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| ADVANCED ELECTRONIC SOLUTIONS | AVIATION SERVICES | COMMUNICATIONS AND CONNECTIVITY | MISSION SYSTEMS |

EXPLORER 540 BGAN M2M

Product Overview

What is M2M?

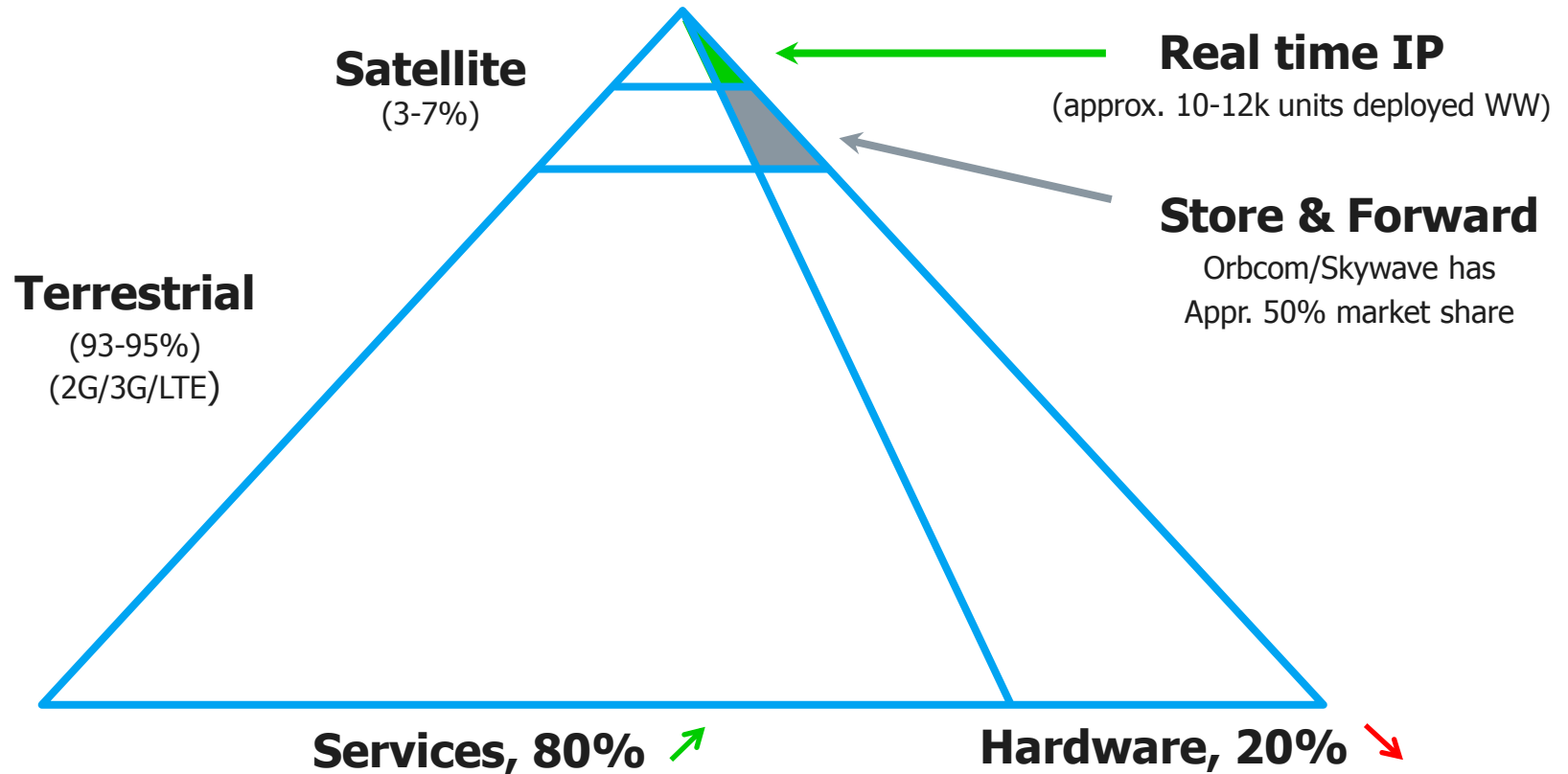Autonomous data collection often from remote sites

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Satellite terminal

Solar Panel

Sensors

RTU (Remote Terminal Unit)

Batteries

The M2M market

Satellite
(3-7%)

Real time IP
(approx. 10-12k units deployed WW)

Store & Forward
Orbcom/Skywave has
Appr. 50% market share

Terrestrial
(93-95%)
(2G/3G/LTE)

Services, 80% ↗   **Hardware, 20%** ↘

- All Satellite Store & Forward players operate a mixed HW and Services business model. They all have own Protocol IP.

