

Fixed Station Terminal - Installer's Guide

Introduction

This guide describes specific installation requirements for Applied Satellite Engineering fixed station terminals. Visit www.ase-corp.com for the latest updates. For further information or clarification, please contact your service provider. Your Service Provider's tech support number should be included with this shipment.

Iridium Antenna

Critical to any ASE product installation is proper placement of the Iridium antenna. Verify that your antenna meets the following Iridium specifications.

Antenna Specifications

Parameter	Value
Operating Temperature Range (without loss of function)	-40°C to +85°C
Measurement Frequency Range	1616 MHz to 1626.5 MHz
Return Loss (minimum)	9.5 dB (< 2:1 VSWR)
Gain (weighted average minimum)	0.0 dBic
Minimum 'Horizon' Gain	-2.0 dBic (82 degree conic average)
Nominal Impedance	50 ohm
Polarization	Right Hand Circular (RHCP)
Basic Pattern	Omnidirectional and Hemispherical
Termination	TNC male to TNC male

Antenna Cable Specifications

The cable signal loss (including connectors) must be less than 3 dB and the minimum link margin of 12.1dB must be maintained.

Antenna Lengths

Cable type and length are also very important. Signal loss over long runs can seriously degrade the satellite phone performance. Typical cable types and maximum lengths are shown below:

Cable Type	Maximum Length
LMR-240-TFTM	9 meters (30 feet)
LMR-400-TFTM	18 meters (58 feet)

Unobstructed View

The Iridium antenna must have an unobstructed view of the horizon for proper operation.

IMPORTANT NOTE: Signal strength must show 4 to 5 bars at all times for reliable operation. Verify signal strength remains above 4 bars – especially when a call is connecting.

Interference

Care must be taken when installing the Iridium antenna near other equipment. For example, if installed in proximity of an Inmarsat system, the Iridium antenna should not be mounted within 6 meters of an Inmarsat antenna, and an Inmarsat filter should be used. To avoid disturbance to the radar system, it is important that all objects are kept outside of the radiation beam of the radar. Please consult your radar system installation manual for more details.

GPS Antenna (if applicable)

The GPS antenna must be an active type, passive GPS antennas will not work.

GPS Antenna Specifications

Parameter	Value
Operating Temperature Range (without loss of function)	-40°C to +85°C
Measurement Frequency Range	1.57542 GHz
Signal at Antenna	27 db
Signal at Device (minimum)	3 dB
Termination	SMA male
Example Cable Length (RG174/U)	10m (33 feet)

Interference

The GPS antenna and the Iridium antenna must be installed at least 1m apart.

Inside Connections

The ASE fixed station terminal must be installed in a dry, climate-controlled space. It is desirable, whenever possible, to install a ComCenter where the LCD display can be viewed.

Telephone Cord Length

The maximum length for an RJ-11 cable is 3km (9800 feet).

PBX Connection

All ASE fixed station terminals generate the necessary telecom battery and ringing voltages and can be integrated into PBX systems as emulating a Central Office (trunk line). Never connect the fixed station terminal as an extension line to a PBX system as damage may result if the extension attempts to ring the fixed station terminal.

Device Configuration

SIM Card

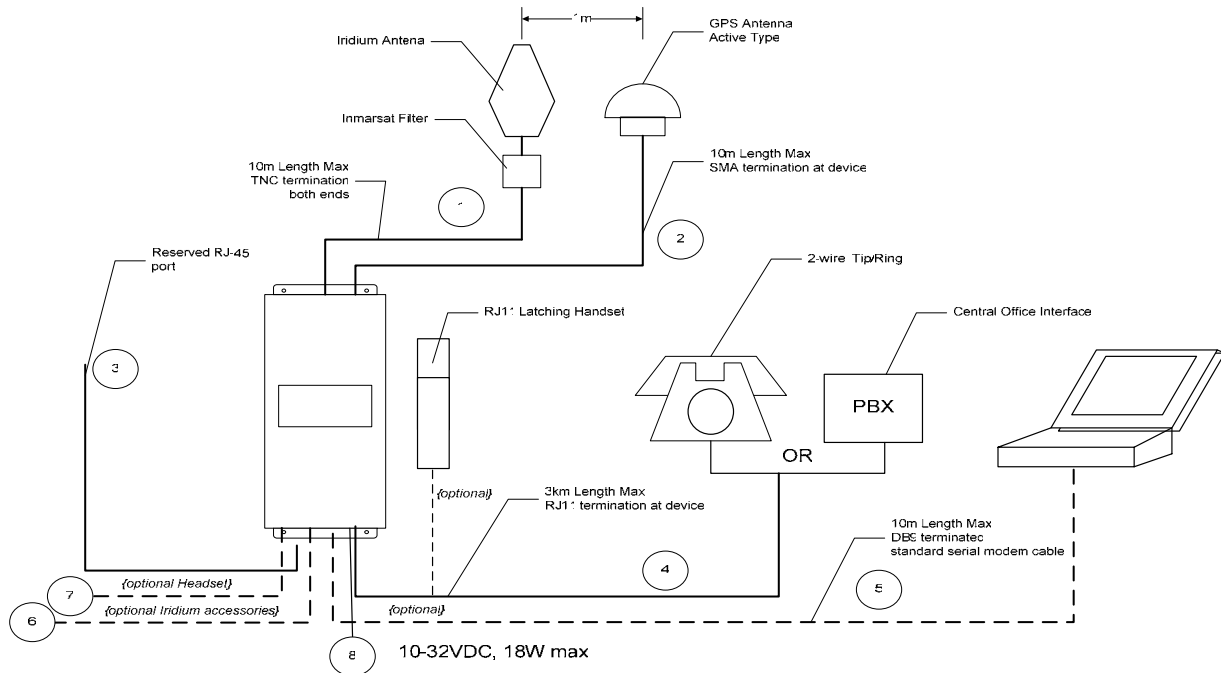
The ASE fixed station terminal should have been delivered with the SIM card installed and unlocked by your service provider. It is the service provider's responsibility to ensure the SIM card is in working order. Contact your service provider if there are any SIM card activation problems or refer to document 'Unlocking an Iridium SIM Card' for instructions.

Data Port

When connecting to an ASE fixed station terminal's data port, required communication protocol settings are 19200/N/8/1, RTS/CTS hardware flow control.

System Diagram

ComCenter (with GPS tracking) configuration is shown below. The Docking Station has the same interface ports - excluding the GPS interface.



Interface Ports

Port	Port Type	Function
1	TNC Female	Iridium Antenna
2	SMA Female	GPS Antenna
3	RJ45	Reserved
4	RJ11	Analog Phone, PBX Interface
5	DB-9 Male	RS-232C Computer Interface
6	RJ45	Iridium Intelligent Peripherals
7	2.5mm Audio Jack	Hands-free Headset Operation
8	Power Input Jack	DC Voltage Input