

SA

E6651A Mobile WiMAX™ Test Set Revision History

epsg1109018

Application Compatibility Matrix:

E6651A	E6651A API	N6421A	N6421A API	E6655A	E6655A API	N6422C	N6423C
5.6.1.0	6.6.1.0	6.6.1.0	6.6.1.0	6.6.1.0	6.6.1.0	-	-
5.5.3.0	6.5.3.0	6.5.3.0	-	6.5.3.0	6.5.3.0	C.06.00	C.06.00
5.5.1.0	6.5.1.0	6.5.1.0	-	6.5.2.0	6.5.2.0	-	-
5.5.1.0	6.5.1.0	6.5.1.0	-	6.5.1.0	-	-	-
5.4.2.0	6.4.2.0	6.4.2.0	-	6.4.2.0	-	C.05.00	C.05.00
5.4.1.0	6.4.1.0	6.4.1.0	-	6.4.1.0	-	-	-
5.3.3.0	6.3.3.0	6.3.1.0	-	6.3.1.0	-	C.04.00	C.04.00
5.3.1.0	6.3.1.0	6.3.1.0	-	6.3.1.0	-	C.03.00	C.03.00
5.2.1.1	5.2.1.0	5.2.1.1	-	5.2.1.0	-	C.02.05	C.02.05
5.1.1.0	5.1.1.0	5.1.1.0	-	5.1.1.0	-	-	-
5.0.1.0	5.0.1.0	5.0.1.0	-	5.0.1.0	-	-	-

E6651A Instrument Patches

Other software components within the E6651A occasionally require updating (for example, internal drivers for hardware modules). These components are independent of firmware revisions and as such, are not included with firmware releases. However, they can be downloaded as separate patches to be installed as required. Agilent recommends that all available instrument patches are installed to ensure the best performance of the E6651A. Refer to individual release notes for patches and further details. If available, patches can be downloaded from the E6651A section of www.agilent.com/find/e6651a_software

E6651A Firmware Revision 5.6.1.0 – May 14th 2010 – Feature Release

Please note - Compatibility: This firmware should only be installed on Hardware Revision A.1.0 Test Sets. Do not attempt to upgrade a Test Set currently operating with firmware versions earlier than 5.0.1.0.

To upgrade from an earlier version of firmware please contact your local Agilent sales office. Local Agilent sales offices are listed at <http://www.agilent.com/find/assist>.

New Features

- Enhanced throughput up to ~ 15Mbps with DL UDP Test Mode on A.1 HW
- Enhanced throughput up to ~ 11.1Mbps End-to-End with E6655A Lab Application on A.1 HW
- PHY repetition of broadcast messages is controlled separately from other DL messages (excluding DLMAP and ULMAP, which already have individual PHY repetition settings)

- DCD/UCD transmission interval is now user-configurable
- MOB_SCN-RSP message can be populated with the parameters requested by the MS automatically
- Added user-configurable cross-coupling between channel 1 and channel 2 to test MIMO capability
- EAP/TLS support added
- E6651A now prompts to upgrade firmware if new firmware is found on USB memory during boot up
- Debug files can be saved to USB memory in the event of a Fatal error occurring for analysis by Agilent
- In the event of a non-fatal internal error in the E6651A, indicator values on the E6651A screen will be highlighted in red text.
- BS EIRP can be coupled with the Source output power of the E6651A
- New CINR Test Mode range added to extend the range to -5dB CINR (note: maximum DL transmit power is reduced in Extended CINR mode)
- It is now impossible to select both E6655A mode and TTCN mode at the same time

Profile Compatibility Matrix:

BSE : 10MHz	5.6.1.0	A104.1030.2043-3900.0000.3141
BSE : 8.75MHz	5.6.1.0	A004.1030.2043-3800.0000.3141
BSE : 7MHz	5.6.1.0	A304.1030.2043-B305.0000.3141
BSE : 5MHz	5.6.1.0	A204.1030.2043-B204.0000.3141

Previous Release Information

E6651A Firmware Revision 5.5.3.0 – August 28th 2009 – Feature Release

Please note - Compatibility: This firmware should only be installed on Hardware Revision A.1.0 Test Sets Do not attempt to upgrade a Test Set currently operating with firmware versions earlier than 5.0.1.0.

