

“IMPI” BLUE FORCE TRACKING DEVICE

CONTROL AT YOUR COMMAND

The IMPI Blue Force Tracking Device is a multi purpose micro processor controlled GPS tracking modem providing a wide range of communications capabilities in either a secure military tactical environment or in a civilian environment.

The IMPI position is relayed to a computer system in a mobile, deployable of static control room, via GPRS or an Iridium satellite communications link. This position can then be plotted and shown on a geographical map display.

The communications data carrier for the position relay is determined via a “least-cost” mechanism, meaning that the GPRS data channel of the available GSM network will automatically be selected if available. Should no GSM network coverage be available, the IMPI positional update will automatically be routed via the Iridium satellite network. This means that IMPI provides positional updates from any geographic position on earth, to any designated control system.



As these positional updates (GPRS or Iridium) will be relayed via the Internet, data security can be ensured by encryption according to user specifications / requirements.

IMPI offers an electronic interface for the integration of PDA / PC-based computer. Extensive mapping, messaging and situational awareness functionality can be added as per user requirement.

IMPI can be used with Tactical Radios utilising the Inline Data Communication Unit (IDCU) from SAAB. This interface can be customised as per user requirement and specific radio functionality.

IMPI utilizes three types of communication mediums: Tactical Radios, GSM and Satellite Communication. (It follows “least cost routing”-depending on the availability of the medium).

The “update-rate” can be adjusted “on-the-fly” from the base station.

FUNCTIONAL SPECIFICATIONS

1. Supports AT (Attention) commands in modem mode.
2. Provides NMEA (National Marine Electronics Association) ASCII strings for GPS info on external port.
3. Encrypted data messages (track and status information) to host server
4. Supports client unique requirements:
 - Supports Tactical Data Link (TDL) message formats for track messages.
 - Supports GTI (General Transfer Interface) when interfacing with TDL compliant communication devices.
 - Routes messages from external computing device to communication devices.
 - Supports Link Control Functionality.
5. Although IMPI has a rechargeable internal battery it can be coupled to an external power source. The battery is rechargeable from a 100V-240V AC power source as well as from a 12V-32V DC power source (via battery clamps, vehicle cigarette lighter etc.)

FUNCTIONAL COMPONENTS

Interfaces:

A. HMI

1. Rotary Selection Switch
 - Off;
 - RS: Radio Silence
 - R1, R2, and R3: Selecting pre-configured radio types / modes to transmit or receive data.
 - CIV: Transmitting / receiving via GPRS/Iridium;
 - M: Modem. Used as data modem.
2. LED Indicators
 - BATT: Internal rechargeable battery status
 - GPS: GPS lock-on status
 - GPRS: GPRS network status
 - SAT: Iridium network status
 - DATA: Data transmission status (dependant on selected mode)
 - ERR: BIT status
 - XPRW: External power source status

B. ANTENNA

Providing interfaces to GPS, GPRS and Iridium Antenna Cluster

C. J2 COMPUTING UNIT

1. 1 x RS232 bi-directional
2. 1 x RS232 uni-directional providing GPRS NMEA strings and diagnostic data
3. 1 x RS422
4. 1 x USB
5. Power Out (Microprocessor controlled – providing limited power to external computing device such as a PDA)



D. J1 EXTERNAL COMMUNICATION UNIT

1. 1 x RS422
2. 1 x RS232
3. Power Out (Available on request)

E. P1 EXTERNAL POWER AND DIAGNOSTICS

1. Power in (8-32 VDC) Note: > 12.5V required to recharge internal battery, unit will operate from 8 VDC)
2. 1 x RS232 providing GPRS NMEA strings and diagnostic data, configuration port, internally connected to J2

Specifications to change without notice

TECHNICAL SPECIFICATIONS

1. Rechargeable battery: Lithium Polymer, 20 hours operational, depending on usage;
2. A43 military battery: 90 hours operational, depending on usage
3. Input power: 8-32 VDC, 90mA average, 600mA peak at 15V, >12VDC required for recharging,
4. GPRS: Quad-Band (850/900/1800/1900 MHz), Class 10,
5. GPS:50-channel u-blox 5 engine; 29 sec acquisition for cold and warm starts, <1 sec for hot starts, velocity up to 1000 knots, narrowband active antenna, -160dBm sensitivity, high immunity to jamming,
6. Iridium: Short Bust Data (SBD),(<http://www.iridium.com/about/howitworks.php>),
7. Dimensions: Length - 200mm, Width - 109mm and Height - 43mm, (Aluminum casing)
8. Mass: 1,87kg

ENVIRONMENTAL SPECIFICATIONS

The IMPI tracking modem with external battery box has been tested in accordance with Mil Std 810F and 461C:

- Low temperature operational test
- High temperature operational test
- High temperature storage test
- Low temperature storage test
- Rain test
- Altitude test
- Temperature and humidity cycle test
- Blowing dust test
- Mechanical shock test
- Vibration test
- Drop tests
- EMC

ACCESSORIES

1. Integrated GPS, GPRS, Iridium antenna cluster;
2. AC Adaptor / Battery Charger;
3. Battery Box (compatible with A43 tactical radio battery);
4. Carry bag;
5. Windows/Linux configuration application to configure IMPI (RS232 or over the air for a subset of parameters) as follow:
 - Tactical Data Link related node parameters
 - Encryption keys
 - Host server IP addresses (up to 5)
 - Update rates
 - Radio types

