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GLOBAL SATELLITE COMMUNICATIONS

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IRIDIUM Short Burst Data

Two-way data transmission

M2M

Iridium SBD is a simple and efficient network transport capability for transmitting short data messages between equipment and centralized host computer systems. It is an affordable, reliable, 2-way transport between remote terminals connected to field instruments - like sensors or switches, and the central site responsible for monitoring them.

Deployed in Mission Critical Applications

The possibilities are endless. Iridium SBD solutions are deployed to provide long-range identification and tracking (LRIT) of ships at sea, automatic flight following (AFF) for aircraft in the air, transmitting warnings from tsunami buoys in the open ocean, and even monitoring the safety of individuals when working alone on pipelines on the northern and southern poles

Features and Benefits

- **High Send and Receive Messages**
  Send Mobile Terminated messages up to 1890 characters and receive Mobile Oriented messages up to 1960 characters with a low latency of typically less than 1 minute.
- **Easy to Use**
  For installation simply turn on an enabled device and point outdoor antenna to sky for automatic network registration.
- **Increased Efficiency**
  Increases efficiencies in resource planning and logistics.
- **Receivers**
  Service accesses via compact receivers; 9602, 9603 (MT 270bytes/MO 340bytes), Core 9523 (MT 1890bytes/MO 1960bytes)
- **Global Coverage**
  The only truly global satellite communications service.

Applications

- Asset tracking
- Fleet management
- Telemetry
- Pipeline monitoring
- Disaster and emergency response
- Environmental monitoring
- Oceanographic data
- Homeland security
- Regulatory compliance
- Remote worker safety
- Network monitoring

Iridium Devices SBD capability

- Iridium 9622B L-Band Transceiver (SBD capability)
- Iridium 9602 Short Burst Data modem
- Iridium 9603 Short Burst Data modem
- Iridium Core 9523 Transceiver (SBD capability)

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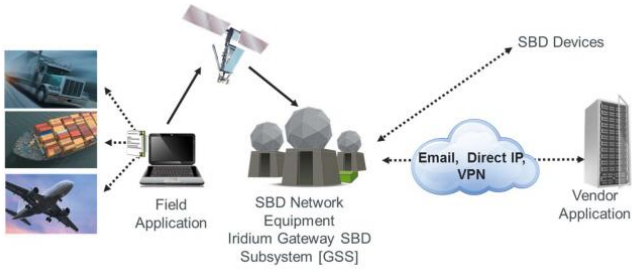
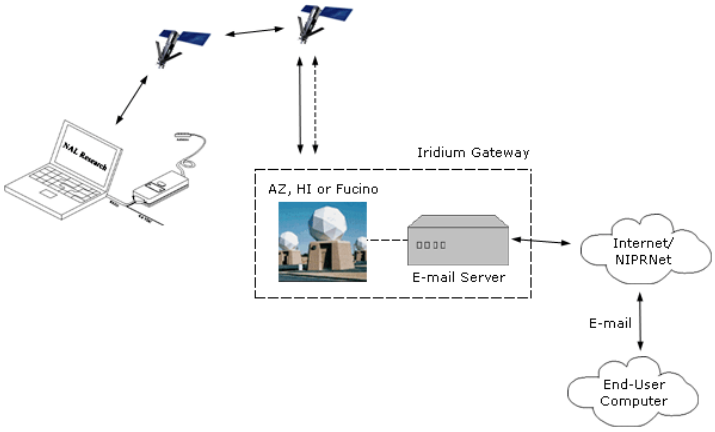
How Does It Work



Short Burst Data or SBD is a simple and efficient bi-directional transport capability used to transfer messages with sizes ranging from zero (a mailbox check) up to 1960 bytes for Mobile Originated (MO-SBD) and zero to 1890 bytes for Mobile Terminated (MT-SBD). SBD takes advantage of signals within the existing air interface, without using the dedicated traffic channels. As a result, small amounts of data can be transferred more efficiently than those associated with circuit-switched data calls.

For MO-SBD, messages are transmitted across the Iridium satellite network utilizing inter-satellite links to reach the gateway. From there messages are disseminated to end-users via e-mail (SMTP). For MT-SBD, messages are sent to the Iridium gateway via e-mail from an end-user host computer. From there messages are delivered to an ISU immediately following a MO-SBD or "mailbox check" by an ISU. Global network transmit latency for delivery of messages ranges from ~5 seconds for short messages to ~20 seconds for maximum length messages. This latency is the elapsed time before the Iridium SBD system sends the SBD message to its e-mail destination. Additional latency introduced by the Internet/NIPRNet or the customer's host system is not in Iridium's control. There are addition delivery MO-SBD and MT-SBD methods via the DoD gateway.



