

**Release Notes
9522B Firmware
Version ST10001**



Release Note 9522B Firmware Version ST10001

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Iridium Subscriber Equipment Firmware Engineering

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1 Release description and purpose

This note covers the 9522B Firmware Release ST10001, upgrade from HT09005. This release corresponds to the HT09014 release of 9555 and contains transceiver updates contained there. ST10001 fixes defects noted below in Changes chapter 5.

2 Version Information

The following versions are reported by the various components:

Transceiver board firmware: ST10001

On an S2, via AT+CGMR, this release reports as follows:

```
Call Processor Version: ST10001
DSP Version: 0x002b
ASIC Version: 32.1
NVM Version: S2_0003
BOOT Version: BOOT0bb8/HW14(S2d)/02/RAW0a.02
OK
```

Note that the “HW14” is a reflection of the hardware revision of the PCB. Lower numbers reflect an older revision.

3 Upgrade Tool

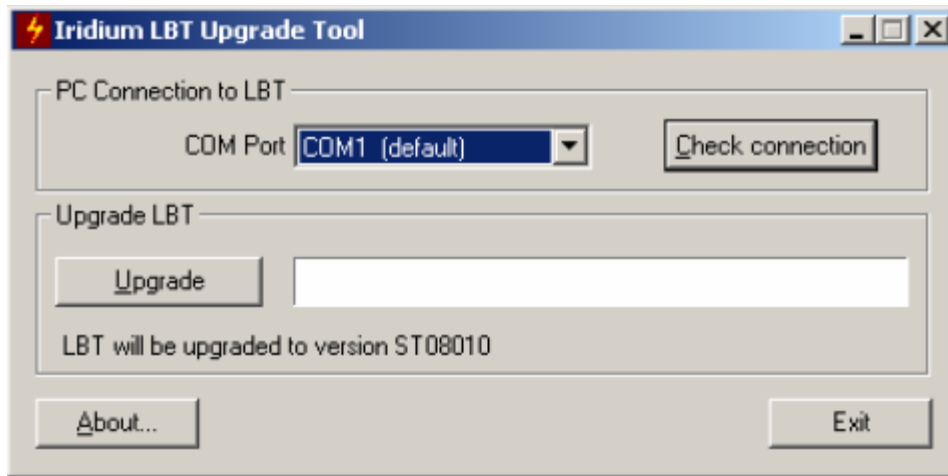
The release archive contains an upgrade tool. The method for reflashing the firmware is the same as with 9522A. See the following documentation for instructions on its use, contained in the distribution zip file.

4 Required Equipment/Software :

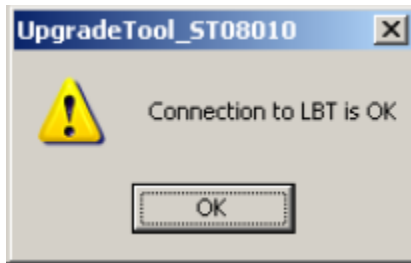
- A method of “breaking out” the Serial Data interface and Power Pins from the IDC connector on the 9522B. There are a number of ways to accomplish this, including:
 - 1) A special 9522B re-flash cable. This cable may be handmade according to pinout specifications found in **9522B L-Band Transceiver Product Information Guide.pdf**
 - 2) A third-party “breakout box”, like the “DB25 Data Kit”, Model HRC-24-8 from NAL Research (www.nalresearch.com/Accessories.html) together with an Iridium S2 adapter cable.
 - 3) A custom solution.
- 5VDC power supply.
- A Windows-based PC with a serial/COM port.
- “*Iridium LBT Upgrade Tool*” software. (Example: “UpgradeTool_ST08010.exe”, where “ST08010” indicates the software version that will be flashed onto the 9522B.)

5 Re-flashing Procedure:

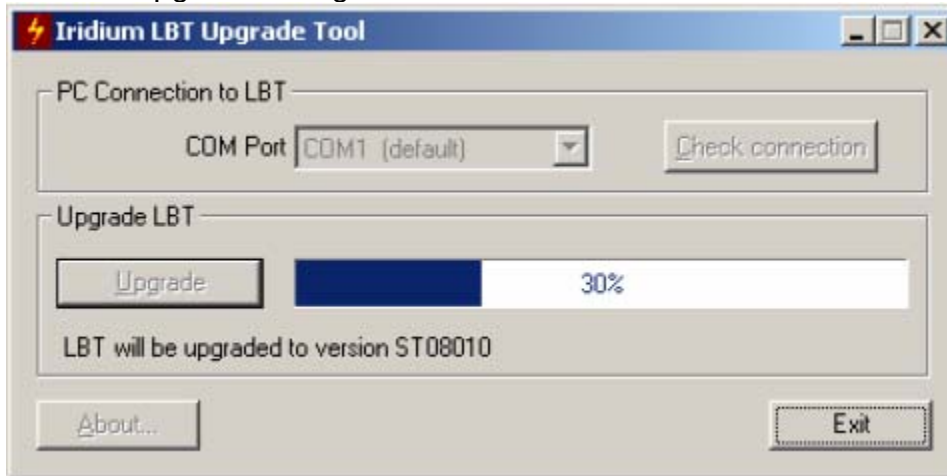
1. Establish a serial connection between the 9522B and a PC, and apply 5VDC power to the 9522B.
2. Launch the Iridium LBT Upgrade Tool and choose the appropriate COM port for your PC.