To upgrade from an earlier version of firmware please contact your local Agilent sales office. Local Agilent sales offices are listed at <http://www.agilent.com/find/assist>.

New Features

- Add calling station ID and called station ID to EAP messages
- 2nd Trigger in DCD added for handover test flexibility
- Support MOB_NBR-ADV with less than three neighbors
- Automatic or manual sending of MOB_BSHO-REQ
- Additional settings for Sleep Mode: Start Frame #, SLPID

Maintenance

- Increased readability of Connection Status on front panel display

Profile Compatibility Matrix:

BSE : 10MHz	5.5.3.0	A104.1028.2041-3900.0000.3114
BSE : 8.75MHz	5.5.3.0	A004.1028.2041-3800.0000.3114
BSE : 7MHz	5.5.3.0	A304.1028.2041-B305.0000.3114
BSE : 5MHz	5.5.3.0	A204.1028.2041-B204.0000.3114

E6651A Firmware Revision 5.5.1.0 – April 30th 2009 – Feature Release

Please note - Compatibility: This firmware should only be installed on Hardware Revision A.1.0 Test Sets Do not attempt to upgrade a Test Set currently operating with firmware versions earlier than 5.0.1.0.

To upgrade from an earlier version of firmware please contact your local Agilent sales office. Local Agilent sales offices are listed at <http://www.agilent.com/find/assist>.

New Features

- Sleep Mode – supports both Base Station (BS) and Subscriber Station (SS) initiated Sleep Modes
- Idle Mode – improved configurability of DREG-CMD for Idle Mode
- Handover – supports BS initiated Handover - See *Note 1
- Authentication – support for TTLS Authentication using an additional AAA Server
- UL 2nd Zone – support for Uplink 2nd Zone with flexible start position and symbol offset
- HARQ – improved configuration menu for UL and DL HARQ

* **Note 1** - This release also contains support for SS initiated handover. A single trigger event for SS handover initiation is currently supported. SS that require a second trigger (e.g., for Scanning Request and for SS initiated handover) require an alternate method for triggering one of these procedures. A second trigger will be available in a future firmware release. Please contact Agilent Technical support at wireless_test_support@agilent.com for more information.

Profile Compatibility Matrix:

BSE : 10MHz	5.5.1.0	A104.1027.2040-3900.0000.3107
BSE : 8.75MHz	5.5.1.0	A004.1027.2040-3800.0000.3107
BSE : 7MHz	5.5.1.0	A304.1027.2040-B305.0000.3107
BSE : 5MHz	5.5.1.0	A204.1027.2040-B204.0000.3107

E6651A Firmware Revision 5.4.2.0 – October 31st 2008 – Maintenance Release

Please note - Compatibility: This firmware should only be installed on Hardware Revision A.1.0 Test Sets Do not attempt to upgrade a Test Set currently operating with firmware versions earlier than 5.0.1.0.

To upgrade from an earlier version of firmware please contact your local Agilent sales office. Local Agilent sales offices are listed at <http://www.agilent.com/find/assist>.

Maintenance Release

- DL Fragmentation supported when used with E6655A.
- UL Power Control IE addressed to Basic CID and not broadcast CID.

Profile Compatibility Matrix:

BSE : 8.75MHz	5.4.2.0	A004.1027.2035-3800.0000.3091
BSE : 10MHz	5.4.2.0	A104.1027.2035-3900.0000.3091
BSE : 7MHz	5.4.2.0	A304.1027.2035-B305.0000.3091
BSE : 5MHz	5.4.2.0	A204.1027.2035-B204.0000.3091

E6651A Firmware Revision 5.4.1.0 – September 4th 2008 – Feature Release

Please note - Compatibility: This firmware should only be installed on Hardware Revision A.1.0 Test Sets

New features

- Idle Mode- supports both Base Station and Subscriber Station initiated Idle Modes
- Enhanced Throughput - supports higher data rates in both Uplink and Downlink
- DLMAP Logging - Enables Downlink Map logging in N6421C Protocol Logging Application
- Enhanced CQICH reporting - MIMO feedback and PHY CINR settings added

