

Dynamic IoT Ka Terminal



ST Engineering iDirect's Dynamic IoT Ka terminal is part of a unique line of satellite terminals that features innovative technology to enable low data rate IoT with highly competitive services for existing and new markets. The Dynamic IoT Ka terminal is a low cost, compact satellite device based on a state-of-the-art design that enables portable itinerant operations, or fully mobile uses cases with low data rates communication services over Ka-GEO satellites.

The Dynamic IoT Ka terminal is an integrated modem with an electronically steerable phased array antenna. With no moving mechanical parts, fast synchronization, and low power consumption the Dynamic IoT terminal is optimized for mobile LDR and MDR use cases.

The Dynamic IoT Terminal features a Wi-Fi interface along with a single 19-Pin industrialized connector offering PoE Ethernet for connecting to remote IoT aggregation Edge Computing or an IoT Sensor. The same 19-Pin connector offers a DC power option with an input range of 12-24V DC enabling the Terminal to be powered from an external power source, including Solar*, making the Terminal fully versatile for remote operations.

(*battery bank, not included: recommended for Solar powered operations during hours of darkness)

The Dynamic IoT Ka Terminal is ideal for Comms-on-the-Move (COTM) use cases such as Road Vehicle and Fleet Tracking Management, Agriculture/Construction IoT Sensor aggregation applications and Maritime Fleet applications such as vessel tracking and catch reporting. The Dynamic IoT Terminal is also well suited for Comms-on-the-Pause (COTP) portable or itinerant First-Responders and NGO use-cases that require rapid deployment for IoT sensor and IoT device connectivity.

Markets and Applications

First Responder
COTM/COTP
Agriculture/ Construction
Vehicle/Fleet Tracking
Maritime/ Fishing
Cargo Tracking

Main Features

- Ka-Band terminal with integrated flat panel antenna design
- Ideal for low data rates: 7.33 -200Kbps
- Compact and lightweight design
- Versatile Ethernet and WiFi interfaces
- Low power consumption with DC or PoE++ supply options
- Easy installation via smartphone app
- Can be installed by non-professionals
- Fast blockage recovery



Dynamic Modem Specifications

Modulation*	BPSK
Data Burst Rates	7.33Kbps - 200Kbps
FEC Type, Rates	Turbo 1/3
Ka Transmit Range	27.5GHz to 30GHz
Ka Receive Range	17.7GHz to 20.2GHz
Receiver Lock Time	50 msec
Frequency Switching Time	1 msec
Chip Rate	110 - 3125 Kcps
Spreading Factor	5 - 64 (7dB - 18dB)
Eb/n0 Threshold	1.5 dB

Antenna Specifications

Type	Active Phased Array
EIRP	20.0 dBW at 0° (bore-sight) 17.5 dBW at 60° (off bore-sight / 30° above horizon)
G/T	-3.7 dB/K @ 0° scan (bore-sight) -4.9 dB/K @ 60° scan (off bore-sight / 30° above horizon)
Gain	20.2 dBi at 0° (bore-sight) 17.7 dBi at 60° (off bore-sight / 30° above horizon)
Noise	3.2 dB
Polarization	-R-L / L-R, Switchable on the fly
Beam width	13° @ 0° scan
Receiver Eb/No	1.5dB
Angles of Operation	Azimuth: 360° Elevation: 30° above horizon
Elevation Coverage relative to terminal surface	EL: 0° (Relative to Zenith) to 60°

Interfaces

WiFi	802.11 b/g/n 2.4Ghz
Ethernet	Ethernet with PoE 802.11bt / PoE++

Mechanical and Environmental

Dimensions	D 24.4 x W 14.1 x H 4.2 cm (D 9.60 in x W 5.55 in x H 1.65 in)
Weight	1.4kg (3.08 lbs)
Mounting	VESA compliant
Operating Temp.:	-20° to +55°C (-4° to + 131°F)
Vibration:	SAE J1455
Water Resistance	IP65

Power Supply

Power	12-24 Volts DC or PoE++ / 802.3bt
	18 Watts Nominal (RX only)
	40 Watts Full TX/RX Mode
	>50 Watts Power Supply Mandatory (to allow for TX spikes)

Specifications subject to change without notice