- Short term – Cobham play will be limited to Real Time IP hardware market

Introducing EXPLORER 540 for M2M

The Cobham SATCOM response

- Dual Mode fixed BGAN M2M terminal
  - Supports BGAN M2M and standard Class 2 rate plans (BGAN Link)
  - Optional "integrated" 3G module (2G/3G/GPRS) enabling least cost routing
  - One cable support (Power over Ethernet), power injector provided as an option

- Design philosophy
  - Ease of installation - the main focus
  - All the main attributes of an M2M terminal are taken care of
    - Stability, stability, stability, stability – self healing under all circumstances
    - Low power consumption
    - ATEX Zone 2 Cat. 3, US C2D1 compliant

- Up sell possibility
  - EXPLORER 3G Module
  - EXPLORER Power Injector

- Pricing
  - MSRP: 1799$

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The new BGAN Class 2 M2M Terminal

- A true dual mode BGAN M2M terminal with an optional 3G Modem Box as an integrated part of the design.

- Supports the Inmarsat M2M Access Platform (M2MAP).
  - Data exchange
  - SMS gateway for remote management
  - Firmware Upgrade Process (FUP) server for free OTA SW upgrade
  - Over The Air (OTA) file transfer server for support, i.e. log retrieval, configuration update, etc.

- First Customer Shipment is scheduled early 2016.

Features & Dimensions

- Features:
    - Wide range of power options (PoE and DC 10.5V-32V)
    - Inmarsat M2M UT Certification
    - Inmarsat BGAN Class 2 Type Approval
    - Optional 3G Modem and PoE Power Injector
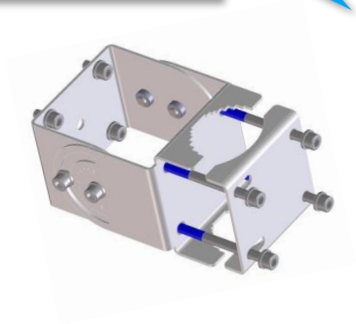   - IP66 and C1D2 Approved
    - Pole Mount Kit included

- Dimensions:
    - Size 20x20x5 cm
    - Weight >1.6 kg

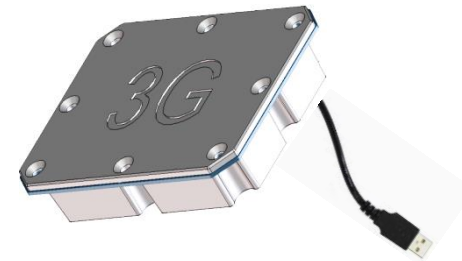 Cobham SATCOM

EXPLORER 540

System Overview

Box 1:

- E540 Transceiver
- E540 Pole Mount kit
- Installation Guide
- Online user manual and drivers

Box 2 (optional):

- 3G Modem Box
- Installation Guide
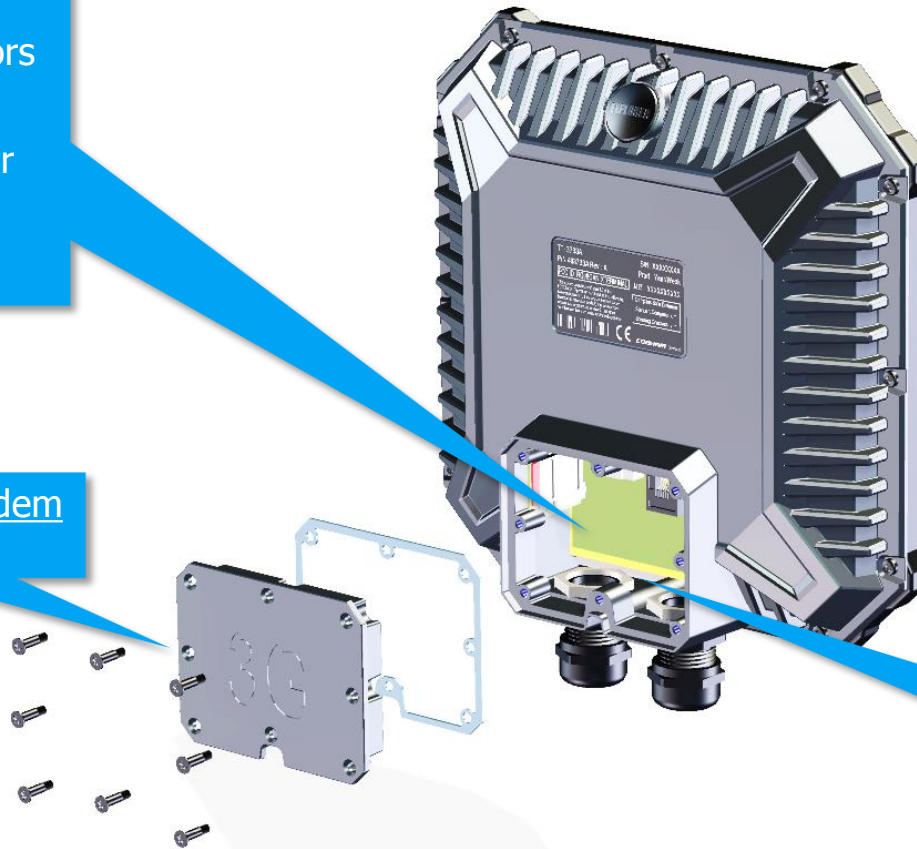
Box 3 (optional):