Profile Compatibility Matrix:

BSE : 8.75MHz	5.4.1.0	A004.1027.2034-3800.0000.3084
BSE : 10MHz	5.4.1.0	A104.1027.2034-3900.0000.3084
BSE : 7MHz	5.4.1.0	A304.1027.2034-B305.0000.3084
BSE : 5MHz	5.4.1.0	A204.1027.2034-B204.0000.3084

E6651A Firmware Revision 5.3.3.0 – June 13th 2008 – Feature Release

Please note - Compatibility: This firmware should only be installed on Hardware Revision A.1.0 Test Sets

Profile Compatibility Matrix:

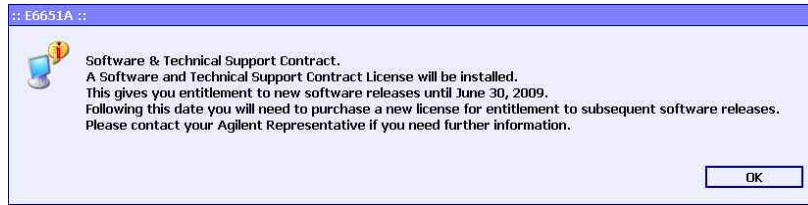
BSE : 8.75MHz	5.3.3.0	2401. 1025. 2030-3800. 0000. 3069
BSE : 10MHz	5.3.3.0	2501. 1025. 2030-3900. 0000. 3069
BSE : 7MHz	5.3.3.0	2701. 1025. 2030-B305. 0000. 3069
BSE : 5MHz	5.3.3.0	2205. 1025. 2030-B204. 0000. 3069

New features

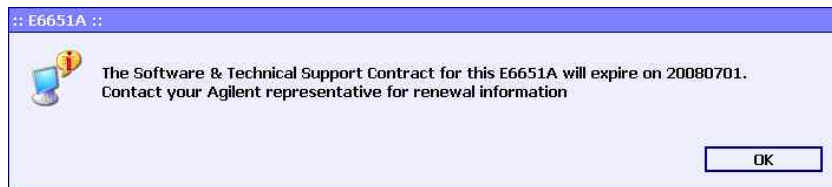
- **Implementation of the “source” IP Address settings for Ping and UDP Tests.** This enables you to decouple the E6651A Test Set WiMAX IP address from its rear panel LAN connection IP Address.
Access this feature by pressing **Mode** > **BS Emulator** > **Settings** > **Test Setting** > **SS IP Setting**. Press **Source** and **Destination** and enter the required values.

For remote access via the API use E6651_SetSSIPSource and E6651_GetSSIPSource.
 - Default Source IP address: 100.100.100.100
 - Default Destination IP address: 100.100.100.10
- **Implementation of Software and Technical Support Contract (STSC), E6651AS-1SY.** Agilent has recently introduced a Software & Technical Contract for the E6651A Mobile WiMAX Test Set (E6651AS-1SY). This contract entitles customers to software updates and access to technical support for a fixed duration (usually 1 year) and is referenced as E6651AS-1SY. For units purchased on or before 1st May 2008 installation of firmware version 5.3.3.0 (or above) automatically installs an STSC (option 1SY) license which expires on 30th June 2009. At this time it will be necessary to renew the STSC to receive subsequent firmware releases and technical support.
For additional information refer to <http://agilent.com/find/E6651A> and contact your local Agilent representative.

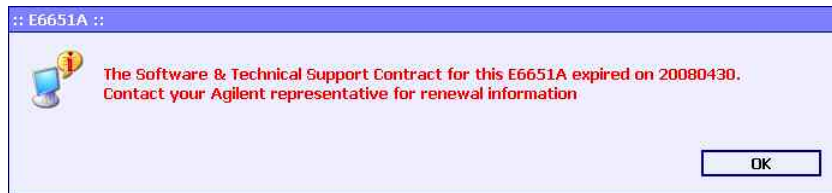
- The following screens are part of the E6651A option 1SY implementation:
 - To indicate the installation of the STSC license:



