N4010A-02C

S E R V I C E   N O T E

Supersedes:
N4010A-02B

N4010A Wireless Connectivity Test Set

Serial Numbers: ALL

N4010A Firmware Compatibility Table

Parts Required:

P/N	Description	Qty.

NONE

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

INFORMATION ONLY

[ ] Calibration Required	PRODUCT LINE: 13
[X] Calibration NOT Required	AUTHOR: AT

ADDITIONAL INFORMATION:
1. Reformatted existing content to make it easier to understand.
     Added new information that brings the content up to date (for firmware A.05.05.01).
2. Added new information that brings the content up to date (for firmware A.05.06.02).

November 1, 2012

Agilent Technologies

Situation:

Agilent occasionally releases new firmware for the N4010A to provide new features, enhance existing features, or fix reported issues (bugs). Units purchased as new will always contain the latest firmware release, and this can be an issue for customers who have qualified their manufacturing test systems or processes using a previous firmware release.

In some instances it **is** possible to downgrade the firmware to an older revision without impacting the operational stability or measurement integrity of the unit, but this is **not** always the case. There are various factors that must be taken into account before attempting to downgrade the N4010A firmware.

Solution/Action:

Agilent recommends that the N4010A should always be used with the latest firmware release.

If this is not possible, then please take note of the information contained in the following table; it explains why there are some restrictions with regards to downgrading the firmware:

Limiting Factor for Firmware Downgrade	Minimum Firmware	Reasons
Change in format of Calibration Files	A.02.00.11	The factory improved the calibration method of the N4010A to coincide with the release of A.02.00.11 firmware.
		Downgrading the instrument firmware from A.02.00.11 to A.01.xx.xx will create a situation whereby the firmware correction algorithms & stored correction factors do not match, which could cause the unit to make inaccurate measurements.
		This situation can be rectified by upgrading the instrument firmware to A.02.00.11 (or later). This procedure does not overwrite any stored correction factors, and so the unit will not need to be re-calibrated.
Added new feature for Bluetooth Enhanced Data Rate (EDR) Tx/Rx test capability (Option 105) and Bluetooth Enhanced Data Rate (EDR) Tx-Only test capability (Option 106)	A.02.00.25	Options for Bluetooth Enhanced Data Rate (EDR) Tx/Rx test capability (Option 105) and Bluetooth Enhanced Data Rate (EDR) Tx-Only test capability (Option 106) were supported with the release of A.02.00.25 firmware.
		Options 105 and 106 will be disabled (not be visible on the system screen) if the firmware is downgraded below A.02.00.25.
		This situation can be rectified by upgrading the instrument firmware to A.02.00.25 (or later). This procedure does not overwrite any stored correction factors, and so the unit will not need to be re-calibrated.

Limiting Factor for Firmware Downgrade	Minimum Firmware	Reasons
RF Assembly change from N4010-61007 to N4010-61043	A.03.01.01	The RF Assembly in the N4010A was changed to coincide with the release of A.03.01.01 firmware. The previous RF Assembly (N4010-61007) used 5MHz and 22MHz filters, whilst RF Assembly (N4010-61043) uses 22MHz and 40MHz filters. Installing firmware below A.03.01.01 in a unit that contains the new RF Assembly will create a situation whereby the N4010A cannot correctly identify & control the filters. The situation can be rectified by upgrading the instrument firmware to A.03.01.01 (or later). This procedure does not overwrite any stored correction factors, and so the unit will not need to be re-calibrated.
Link Sub-System (LSS) Assembly change from N4010-60010 to N4010-60012 and Frequency Extension Assembly change from N4010-60008 or N4010-61013 to N4010-61049 Added new features Bluetooth Enhanced Data Rate (EDR) Loopback test capability (Option 107), Bluetooth Headset Profile (Option 112) and Bluetooth Audio Analyzer/Generator (Option 113)	A.04.01.02	The Link Sub-System (LSS) Assembly and Frequency Extension Assembly in the N4010A were changed to coincide with the release of A.04.01.02 firmware. Options for Bluetooth Enhanced Data Rate (EDR) Loopback test capability (Option 107), Bluetooth Headset Profile (Option 112) and Bluetooth Audio Analyzer/Generator (Option 113) were supported with the release of A.04.01.02 firmware. Previous LSS Assemblies (N4010-60003/60010) only supported Bluetooth 1.2, whilst LSS Assembly (N4010-60012) supports both Bluetooth 1.2 and Bluetooth 2.0 (also known as Bluetooth EDR). Mixing products in the previous Frequency Extension Assembly (N4010-61013) could adversely affect PER and RSSI measurements for some chipset architectures. This issue has been addressed by Frequency Extension Assembly (N4010-61049). Installing firmware below A.04.01.02 in a unit that contains LSS Assembly N4010-60012 will create a situation whereby the N4010A can no longer support Bluetooth 2.0, and it may not be able to maintain or control a Bluetooth 1.2 link. Similarly, the N4010A will be unable to identify Frequency Extension Assembly N4010-61049, affecting control of the output power level. Options 107, 112, and 113 will also be disabled (not be visible on the system screen) if the firmware is downgraded below A.04.01.02. The situation can be rectified by upgrading the instrument firmware to A.04.01.02 (or later). This procedure does not overwrite any stored correction factors, and so the unit will not need to be re-calibrated.