Additional Information

Elements of the Iridium end-to-end SBD architecture

- Field Application (FA)
- Iridium Subscriber Unit (ISU)
- Iridium satellite constellation
- Gateway SBD Subsystem (GSS) located at the Iridium gateway
- Internet
- Vendor Application (VAS)

Process

- Remote Applications send Mobile Originated SBD (MO-SBD) messages from an Iridium 9522 LBand Transceiver (LBT).
- The application microcontroller or microprocessor communicates with the LBT via AT commands over an RS232 connection.
- The application loads the message into the LBT and instructs it to send the message, which traverses the Iridium satellite network via inter-satellite links to reach the Iridium Gateway.
- From there, the message is transferred to the Internet and onto a Value Added Reseller's host computer system where it is stored in a database for further data processing.

Mobile Terminated (MT) SBD messages

- Sent to the Iridium Gateway via the Internet from the Value Added Reseller's host computer system.

Interface

- The interface between the FA and the ISU is a serial connection with extended proprietary AT commands.
- The interface is used to load and retrieve messages between the ISU and the Field Application

Message Length

- The maximum length of a MOSBD message is up to 1960 bytes.
- The maximum length of a MTSBD message is up to 1890 bytes.

Latency

- Global network transmit latency for message delivery ranges from 5 seconds for messages of 70 bytes to approximately 20 seconds for maximum length messages. (Additional latency may occur across the Internet.)

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IRIDIUM IoT Terminal Comparison Chart

Iridium® IoT

Reliable Data Connectivity for Fixed and Mobile Use. Absolutely Everywhere.

Iridium's low-latency Internet-of-Things (IoT) solutions leverage the power of the world's furthest reaching network to extend the high value of intelligent data beyond the barriers of terrestrial networks. Designed to be integrated into end user applications, this range of proven hardware allows partners and customers to quickly utilize Iridium's unrivalled global network to communicate with their assets in virtually any market.




	Iridium 9602	Iridium 9603	Iridium Core 9523	Iridium 9522B
FORM FACTOR	Board-to-Board	Board-to-Board	Board-to-Board	Black Box
DIMENSIONS	41 x 45 x 13mm	31.5 x 29.6 x 8.1mm	70.44 x 36.04 x 8.9mm (H)	162 x 81 x 28mm
INTERFACES	AT + Command	AT + Command	AT + Command	AT + Command, RS 232 Digital/Analogue
POWER REQUIREMENTS	+5 V +/- 0.5 V	+5 V +/- 0.5 V	+3.2 V to +6 V	+4.0 VDC to +32 VDC
POWER CONSUMPTION	Idle 35 mA Transmit 140 mA Receive 40 mA	Idle 34 mA Transmit 145 mA Receive 39 mA	Idle 70 mA Transmit 300 mA Receive 110 mA	Idle 220 mA Transmit 800 mA Receive 800 mA
OPERATING TEMP RANGE	-40°C to +85°C	-40°C to +85°C	-30°C to +70°C	-30°C to +70°C
VIBRATION AND SHOCK	EN60068-2-14:2000 EN 60068-2-36:1996 EN60068-2-27:1993 J1455	EN60068-2-14:2009 IEC60068-2-64: 2008 EN60068-2-27: 2009 SAE J1455	EN60068-2-14:2009 IEC60068-2-64: 2008 EN60068-2-27: 2009 SAE J1455 MILSTD 810	EN60068-2-14:2000 EN60068-2-32:1993 EN60068-2-27:1993 EN 60068-2-6:1996 SAE J1455:1994
TYPICAL APPLICATIONS	Personnel and asset tracking, fleet management, environment and safety monitoring, remote automation and control	Personnel and asset tracking, fleet management, environment and safety monitoring, remote automation and control	Maritime, aviation and mobile markets	Maritime, aviation and mobile markets
DEVELOPMENT KIT AVAILABLE	YES	YES	YES	N/A
SERVICES	SBD℠, Iridium Burst®	SBD℠, Iridium Burst®	SBD℠, CSD, SMS, RUDICS, TELEPHONY	SBD℠, CSD, SMS, RUDICS, TELEPHONY
AVERAGE LATENCY	<20 seconds per 340 bytes (MO)	<20 seconds per 340 bytes (MO)	<45 seconds for 1KB message (MO and MT)*	<45 seconds for 1KB message (MO and MT)*
MAJOR NETWORK AND REGIONAL CERTIFICTIONS	FCC, IC, RED, CE, Anatel, Australia, RoHS, others	FCC, IC, RED, CE, Anatel, Australia, RoHS, others	FCC, IC, RED, CE, Anatel, Australia, RoHS, others	FCC, IC, RED, CE, Anatel, Australia, RoHS, others

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