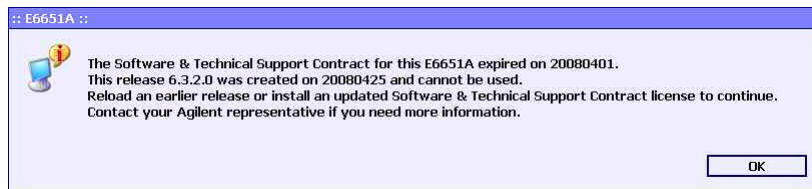
- 90 day warning of STSC license expiry. Contact your Agilent sales office for renewal of STSC if required:



- Expiry of STSC license has been reached. No subsequent firmware updates can be installed on this Test Set:



- Failed attempt to load firmware released after the expiry of the STSC license:



Note: Do not attempt to upgrade a Test Set currently operating with firmware versions earlier than 5.0.1.0.

To upgrade from an earlier version of firmware please contact your local Agilent sales office. Local Agilent sales offices are listed at <http://www.agilent.com/find/assist>

E6651A Firmware Revision 5.3.1.0 – March 28th 2008 – Feature Release

Note: Do not attempt to upgrade a Test Set currently operating with firmware versions earlier

than 5.0.1.0.

To upgrade from an earlier version of firmware please contact your local Agilent sales office. Local Agilent sales offices are listed at <http://www.agilent.com/find/assist>.

New features

- MAP Support - can select normal and compressed MAP
- 7 MHz BW - supports 7MHz BW profiles 4B, 5B, 5LB, and 5HB
- IP Protocol - Supports IPv6 protocol to enable end-to-end operation
- IP Protocol – Can generate IPv6 based packet for DL Ping and UDP Test
- Save/Recall - Save/Recall up to 9 Test Set setups

E6651A Firmware Revision 5.2.1.1 – January 18th 2008 – Feature Release

Please note - Compatibility:

- This firmware is not compatible with versions 5.1.x.x or earlier of the E6651_API.dll file. If you are using the Remote Interface, you must upgrade to version 5.2.1.0 of the E6651_API.dll.
- This firmware is not compatible with version 5.1.x.x or earlier of E6655A. Users of E6655A must upgrade to version 5.2.1.0 of E6655A.
- This firmware is not compatible with version 5.1.x.x or earlier of N6421A. Users of N6421A must upgrade to version 5.2.1.1 of N6421A

Note: Do not attempt to upgrade a Test Set currently operating with firmware versions earlier than 5.0.1.0.

To upgrade from an earlier version of firmware please contact your local Agilent sales office. Local Agilent sales offices are listed at <http://www.agilent.com/find/assist>.

New features

- IPX LAN Protocol no longer required - Machine ID facility replaced by IP address
 - Support for N6422C/N6423C Wireless Tests Manager applications implemented
 - ARQ ACK Type (Cumulative ACK, Cumulative ACK with Selective ACK, and Cumulative ACK with Block Sequence ACK) implemented
 - ARQ End-to-end implemented
 - HARQ SISO implemented (ACK/NACK signalling for RCT Test)
 - All Tests supported in 5 MHz profiles
 - New Power vs. Time display
 - Settings now cannot be changed while a test is running
 - Colour coding added to Profile Manager – Black: compatible, Grey: incompatible, Red: cannot activate
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- Logging of Downlink Ping and UDP Tests

E6651A Firmware Revision 5.1.1.0 – December 14th 2007 – Feature Release

Please note - Compatibility:

- This firmware is not compatible with version 5.0.1.0 of the E6651_API.dll file. If you are using the Remote Interface, you must upgrade to version 5.1.1.0 of the E6651_API.dll.
- This firmware is not compatible with version 5.0.1.0 or 5.0.1.1 of E6655A. Users of E6655A must upgrade to version 5.1.1.0 of E6655A.
- This firmware is not compatible with version 5.0.1.0 or 5.0.1.1 of N6421A. Users of N6421A must upgrade to version 5.1.1.0 of N6421A

Note: Do not attempt to upgrade a Test Set currently operating with firmware versions earlier than 5.0.1.0.