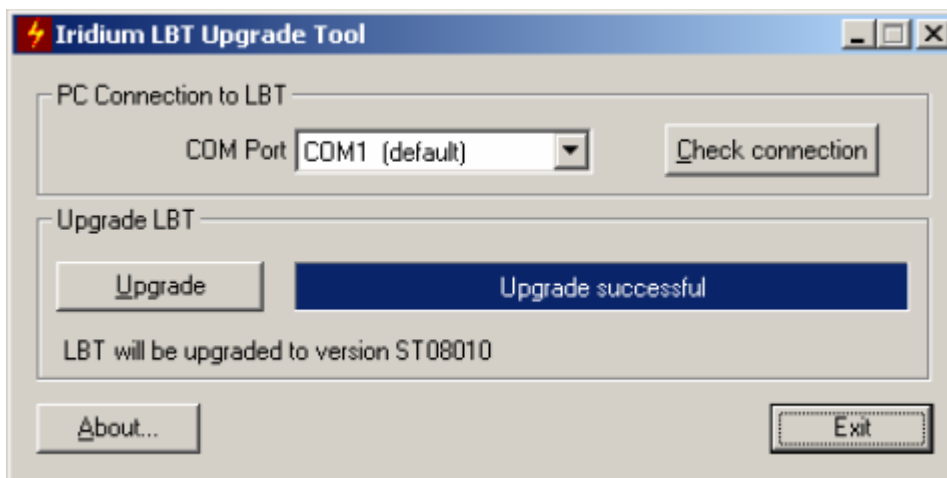
3. Click “Check connection”. The following window should appear. (Note: The LBT is only in “upgrade mode” for 30 seconds after power-up. If you get a failure message, recheck connections, power-cycle and try again.)



4. Click "Upgrade". Progress will be indicated as shown below.



5. When the "Upgrade successful" message is displayed, click "Exit" or repeat steps 1-4 to re-flash additional units.



6 Test Summary

Automated regression testing was performed to verify functional features.

Data performance testing was performed manually.

Voice performance testing was performed for short, medium and long duration calls voice calls, MOS audio analysis, setup success rates, and drop rates.

6.1 Known Issues

This section describes issues identified during testing. Iridium R&D Engineering is engaged in continuing diagnosis and development of corrective measures to be included in future releases.

There are no known issues.

6.2 Performance

Performance test results were seen as compliant with product requirements. However, as system performance undergoes continual monitoring and refinement, future 9522B firmware releases may contain further performance improvements.

6.3 Functional

Functional test results are seen as compliant with product requirements.

7 Changes

7.1 Changes in release ST10001

7.1.1 Enhancements

3175 Add GPS Path Enable/Disable Feature. This provides a new GPS Path Disable mode with decreased power consumption. This feature will be controlled by a new AT+GPSSTA=<n> command.

7.1.2 Bugs fixed

3052 AT+CLCC incorrectly reported 000, now correctly gives a 005 result for call waiting.
3198 MO call with busy PSTN results in AT interface unresponsive, now responds busy within 30 seconds.
3258 NO CARRIER seen in Quiet Mode at the end of some calls unlike 9522A, no longer appears.

7.2 Changes in release ST09005

7.2.1 Enhancements

Note: While these capabilities are implemented in Iridium ISU, they may not yet be supported in the Iridium network. An Iridium Technical Bulletin will be provided when the network will support the following feature.

1968 Call Hold capabilities implemented
2026 Call Waiting capabilities implemented
2622 Add +CCWA AT command

7.2.2 Bugs fixed

2006 DPL connection closes and re-opens unexpectedly; DPL timeouts
2160 Failure of AT+MSVLS=1 DTMF mute AT command
2477 DPL handset erratic behaviour with H2
2705 Startup behavior improved
2737 ISU may reboot after 7 weeks continuous running

7.3 Changes in release ST08010

7.3.1 Enhancements

7.3.2 Bugs fixed

1775 - GPS receiver logic modified to ensure constant availability.