Limiting Factor for Firmware Downgrade	Minimum Firmware	Reasons
Added new feature for 802.11n MIMO Modulation Analysis (Option 108)	A.05.01.00	The option for 802.11n MIMO Modulation Analysis (Option 108) was supported with the release of A.05.01.00 firmware. Option 108 will be disabled (not be visible on the system screen) if the firmware is downgraded below A.05.01.00. This situation can be rectified by upgrading the instrument firmware to A.05.01.00 (or later). This procedure does not overwrite any stored correction factors, and so the unit will not need to be re-calibrated.
Added support for a new Digital Signal Processor (DSP) that will be used on the Link Sub-System (LSS) Assembly	A.05.03.12	The Link Sub-System (LSS) Assembly in the N4010A has introduce a new DSP to coincide with the release of A.05.03.12 firmware. Installing firmware below A.05.03.12 in a unit that contains the new DSP on Link Sub-System (LSS) Assembly will put it in an unknown state. The unit may generate error messages, or fail to operate correctly. The DSP version be checked via the front panel by pressing the following keys: System > Service > Hardware Info. If the "LSS" description includes the term "HW=2008T4", then it is using the new DSP. If this term is different (for example, "HW=2001T4"), then it is using the older DSP. This situation can be rectified by upgrading the instrument firmware to A.05.03.12 (or later). This procedure does not overwrite any stored correction factors, and so the unit will not need to be re-calibrated.
Link Sub-System (LSS) Assembly change from N4010-60012 to N4010-60030	A.05.04.01/ A.05.05.00	The Link Sub-System (LSS) Assembly N4010-60030 in the N4010A was changed to coincide with the release of A.05.04.01 firmware. Installing firmware below A.05.04.01 in a unit that contains the Link Sub-System (LSS) Assembly N4010-60030 will put it in an unknown state. The unit may generate error messages, or fail to operate correctly. Also note that A.05.04.01 does not support any Bluetooth options - it only supports WLAN options. The first firmware release that supports Bluetooth options with Link Sub-System N4010-60030 is A.05.05.00. All Bluetooth options will be disabled (not be visible on the system screen) if the firmware is downgraded to A.05.04.01. The situation can be rectified by upgrading the instrument firmware to A.05.04.01 (or later) for WLAN only units, or A.05.05.00 (or later) for units with Bluetooth options. This procedure does not overwrite any stored correction factors, and so the unit will not need to be re-calibrated.

Limiting Factor for Firmware Downgrade	Minimum Firmware	Reasons
Added new feature for Bluetooth Low Energy Tx/Rx (Option 109)	A.05.05.01	The option for Bluetooth Low Energy Tx/Rx (Option 109) was supported with the release of A.05.05.01 firmware. Option 109 will be disabled (not be visible on the system screen) if the firmware is downgraded below A.05.05.01. This situation can be rectified by upgrading the instrument firmware to A.05.05.01 (or later). This procedure does not overwrite any stored correction factors, and so the unit will not need to be re-calibrated.
RF Link Sub-System (LSS) Assembly change	A.05.06.02	The RF Link Sub-System (LSS) Assembly in the N4010A was changed to coincide with the release of A.05.06.02 firmware. Installing firmware below A.05.06.02 in a unit that contains the new RF Link Sub-System (LSS) Assembly will put it in an unknown state. The unit may generate error messages, fail to operate correctly, or make inaccurate measurements. An error-checking process at Firmware Upgrade Utility Version 2.1.7 (or later) has been added, that prevents the firmware from being downgraded to any version older than A.05.06.02 if the new RF LSS board is present. Also note that the version of RF LSS board **cannot be** checked via either the Front Panel or any SCPI command.

Note:
There are no restrictions with regards to upgrading the N4010A firmware. The firmware is designed such that the latest release can be installed in all units.