- PoE Power Injector
- Installation Guide

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Product description

Compartment for:
- BGAN SIM Card
- LAN/DC Connectors
- Reset Button
- USB Connector for 3G Modem
- IO ports

EXPLORER 3G Modem (Optional)

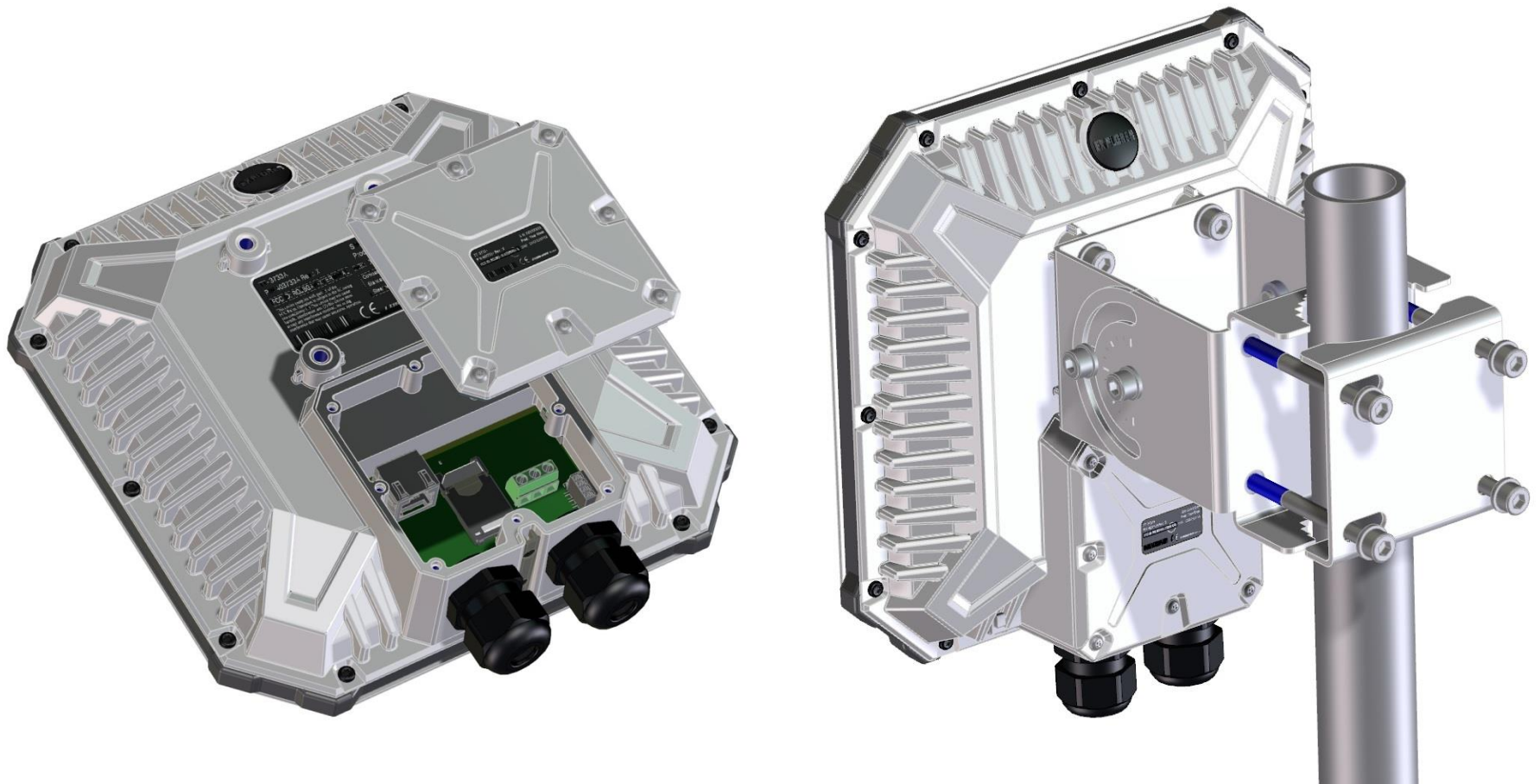**Back cover can be replaced with 3G Modem**