To upgrade from an earlier version of firmware please contact your local Agilent sales office. Local Agilent sales offices are listed at <http://www.agilent.com/find/assist>.

New features

- Added support for the Agilent N6430A series Protocol Conformance Test and Development Solution
- Added LAN IP address setting for the N6430A series Protocol Conformance Test and Development Solution
- Added measurement integrity indicator to the API command set
- Added user-settable DUT IP address for DL Ping and DL UDP tests
- Added CQICH Report to BSE Display and API command set
- Added option of CC coding scheme in addition to CTC
- Added user settable Uplink Modulation type
- Added settable Re-use factor
- 3.A-10MHz profile activated by default

Profile Compatibility Matrix:

BSE : 1.A (8.75M)	5.1.1.0	2062.1011.2015-3011.0000.3041
BSE : 3.A (10MHz)	5.1.1.0	2062.1011.2015-3106.0000.3041

Defects from 5.0.1.0 fixed in 5.1.1.0

- E6651A Ping Test PER is 0% during test when packets are lost
- E6651A PER not updated when Ping Test is stopped

Changes to E6651A Operation

DL Ping and DL UDP Tests

Version 5.0.1.0 of the E6651A used IP address 100.100.100.10 as the destination IP address and IP address 100.100.100.100 as the source IP address for the DL Ping and UDP tests.

Version 5.1.1.0 adds the flexibility to configure the source and destination IP addresses to any valid IP address.

The source IP address is set by configuring the E6651A IP address on the **System > Network Setting** menu. The IP address of the E6651A will be used as the source address of the DL Ping and DL UDP tests. The gateway and subnet mask should also be set. The settings are not stored until the **Apply** soft-key is pressed after setting the IP Address, Subnet Mask and Gateway values. It is recommended that the Ethernet port of the E6651A is connected to an active Ethernet port on a computer, office LAN or hub/switch when the **Apply** soft-key is pressed in order to ensure the settings can be validated and stored.

The destination IP address used by the DL Ping and DL UDP tests is configured in the Test Parameter Setting menu (**Mode > Base Station Emulator > BSE and Test Settings > Test Parameter Setting > SS IP Setting > Destination**). The source (E6651A) and destination IP addresses should be on the same subnet.

Modulation and Coding Scheme Selection

Version 5.1.1.0 introduces the ability to modify the Coding Scheme from Convolutional Turbo Coding (CTC) to Convolutional Coding (CC). This setting is available on the **Mode > Base Station Emulator > BSE and Test Settings > General BSE Configuration** menu. The Modulation Mode (CTC / CC) setting can only be modified when the BSE is not active. Note the Pause button toggles the BSE between active and inactive modes. Changing between CC and CTC types changes the Coding Scheme used for all signalling and data communication, including both use with the E6655A Lab Application and the DL Ping, DL UDP and UL Padding tests.

The Modulation and Coding Rate used for the uplink can also be modified using the **UL Modulation** soft-key on the **Mode > Base Station Emulator > BSE and Test Settings > General BSE Configuration** menu. This setting affects all uplink transfers, excluding the UL Padding test, which has an independent UL Modulation setting.

E6651A Firmware Revision 5.0.1.0 – July 6th 2007 - First Release

This is the firmware version shipping with the Test Set at launch.

This firmware is compatible with the following versions of:

- Agilent E6655A WiMAX Lab Application – Version 5.0.1.0 required
- Agilent N6421A WiMAX Protocol Logging and Analysis – Version 5.0.1.0 required

Note: Do not attempt to upgrade a Test Set currently operating with firmware versions earlier than 5.0.1.0.

To upgrade from an earlier version of firmware please contact your local Agilent sales office.

Local Agilent sales offices are listed at <http://www.agilent.com/find/assist>.

BSE : 1.A (8.75M)	5.0.1.0	2058.0190.0291-3007.0000.3006
BSE : 3.A (10MHz)	5.0.1.0	0000.0190.0291-0003.0000.3006

When released, firmware updates are available for download from <http://www.agilent.com/find/E6651A>. To receive notification of updates, please subscribe to the Agilent e-mail update service at

<http://www.agilent.com/find/emailupdates>.