoring, Pole Top Monitoring, Generator Heartbeat, Flow Meter, Security Monitoring projects amongst many others.

MiChroSat 2400 Specifications

Modem Power Consumption

Input Voltage +9 to +15V DC
Power Consumption @ + 12V DC
Sleep: 30mA
Idle: 200mA (Approx.)
Transmit: 2500mA (Peak) 1000mA (Average)

Environmental Conditions

Operating Temperature: From -30°C to +60°C
Storage Temperature: -40°C to +85°C
Relative Humidity: 100% IP65 Rated

Physical Specifications

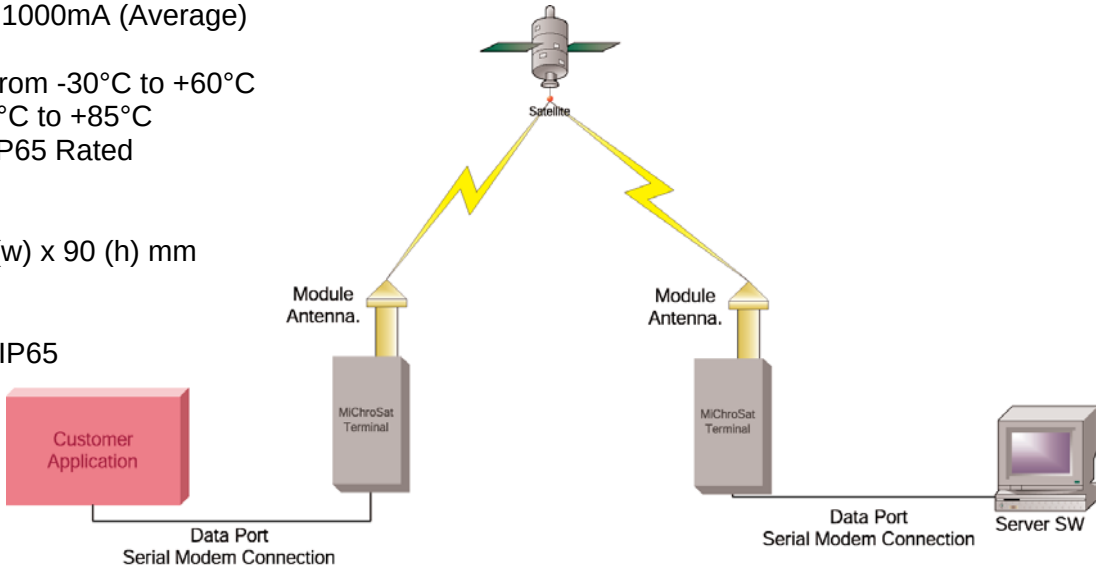
Weight 460g Approx.
Dimensions 280 (l) x 170 (w) x 90 (h) mm

Interface Specifications

Application Interface
RS232 and Power via 2 x IP65
Mil-Spec Connectors
RF Interface
1 TNC Connector

Certification

FCC & CE



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