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Iridium™ SMS and SBD
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What is SMS?

Short Message Service (SMS) is the short text messages that are sent from cell phone to cell phone. The phone is able to both receive and send the SMS message. Typing a message or response is done using the phone keys where one key can be many characters and you keep hitting the key till the correct character comes up. To date Iridium™ has only been able to receive SMS on the phone. SMS is available on the 9505 (with latest software upgrade). It presently works with a post-paid SIM and the pre-paid SIM card. The 9505A has both incoming and out going SMS.

You must have the voice service active in the SIM for SMS to work as an SMS message is sent to the voice number of the SIM.

How do I find the version of firmware in my 9505 handset to see if return SMS is available?

1-Turn the unit on
2- wait for the dancing phone to stop
3- press *#91# or star pound 91 pound

LAC307 is the version with return SMS.

What is SBD?

Short Burst Data (SBD) is the sending and receiving of about 2k byte messages or 120 character text messages from the 9522 Model. The Model 9522 is an Iridium™ telephone/modem which features a 25 pin data connector and analog telephone interface.

You do not have to activate voice services on the SIM for SBD to operate.

When activated, an SBD only SIM will have a data number assigned. This will allow you to make a data call to the SIM, but not from the SIM. To make a call from the SIM, the voice/data calling service must be active. This incurs and additional monthly charge.

How are SBD and SMS priced?

SBD is priced at $1.25/kb to $1.80/kb with a minimum cost is $0.05 per message for anywhere in the world. Message check are free if mail is waiting (and therefore downloaded) otherwise the cost is about $0.03/check.

SMS is priced at $0.45 to $0.55 per message sent from the handset. Incoming SMS is free. The cost is the same for any size message and the maximum message size is 160 characters.

For exact pricing please consult a specific service plan.

How do I send SMS to a Iridium handset?

SMS limits message size to 120 characters. SMS to the phone can be sent via email using the telephone number "at" msg.iridium.com, for example; 881621421111@msg.iridium.com. Only the first 120 characters of the message body are sent from the email.

You can also send SMS from www.skyhelp.net

How is Short Burst Data (SBD) Sold?

You must buy the service through a dealer and very few Iridium dealers specialized in data service.

How do you access SBD or SMS?

Both services can be accessed using AT commands at the data port of the unit. There is only one input and one output data buffer. Messages must be polled from the Iridium message switch; there is no automatic receiving of data. Your data application must manage the input and output of messages.

You can send short messages of 120 characters using a text mode AT command to the SBD buffer. The longer messages of up to 1850 characters must be sent using the base64 format in the message.

Where do you get the 9522 telephone/modem?

The 9522 is available from PSN, NAL, and other dealers, however this is only a base modem the must be housed, given a power supply, antenna and attached to an application. The 9522 housed in a very sturdy metal box with a DB25 connector. The connector is non-standard and includes pins for power, data and voice connections. There is also an external TNC-F connector for the Iridium antenna.

NAL and PSN have 9522 units that include a built-in GPS receiver. This unit requires a separate GPS antenna, but shares the same RS-232 connector as the Iridium modem. A built in microprocessor allows for position auto-reporting. Power supplies, cables and antennas are also available.

What is the SBD Protocol?

The SBD functions; read/write to buffer, send/receive to transceiver are communicated to the modem with AT commands. Additional AT commands are provided for GPS information with the built-in GPS model.

Messages are passed through the system using Base64 encoding.

To send a message from the mobile, you must; encode it to Base64, load it to the modem transmit buffer, and send the message. The message is received as an email message with a base64 attachment at the mobile's email address.

To send a message to the mobile, you must; send an email to the mobile's email address; the mobile must poll for traffic, the message is received at the mobile as base64 encoded, the mobile unit must extract the Base64 message from the modem and decode the Base64 encoded message.

The modem does have a command that allows the auto encoding/decoding of 120 character text messages. It is intended for testing because there is no indication given of the content of an incoming message, i.e., binary or text.

How can I do positioning with SBD?

Each Iridium SBD message includes a position report, calculated with a Doppler shift calculation from the satellite. The location includes the probable error (CEPradius) in km. Shown below are 2 messages received by a user via email from the Iridium message switch.

Example message 1;

MOMSN: 84
MTMSN: 0
Time of Session (UTC): Sat Dec 6 02:19:36 2003
Session Status: TRANSFER OK
Message Size (bytes): 0

Unit Location: Lat = 38.726175 Long = -77.526083
CEPradius = 1

Example message 2;

MOMSN: 5
MTMSN: 0
Time of Session (UTC): Fri Nov 21 04:06:34 2003
Session Status: TRANSFER OK
Message Size (bytes): 4

Unit Location: Lat = 38.721297 Long = -77.481171
CEPradius = 7

Message is Attached.

In message 1, the mobile was checking for messages, so no messages were transferred (Message Size (bytes):0. In message 2 a small 4 byte message was transferred from the mobile. More details about SBD messages can be found in the Command Manual.

If the included Doppler Shift location is not sufficient, you will have to use GPS (or GPS-like) positioning. Doppler Shift locations are not as accurate as GPS with a probability error in the tens of kilometers. It can also be fooled by a overhead reading, so Doppler Shift positions must be averaged.

We have a 9522 unit with a GPS built-in for NAL Research. This unit allows you to use the same RS-232 port for both SBD and GPS, which saves you having to house, power, and wire a GPS board. Otherwise you will need to mount and control your own GPS board.

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