EXPLORER 540 M2M Launch

Important dates (preliminary)

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1. Product Announcement: 9. October 2015

2. Product Intro: Late October 2015

   –   Preliminary Product Sheet
   –   Sales Presentation

3. Product Launch: November / December 2015

   –   Press Release
   –   Product Number / ordering

4. First Customer Shipment: February 2016

Number 1 in ease of Installation

Number 1 in ease of Installation

Dual Mode - a way in to the large cellular Systems Integrators

Backup Slides

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Supported firewall features

- Port forwarding:
    - Enable/Disable, list of IP address, protocol, port range

- Port filtering:
    - Enable/Disable, list of port range, protocol

- IP filtering:
    - Enable/Disable, list of IP approved addresses, protocol

- MAC filtering:
    - Enable/Disable, list of approved MAC addresses

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Remote Management

- PDP context activation:
  - Remote start via SMS
  - Always available, i.e. Automatic Context Activation (ACA), see sec. 6.8 Notice: This is new functionality compared to E510, E710 and legacy BDU.
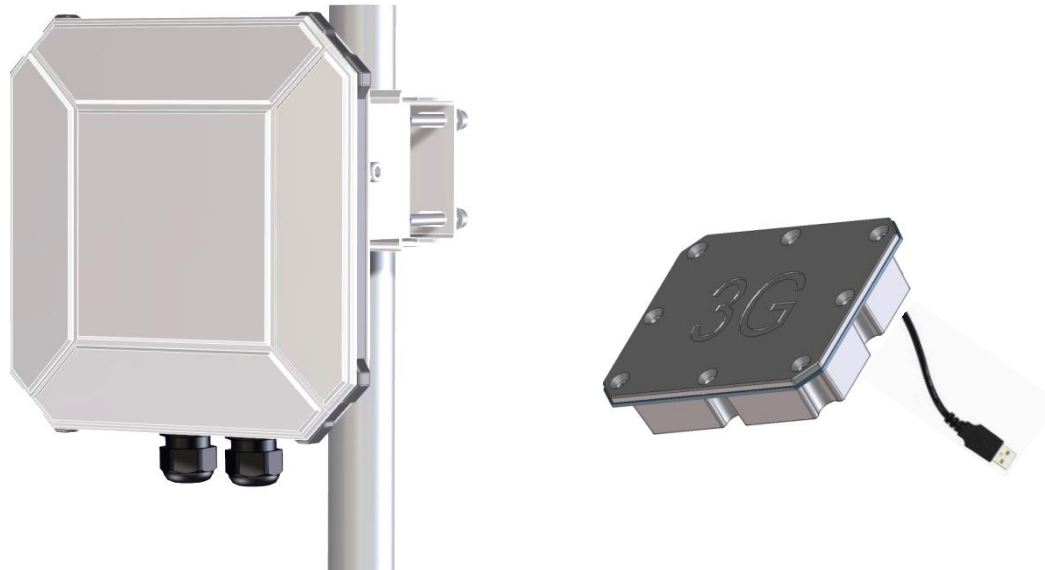 - AT-Cmd access to activate/deactivate PDP context (RTM)

- Remote access with IP:
  - a) Enable/disable access to web server
  - b) Incoming port for web server
  - c) Enable/disable access to AT-commands
  - d) Incoming port for AT-commands
  - e) Trusted IP addresses

- Remote access with SMS:
  - a) Enable remote activation of data sessions
  - b) Send SMS confirmation
  - c) Enable access to AT commands
  - d) Password
  - e) Trusted whitelist of phone numbers (5 numbers)

EXPLORER 540

Interfaces

- EXPLORER 540 interfaces:
    - Inmarsat IAI2
    - USIM card for BGAN
    - GNSS (GPS, Glonass, Beidou)
    - LAN with PoE (PoE+ IEEE 802.3at type 2 class 4 interface)
    - DC power (10.5 – 32V DC)
    - USB host (Micro-AB type connector) for optional 3G Modem
    - USIM card for 3G modem (optional)
    - 1 x input port for wake-on-input
    - 1 x output port for is-awake-output
    - 1 x GPIO port for remote control/status of a M2M device

Routing between BGAN M2M and 3G

- Configurable preferences of communication path selection will be:

  a) BGAN only (Default)

  b) Modem only

  c) BGAN is preferred, otherwise use modem

  d) Modem is preferred, otherwise BGAN

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For more information, please visit GroundControl.com or click on Explorer 510 BGAN M2M Information