

EXPLORER Push-To-Talk

Beyond Line-Of-Sight Push-To-Talk Communication

COBHAM

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The most important thing we build is trust

 **Remote Satellite Systems**
INTERNATIONAL



A complete Radio over IP (RoIP) solution coupled with both satellite and cellular backhaul connectivity

Beyond Line-Of-Sight Communication

EXPLORER Push-To-Talk (PTT) is an IP-based radio communications device that supports BGAN Satellite/3G/LTE/LAN backhaul and Land Mobile Radio (LMR) integration to provide seamless voice communication in any situation. It is a cost effective system designed to supplement or replace traditional LMR systems widely used in the Public Safety, Utility, Mining, and Oil & Gas sectors.

EXPLORER PTT extends legacy Push-To-Talk capabilities to hybrid data networks such as terrestrial cellular networks (where available), supplemented by the Inmarsat BGAN satellite network where no terrestrial network coverage is present. With no user intervention required, the system automatically routes voice and data traffic via the least expensive and most reliable network available.

EXPLORER PTT turns traditional LMR, satellite, cellular, and the internet, into a closed managed Wide Area Network, with beyond line-of-sight communication.

Enhanced Capabilities

The EXPLORER PTT solution solves many challenges faced by traditional LMR system operators:

- Coverage area can be extended by using BGAN satellite and existing cellular based networks.
- Lowers expensive terrestrial infrastructure costs thus allowing for a higher return on investment. Constant communications in any environment while on the move.
- High availability to support critical communications.
- Scalable from two to thousands of units.

- Functionality built in to allow for automatic switching between available satellite, cellular, and LAN connectivity thus ensuring constant communications and least cost routing.
- Compatibility with many different manufacturers of land mobile radios.
- Voice compression technologies are used to allow for the most efficient use of bandwidth across multiple transport mediums.

The look and feel is exactly like a legacy LMR system utilizing a simple Push-To-Talk speaker microphone handset. Vehicle installation includes a BGAN on-the-move terminal and an EXPLORER Push-To-Talk (PTT) terminal with a Control Speaker Microphone. Up to two USB modems (optional) can be connected to the PTT base station allowing for two independent cellular network connections. The all important least cost routing functionality enables automatic switching between the available networks:

- Uses cellular networks as default.
- If one of the cellular networks is congested or unavailable the system will automatically switch to the other cellular network.
- If limited or no cellular coverage the system will switch to the Inmarsat BGAN satellite network.

Server infrastructure

The heart of the system is the Push-To-Talk server infrastructure. A server setup initially consists of two standard 19" rack servers that can be placed anywhere connected to the public internet:

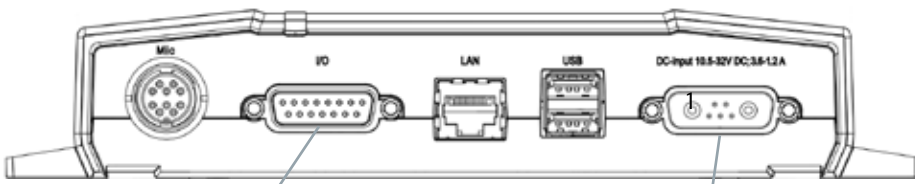
- The PTT server is handling all switching between the mobile units, the call groups and the dispatchers.
- The transcoding server handles the voice transcoding and compression.

EXPLORER Push-To-Talk

Beyond Line-Of-Sight Push-To-Talk Communication



- A ruggedized and easy to use digital Push-To-Talk communication solution.
- Designed to cost effectively expand or replace Land Mobile Radio systems.
- Built-in support for LMR devices to ensure over-the-horizon radio communication.
- Voice-over-IP technologies optimized for use under difficult satellite or terrestrial link conditions.
- Automatic voice and data least cost routing between cellular (2G/3G/LTE) and satellite (BGAN) networks.
- Beyond Line-Of-Sight communication - global coverage.



15 PIN D-SUB Input/Output		
1	Line In +	600 Ohm input
2	Line Out +	600 Ohm output
3	+12 VDC output	Fused, max. 100 mA
4	Input 1	PTT, active low
5	Input 2	General purpose digital input
6	Audio+	Amplified audio output 4-16 Ohm (1 W)
7	Output 1	PTT, push/pull 12 V
8	Output 2	Open drain
9	Service port (out)	UART, RS-232 levels
10	Service port (in)	UART, RS-232 levels
11	GND	Ground
12	Audio-	Amplified audio output
13	GND	Ground
14	Line Out -	Ground
15	Line In -	Ground

Power connector (DC input)	
A1	DC+
A2	DC-
1	Ignition
2	Common. Connected to pin 4 or pin 5.
3	General purpose open drain output. Max. 300 mA.
4	Connected to pin 2 when the PTT unit is on.
5	Connected to pin 2 when the PTT unit is off.

Specifications

Dimensions (H / W / D):

EXPLORER 3647 PTT: (Terminal)	41 / 231 / 278 mm 1.6 / 9.1 / 10.9 inches
EXPLORER 6205 CSM: (Control Speaker Microphone)	173 / 70 / 52 mm 6.8 / 2.8 / 2 inches

Weight:

EXPLORER 3647 PTT:	1 kg / 2 lbs
EXPLORER 6205 CSM:	320 g / 0.7 lbs

Services:

Push-To-Talk Voice:	Group call, Dispatch call
IP Service:	Least cost routing of IP Data

Approvals:

CE, GMPCS, FCC

Environmental conditions

Temperature:

Operational:	-15° to +55°
Storage:	-40° to +80°

Ingress Protection:

EXPLORER 3647 PTT: IP31
EXPLORER 6205 CSM: IPX6

Power

Power supply:

EXPLORER 3647 PTT:	Nominal 12-24 VDC Operating 10.5-32 VDC
EXPLORER 6205 CSM:	Powered by the terminal

Power consumption:

38W

Interfaces

1 x LAN interface:

Connector type:	RJ-45
Data rate:	10/100 Mbps

1 x I/O interface:

Connector type: 15 pin D-SUB containing: Loudspeaker output, Audio in, Audio out, PTT in, PTT out, serial port, 4-wire E&M interface.

2 x USB:

Connector type: USB host for Cellular Modems

1 x Microphone:

Connector type: 12 pin connector for the EXPLORER 6205 Control Speaker Microphone

User Interface:

Handset (CSM): Power On/Off, PTT button, 4 control buttons, 40x30mm Display, Jog wheel selector, Dimmer (display backlight)



For further information please contact:

Cobham SATCOM Land

Lundtoftegaardsvej 93 D
DK-2800 Kgs. Lyngby, Denmark

Tel:

