



3920 Series Software Release Notes

Version 3.7.9

09/14/2021

Version 3.7.9 is compatible with all 3920 and 3920B models of the 3920 Series product line.

Improvements

1. Added a control to enable or disable the Mail Server in the UTILS>Admin>Automated Testing menu. The default setting for the Mail Server is disabled.

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Version 3.7.8

06/11/2020

Version 3.7.8 is compatible with all 3920 and 3920B Models of the 3920 Series product line.

Improvements

1. The theme setting is now preserved through a software update.

Fixes

1. Fixed an issue encountered in Auto-Test II when switching between different applications.
2. Resolved Modern theme text spacing / coloring in the Oscilloscope and Spectrum Analyzer.



Version 3.7.7

04/09/2020

New Features

1. The graphical user interface now provides a choice of two themes: Modern and Original. The theme can be selected from the menu UTILS>Software Settings>Theme. The test set must be power cycled for a theme change to take effect.



Version 3.7.6

10/24/2019

Versions 3.6.0 and above have major changes and improvements across all platforms within the 3920 Series Radio Test Set and it is strongly recommended that all units be upgraded to this new revision. Automated test scripts will only be supported for 3920s with a minimum of 3.6.0 and above.

Version 3.7.6 is compatible with all 3920 and 3920B models of the 3920 Series product line.

Fixes

1. Fixed an issue where repeated toggling of the RF Generator would cause AM modulation to stop. When in this state, the modulation generator state was inverted; with modulation enabled there was no modulation, and when disabled modulation was being generated.
2. Resolved a problem with SNR testing in Analog / Duplex where the RF Generator would improperly cycle between normal and hum & noise instead of the modulation generator. This did not affect any systems besides Analog / Duplex.

Auto-Test Script Updates:

System Version 3.7.6 includes updated scripts as follows:

Option	Description	Version
Option 600/602	Motorola ASTRO®25 Series Auto-Test and Alignment Software	4.1.6
Option 601	Motorola ASTRO Series Auto-Test and Alignment Software	4.1.0
Option 603	TIA/EIA-603 FM Land Mobile Radio Test Software	4.1.0
Option 604	Motorola APX™ Series Auto-Test and Alignment	4.9.6
Option 606	EF Johnson 5100 / 5300ES Series Auto-Test and Alignment Software	4.0.0
Option 607	BK DPHx Series Auto-Test and Alignment Software	4.0.1
Option 608	Kenwood P25 5X10 Series Auto-Test and Alignment Software	4.0.0
Option 610	Motorola MOTOTRBO™ Radio Series Auto-Test	4.7.0
Option 611	Motorola TETRA MS (MTP-850 Series) Auto-Test Software	4.0.1
Option 616/625	Harris P25 Series Auto-Test and Alignment Software	5.2.0
Option 623	TETRA Cassidian TB3 Base Station	4.0.0
Option 624	Collins 721S Auto-Test Software	4.4.0
Option 626	DMR Repeater Auto-Test Software	4.0.0
Option 627	KNG Command / KNG2 Series Auto-Test / Alignment	4.4.0
Option 628	Hytera DMR Series Auto-Test / Alignment Software	4.5.0
Option 629	Tait P25 Series Auto-Test Software	4.1.3
Option 630	Kenwood 5x20 Series Auto-Test / Alignment	4.3.0
Option 631	Kenwood NXDN™ Series Auto-Test / Alignment	4.3.0
Option 633	EF Johnson Viking Series Auto-Test and Alignment	4.1.2
Option 636	BK KNG-S Series Auto-Test and Alignment	4.2.0
Option 637	Harris XL200 Auto-Test Software	4.5.0
Option 639	Tait DMR Series Auto-Test Software	4.1.3
Option 640	Kenwood NX-5x00 / TK5x30 Series Auto-Test / Alignment Software	4.1.2
Option 642	Hytera DMR Repeater Auto-Test / Alignment Software	4.5.0
Option 644	Motorola APX 8000 Series Auto-Test / Alignment	4.9.6
Option 645	Motorola APX "B" model Series Auto-Test / Alignment	4.9.6



Version 3.7.4

10/2/2018

Versions 3.6.0 and above have major changes and improvements across all platforms within the 3920 Series Radio Test Set and it is strongly recommended that all units be upgraded to this new revision. Automated test scripts will only be supported for 3920s with a minimum of 3.6.0 and above.

Version 3.7.4 is compatible with all 3920 and 3920B models of the 3920 Series product line.

Improvements

1. Updated POCSAG option to resolve issue with “@”
2. Added USB driver to support Hytera Repeater in the future
3. Improved generator level changes with AM Modulation
4. Resolved a random issue with Function Generator doubling in Frequency
5. Resolved crash when recalling a setup from Phase II from an analog configuration

Auto-Test Script Updates:

System Version 3.7.4 includes updated scripts as follows:

Option	Description	Version
Option 600/602	Motorola ASTRO25 Series Auto-Test / Alignment Software	4.1.4
Option 601	Motorola ASTRO (XTS-3000) Series Auto-Test / Alignment Software	4.1.0
Option 603	TIA/EIA-603 FM Land Mobile Test Software	4.0.0
Option 604	Motorola APX Series Auto-Test / Alignment	4.8.1
Option 606	EF Johnson ES Series Auto-Test / Alignment Software	4.0.0
Option 607	BK DPHX5102X Series Auto-Test / Alignment Software	4.0.1
Option 608	Kenwood P25 5X10 Series Auto-Test / Alignment Software	4.0.0
Option 610	Motorola MOTOTRBO Radio Series Auto-Test	4.6.0
Option 611	Motorola TETRA MS (MTP-850 Series) Auto-Test Software	4.0.1
Option 616/625	Harris P7300, P5500, XG75 Series Auto-Test / Alignment Software	5.2.0
Option 623	TETRA Cassidian TB3 Base Station	4.0.0
Option 626	DMR Repeater Auto-Test Software	4.0.0
Option 627	KNG Command / KNG2 Series Auto-Test / Alignment	4.3.0
Option 628	Hytera DMR Series Auto-Test / Alignment Software	4.3.0
Option 630	Kenwood 5x20 Series Auto-Test / Alignment	4.2.0
Option 631	Kenwood NXDN Series Auto-Test / Alignment	4.2.0
Option 633	EF Johnson Viking Series Auto-Test and Alignment	4.1.2
Option 636	BK KNG-S Series Auto-Test and Alignment	4.1.0
Option 637	Harris XL200 Auto-Test Software	4.5.0
Option 644	Motorola APX 8000 Series Auto-Test / Alignment	4.8.1
Option 645	Motorola APX "B" model Series Auto-Test / Alignment	4.8.1



Version 3.7.3

6/13/2017

Versions 3.6.0 and above have major changes and improvements across all platforms within the 3920 Series Radio Test Set and it is strongly recommended that all units be upgraded to this new revision. Automated test scripts will only be supported for 3920s with a minimum of 3.6.0 and above.

Version 3.7.3 is compatible with all 3920 and 3920B models of the 3920 Series product line.

Improvements

1. Corrected issues with Motorola Type II Trunking
2. Corrected an issue in the DMR system that could periodically produce high BER
3. DMR Digital Station ID is now displayed correctly
4. External audio loads are now saved in stored setups
5. Corrected an issue with TETRA DM output level for 3920B model units

Auto-Test Script Updates:

System Version 3.7.3 includes updated scripts as follows:

Option	Description	Version
Option 600/602	Motorola ASTRO 25 Series Auto-Test / Alignment Software	4.1.2
Option 601	Motorola ASTRO (XTS-3000) Series Auto-Test / Alignment Software	4.1.0
Option 603	TIA/EIA-603 FM Land Mobile Test Software	4.0.0
Option 604	Motorola APX Series Auto-Test / Alignment	4.6.4
Option 606	EF Johnson ES Series Auto-Test / Alignment Software	4.0.0
Option 607	BK DPHX5102X Series Auto-Test / Alignment Software	4.0.1
Option 608	Kenwood P25 5X10 Series Auto-Test / Alignment Software	4.0.0
Option 610	Motorola MOTOTRBO Radio Series Auto-Test	4.4.0
Option 611	Motorola TETRA MS (MTP-850 Series) Auto-Test Software	4.0.1
Option 614	Technisonic Type 1 Radios Series Auto-Test / Alignment Software	4.0.0
Option 615	Technisonic Type 2 Radios Series Auto-Test / Alignment Software	4.0.0
Option 616/625	Harris P7300, P5500, XG75 Series Auto-Test / Alignment Software	5.1.0
Option 623	TETRA Cassidian TB3 Base Station	4.0.0
Option 626	DMR Repeater Auto-Test Software	4.0.0
Option 627	KNG Command / KNG2 Series Auto-Test / Alignment	4.2.0
Option 628	Hytera DMR Series Auto-Test / Alignment Software	4.2.0
Option 630	Kenwood 5x20 Series Auto-Test / Alignment	4.2.0
Option 631	Kenwood NXDN Series Auto-Test / Alignment	4.2.0
Option 633	EF Johnson Viking Series Auto-Test and Alignment	4.1.0
Option 636	BK KNG-S Series Auto-Test and Alignment	4.1.0
Option 637	Harris XL200 Auto-Test Software	4.3.0
Option 644	Motorola APX 8000 Series Auto-Test / Alignment	4.6.4
Option 645	Motorola APX "B" model Series Auto-Test / Alignment	4.6.4



Version 3.7.2

4/15/2016

Versions 3.6.0 and above have major changes and improvements across all platforms within the 3920 Series Radio Test Set and it is strongly recommended that all units be upgraded to this new revision. Automated test scripts will only be supported for 3920s with a minimum of 3.6.0 and above.

Version 3.7.2 is compatible with all 3920 and 3920B models of the 3920 Series product line.

New

1. Added support for the KVL 4000 keyloader
2. Added Option 644 to support APX™ 8000 Series Auto-Test and Alignment. This option requires Option 604.
3. Added Option 636 – KNG-S Series Auto-Test and Alignment Version 4.0.4

Improvements

1. Resolved an issue with the P25 system that caused System Error 360
2. Improved stability and operation of P25 Trunking
3. Improved Receiver Autotune feature
4. Improved conversion from dBm to dBuV
5. Changed the gain factor for the receiver 750 uS demod filter to reflect 0 dB at 1 kHz
6. Improved peak hold remote commands

Auto-Test Script Updates:

Option 604 – APX Auto-Test and Alignment Version 4.2

1. Added ESN from the radio to the test report
2. Resolved an issue for older 3920 Series products that did not have a DMM installed
3. Added support for Option 644 APX 8000

Option 607 – BK DPHx Series Auto-Test and Alignment Version 4.0.1

1. Modified the power alignment adjustments to step in smaller increments

Option 610 – MOTOTRBO™ Auto-Test and Alignment Version 4.2.0

1. Added detection for H56QD and H56JD CSA radios
2. Added averaging to the Front End Filter test
3. The CSA and ATEX radios are separate now
4. Improved the Radio Read reliability
5. Added modifications to support Motorola Firmware Version R02.50.04
6. Added support for the UHF ATEX (H56QC) radios
7. Added support for the VHF ATEX and CQST radios (H56JC)
8. Included X-band radio in T-band frequency check



Version 3.7.0

11/04/2015

Version 3.6.0 and 3.7.0 have major changes and improvements across all platforms within the 3920 Series Radio Test Set and it is strongly recommended that all units be upgraded to this new revision. Automated test scripts will only be supported for 3920s with a minimum of 3.6.0 and above.

Version 3.7.0 is compatible with all 3920 and 3920B models of the 3920 Series product line.

New

1. The P25 and DMR systems now support decoding of the Base Station ID data. P25 base stations can transmit this ID periodically.
2. All systems now support an additional feature in the cable offset configuration screen. The user now has the ability to sweep test cables from 100 MHz to 1 GHz. Up to three cables can be stored and the loss factor is automatically used based on the frequency the generator or receiver is set to. This allows automatic compensation of cable loss for the Power or level measurements as well as generator level. This feature was previously only available in Auto-Test applications. The feature requires the Tracking Generator Option 61.
3. Added ARIB T102 protocol to the ARIB system.
4. Added new option 442 NXDN XML Channel Logger. Requires Option 440 NXDN.
5. Added new option 462 ARIB XML Channel Logger. Requires Option 460 ARIB.
6. Added Audio Analyzer operation to the NXDN system.
7. Added DTMF configuration to P25, DMR, and dPMR™ systems.

Improvements

1. Improved operation of TETRA Neighbour Cell.
2. Improved operation of TETRA MS T1 system when the TX Measurements tile is present.
3. Improved operation of SmartZone™ and SMARTNET™ System Plan entries.
4. Improved Autotune operation.
5. Improved NXDN Message Decode functions when message is not VCALL.
6. Improved conversion of dBuV to dBm calculation.

Applications Updates included in Version 3.7.0:



Option	Firmware 3.6.0	Description	Firmware 3.7.0
600	4.0.0	Motorola ASTRO®25 series Autotest / Alignment Software	4.0.3
601	4.0.0	Motorola ASTRO (XTS-3000) series Autotest / Alignment Software	4.1.0
602	4.0.0	Motorola ASTRO®25 series XTL™ Power Autotest / Alignment Software	4.0.3
604	4.0.1	Motorola APX™ series Autotest / Alignment	4.1.1
610	4.0.0	Motorola MOTOTRBO™ Radio Series Autotest	4.0.1
611	4.0.0	Motorola TETRA MS (MTP-850 Series) Autotest Software	4.0.1
616	4.0.0	Harris P7300, P5500, XG75 series Autotest / Alignment Software	5.0.1
625	4.0.0	Harris P25 Radio Advanced Alignment	5.0.1
627	4.0.0	KNG Command series Autotest / Alignment	4.1.0

Option	Firmware 3.6.0	Description	Firmware 3.7.0
600	4.0.0	Motorola ASTRO®25 series Autotest / Alignment Software	4.0.3
602	4.0.0	Motorola ASTRO®25 series XTL™ Power Autotest / Alignment Software	4.0.3

1. This application has been updated to resolve a communications issue resulting from a radio software update to Version 17.1 on Motorola XTL™ Radios. When the radio is updated to this version, Option 600 would drop communications with the radio. Changes have been made to resolve this issue.
2. Delays have been added to the Deviation Balance and Limiting alignments to improve measurement accuracy.

Option	Firmware 3.6.0	Description	Firmware 3.7.0
601	4.0.0	Motorola ASTRO (XTS-3000) series Autotest / Alignment Software	4.1.0

1. Modified printout to be consistent with other applications.
2. The Front End Filter alignment and RX BER test have been separated and are now separate menu items. These tests now match up with how the Option 600 operates.

Option	Firmware 3.6.0	Description	Firmware 3.7.0
604	4.0.1	Motorola APX™ series Autotest / Alignment	4.1.1

1. Added support for APX 1500 and APX 4500 models.
2. Adjusted timing and command sequence for the Modulation Balance alignment to resolve customer reports of inability to align the Modulation Balance on some APX 4500 models.
3. Added support for APX 4000 UHF1 Radio.
4. Fixed an issue where a test result file could be overwritten with a failed to connect error message.

Option	Firmware 3.6.0	Description	Firmware 3.7.0
610	4.0.0	Motorola MOTOTRBO™ Radio Series Autotest	4.0.1

1. Improved the retry on failure of RX BER test.
2. Changed the “Radio not found” message to “No response from radio”.
3. Minor change to portable power alignment.
4. Correctly detect when communications with radio has been lost. This prevents the script from continuing one with trying to test the radio when communications has been lost.



Option	Firmware 3.6.0	Description	Firmware 3.7.0
611	4.0.0	Motorola TETRA MS (MTP-850 Series) Autotest Software	4.0.1

1. The file path for the data files were changed in this revision.

Option	Firmware 3.6.0	Description	Firmware 3.7.0
<u>616</u>	4.0.0	Harris P7300, P5500, XG75 series Autotest / Alignment Software	5.0.1
<u>625</u>	4.0.0	Harris P25 Radio Advanced Alignment	5.0.1

1. This update adds mobile radios to the existing application. Now the M7300 has support for the 700 / 800 MHz band, UHFH and L bands, VHF 50W and VHF 100W models.
2. A modification was made to support XG-75P model radios. They are now tested as an XG-75 model.

Option	Firmware 3.6.0	Description	Firmware 3.7.0
627	4.0.0	KNG Command series Autotest / Alignment	4.1.0

1. Mobile radio models have been added in this revision. The M800, M400, M500, M150 (50 W), M150 (110 W), and M150 (LP) models have been added.
2. Various test and alignment fixes have been put in place to resolve reported issues.



Version 3.6.0

05/07/2015

Note: Version 3.6.0 has major changes and improvements across all platforms within the 3920 Series Radio Test Set and it is strongly recommended that all units be upgraded to this new revision. Automated test scripts will only be supported for 3920s with a minimum of 3.6.0.

Version 3.6.0 is compatible with all 3920 and 3920B models of the 3920 Series product line.

New

1. The NXDN system now has the ability to encode and decode NXDN call setup information. This includes the ability to encode and decode the Call Type, Duplex, Priority, Emergency, Source ID, Group ID, Destination ID, and Rate. In addition, the user can decode the Cipher Type.

Improvements

1. Autotune (Frequency Find) feature has been improved in all systems.
2. P25 system RF Level on secondary channel (Trunking operation) has been improved.

Application Updates

1. All automated test applications have new version numbers beginning with 4.0.0. these application versions are NOT compatible with earlier 3920 firmware versions. Any updates to applications in the future will require the system firmware version to be updated to Version 3.6.0 as a minimum version.
 - a. Option 600 v. 4.0.0 – Motorola ASTRO 25
 - i. Added support for the L04JK console radio
 - b. Option 601 v. 4.0.0 – Motorola ASTRO
 - i. Increased key up delay in the reference oscillator test
 - c. Option 602 v. 4.0.0 – Motorola ASTRO 25 Power Alignment
 - i. Added support for the L04JK console radio
 - d. Option 604 v. 4.0.1 – Motorola APX
 - i. Added support for the APX 1000 and APX 5000 Series radios
 - ii. Changed method for testing Low Power mode
 - e. Option 610 v. 4.0.0 – Motorola MOTOTRBO
 - i. “R” band radios now show a Frequency Range of 430 – 527 MHz
 - ii. Original alignment values are restored to Frontend Gain and Attenuation if the alignment is aborted
 - f. Option 611 v. 4.0.0 – Motorola TETRA MS (MTP-850)
 - i. Resolved an issue where RX BER test would sometimes fail the first frequency
 - g. Option 616 / 625 v. 4.0.0 – Harris P7300, P5500, and XG75
 - i. Improved the Cable Loss measurement system



- ii. Improved test results printout
 - iii. Added radio connection diagrams
 - iv. Added changes for RX BER tests on radios with latest Harris firmware
- h. Option 630 v. 4.0.0 – Kenwood P25 5x20 Series
 - i. Improved communications with radios
- i. Option 631 v. 4.0.0 – Kenwood NX Series
 - i. Improved communications with radios



Version 3.5.0

11/12/2014

Note: Version 3.5.0 is compatible with all 3920 and 3920B models of the 3920 Series product line.

New

1. Added the FRAMESYNC pattern to TX BER meter functions in the NXDN, DMR, dPMR, and P25 X2 systems. This pattern selection allows TX BER to be measured on Voice and does not require a standard pattern.
2. RF frequency entries have been changed to 100 kHz for the lowest entry in all systems
3. Added new sample setups for testing Phase II Subscriber and Base stations.
4. Added Autotune function to ARIB T98 system

Improvements

1. The SmartZone and SMARTNET Trunking operation has been improved in the P25 System for placing calls to the subscriber unit.
2. Analog meter selections are now retained when switching between Digital and Analog modes in the NXDN, dPMR, and ARIB T98 systems
3. Fixed an issue with cursor focus when entering the Startup Options screen from the Systems Utility menu.
4. Fixed an issue with printing to USB printers.
5. Fixed an issue with FM dBr readings in the P25 system (Analog Mode)
6. Fixed an issue with scope horizontal markers when two traces are displayed.
7. Fixed an issue when recalling a stored setup file that has the SNR meter enabled.
8. Fixed an issue where audio from NXDN Vocoder would not be heard from speaker.
9. Fixed an issue with system time zone after software upgrade.
10. Fixed audio routing issues when switching from Digital to Analog mode in the P25 system.

Applications Updates:

1. Option 600 / 602 – ASTRO 25 application has been updated to Version 3.9.4.
2. Option 604 – APX application has been updated to Version 2.9.0.
3. Option 610 – MOTOTRBO application has been updated to Version 2.0.6.
4. Option 626 – DMR Repeater has been updated to Version 1.0.8.



Version 3.4.0

08/13/2014

Note: Version 3.4.0 is compatible with all 3920 and 3920B models of the 3920 Series product line.

New

1. The P25 transmitter BER measurement now includes the capability of measuring the bit error rate of a live control or voice channel. With this new functionality, the 3920B can now be used to measure the BER of a base station trunking or voice channel without putting it into a special test mode. This is useful for performing drive testing for purposes of evaluating and finding coverage problems.
2. The 3920B now includes a new option for finding the selectivity of a receiver. This option is implemented through a new tile, available from the tile drop down menu in Analog Duplex mode. With this option, the user can find the selectivity bandwidth of a receiver as well as the selective symmetry.
3. New to the operation of the 3920B oscilloscope is the ability to select an envelope filter for the scope trigger operation. This gives the user the ability to trigger on the envelope of a signal that is AM modulated.
4. Also new to the operation of the 3920B oscilloscope is the ability to set the horizontal position of the trigger.

Improvements

1. The Software License page has been changed to more correctly reflect the purchased installed licenses.
2. The Comments area of Store / Recall has been improved to allow the addition of special characters such as !@#%&*().
3. The TEDS BS T4 pattern for BER measurement is now changed so that the random data sequence restarts at Frame 1 of the Multi-Frame.
4. Fixed issue with decoding and displaying the SICH-Q in TEDS BS T4.
5. Fixed issue with the NTP server not correctly working.
6. Fixed issue with the P25 UUT TX Bit Err Meter.
7. Fixed issue with the Spectrum Analyzer Find function.
8. Fixed issue with the NXDN with the Inband Power meter.
9. Fixed issue with the IQGen operation.
10. Fixed issue in NXDN with the RAN decode operation
11. Fixed issue in DMR with the STD IB 511 pattern.
12. Fixed issue in DMR with the IB 511 pattern.
13. Fixed fan control speed issues.
14. Fixed Time Zone setting issues.
15. Fixed boot up issue in P25 that could occur when booting up to the spectrum analyzer.
16. Changed the way the option install works so that is no longer requires a re-boot.



Version 3.3.0

05/21/2014

Note: Version 3.3.0 is compatible with all 3920 and 3920B models of the 3920 Series product line.

New

1. New Vocoder operation has been added to the NXDN and dPMR systems. This adds the capability to encode and decode live audio to these systems and gives the user the ability to listen and analyse the audio being transmitted by an NXDN or dPMR radio. Also included with vocoder operation is a speech test pattern, that can be used to test the audio operation, using varying speech styles and voices.

Improvements

1. Fixed issue with the external audio source selection in P25 trunking.
2. The directory for the store Audio Analyzer traces is now available through the WinSCP access.
3. Improved the stability of the frequency error reading for P25 Phase 2 H-CPM modulation.
4. The IQGen modulation in Analog Duplex now supports levelling of TDMA signals.
5. Fixed issue with the P25 Phase 2 H-CPM distribution diagram.
6. P25 trunking support for separate NAC and System ID has been implemented.
7. Fixed issue with the DMR Frequency error limits.
8. After sending the “*RST” RCI command the “*opc?” RCI command now responds with a “0” while the *RST is executing, and then responds with a “1”.
9. Fixed issue with TX Measurements not responding in TETRA MS T1.
10. Fixed issue with the Frequency error units in Analog Duplex after recalling a store setup.
11. Fixed issue with the AF Level limits in Analog Duplex after recalling a store setup.
12. Fixed issue with the Spectrum Analyzer marker position.



Version 3.2.0

02/26/2014

Note: Version 3.2.0 is compatible with all 3901, 3902, 3920, and 3920B models of the 3920 Series product line.

New

1. New addition of frequency lists. Multiple frequency lists may be configured to control generate and receive frequencies. Very useful for loading in commonly used test frequencies etc. These lists can be exported in .csv format and modified in Excel then imported back into the 3920 / 3920B. The list supports entry of a Label, Generator Frequency and Receiver Frequency.
2. The dPMR system now includes several new patterns including STD 1031, STDCAL1, STDCAL5, and STD and SILENCE. The STD 1031 pattern can be used for BER testing or for generating a 1031 Hz tone in the radio. The STDCAL1 is the same pattern as the STD 1031, but with a 1% BER and the STDCAL5 has a 5% BER. Both of these patterns are useful for verifying that the radio's internal BER calculations are operating correctly. The STD SILENCE pattern is used for checking the audio circuits of a radio when it should be quiet.
3. Also included in the dPMR system is a new Encode and Decode tile. These tiles enable the 3920 to encode and decode important signalling including Channel Code, Call ID, Unit ID, Comms Format, and Emergency Priority.
4. The P25 system now includes two new patterns, LDU1 and LDU2. These patterns are useful for performing the P25 performance test that requires the transmitted pattern to start with either LDU1 or LDU2. These patterns are similar to the STD LDU1 and STD LDU2 except that the NAC and TGID are controlled by the Simulator Tile.
5. The DMR system now supports two new patterns, NON STD IB 511 and NON STD IB CAL. These patterns include random data in the payload that is identical to the STD IB 511 and STD IB CAL. The difference is that while the Color Code and Call ID are set to fixed values in the STD IB patterns, the user is allowed to set the Color Code and the Call ID in the NON STD patterns.
6. The Oscilloscope now supports two horizontal markers.
7. The Channel and Spectrum Analyzers now supports store and recall of traces. This functionality enables the user to store multiple traces and recall them later or view or to compare with a live trace.

Improvements

1. Improved P25 Phase II performance and stability.
2. Improved Networking support.
3. Fixed an issue with the P25 Slot Boundary sync pulse output, where it would not work with some trunking channel plans.
4. Increased the resolution of the FM deviation when the level is below 1 kHz.
5. Fixed an error in the 511 bit sequence that is used in the PN9 VOICE SYNC and the PN9 DATA SYNC patterns for DMR.



6. Fixed an issue with the IQ Gen operation in Analog Duplex so that it does not need to be reselected before operating properly.

Auto-Test II Updates and Improvements

1. Auto-Test II system improvements and stability.
2. Version 2.8 of APX Auto-Test adds Phase II TX and RX Tests. Requires 3920 Version 3.2 with Phase II Option.
3. All automated test scripts are up to the latest revision in this version.



Version 3.1.2

12/13/2013

Note: Version 3.1.2 is compatible with all 3901, 3902, 3920, and 3920B models of the 3920 Series product line.

Maintenance Release

This version resolves an issue with the new Aeroflex 3920B models. Some 3920B units may experience a generator unlock symptom under specific conditions. This version will resolve the issue for those situations.

Improvements

1. Fixed issue square wave being present on the Test Connector Pin 13.



Version 3.1.0

09/09/2013

Note: Version 3.1.0 is compatible with all 3901, 3902, 3920, and 3920B models of the 3920 Series product line.

New

1. The 3920 NXDN now has a new pattern (FSW+PN9) for random data testing. This pattern includes the NXDN sync word plus random data in the payload. The random data is based on the PN9 sequence defined by CCITT O.153.
2. The 3920 DMR operation now includes two new PN9 patterns. These patterns are different from the STD IB 511 random pattern as they do not reset the random sequence every superframe, but instead a continuous PN9 sequence. These two new patterns are named PN9 VOICE SYNC and PN9 DATA SYNC. As the name implies, the only difference between these two patterns is the sync word, with the first one using the MS sourced voice sync word and the second one the MS sourced data sync word. The random data is based on the PN9 sequence defined by CCITT O.153.
3. The 3920 now has a choice on the way the receive frequency of the radio under test is displayed. It can either be displayed as an RF frequency error or as the absolute frequency.
4. The 3920 has a new option, 390XOPT117, for testing TEDS (TETRA Enhanced Data Service) mobile and base stations. This option enables the testing using the TEDS standard T4 test mode of operation.

Improvements

1. Fixed issue with operation with the KVL Keyloader.
2. Fixed output level issue in P25.
3. Fixed issue with the Audio Tracking generator marker operation.
4. Fixed issue with the DMR Profile Ramps so that they now reflect the RX Offset entry.
5. Fixed issue with the frequency error field in the DMR Advanced Analysis tile.
6. Fixed issue with the frame size of the dPMR XML data.
7. Added speaker audio routing for analog mode to the dPMR system.
8. Fixed issue with the AF Level meter measurement when the units selected are watts. The calculation was always performed using the external load value, even when it is disabled.
9. Added speaker audio routing for analog mode to the NXDN system.
10. Fixed issue with the NXDN 9600 rate 1031 pattern.
11. The receive filtering for NXDN has been changed in order to improve the operation when performing NXDN off-air measurements.
12. Fixed issue with RAN decoding so that it displays a dash "-" when the value is invalid.



Auto-Test II Scripts

1. Option 600 / 602 – ASTRO 25 Test and Alignment Application (Version 3.8.8)
 - a. Squelched audio at the end of the test.
 - b. Resolved issue with Power Test function after doing the current limiting adjustment on XTL mobiles.
 - c. Resolved conflict with Anritsu power meter driver for Versions 3.0.0 and greater.
2. Option 601 – ASTRO 25 Test and Alignment Application (Version 3.1.0)
 - a. Added Current Limiting alignment for mobiles.
 - b. Added interconnect diagrams.
3. Option 604 – APX Test and Alignment Application (Version 2.7.6)
 - a. Resolved issue with front end alignment on UHF1 / 800 MHz band radios.
 - b. Modified Low Power specifications for portables.
 - c. Resolved potential issue with Reference Oscillator test on APX 6000 UHF2 radio.
 - d. Added interconnect diagram.
 - e. Added separate column for UHF2 band.
 - f. Supports all bands of 2000, 2500, 4000 and 4500, 6000, 6500, 7000, 7500 models.
4. Option 606 – EFJ 5100 / 5300 Test and Alignment Application (Version 1.8.4)
 - a. Added support for high resolution cable sweeps.
 - b. Improved connectivity with some mobiles.
5. Option 611 – TETRA MS (MTP-850 Series) Test Application (Version 1.8.8)
 - a. Added support frequency and cable loss entries.
 - b. Added RX BER specifications to Edit Specs screen.
6. Option 627 – KNG Command Series (P150, P800) (Version 1.0.0)
 - a. This is the initial release of the KNG Command series automatic test / alignment. This version supports the P150 and P800 series radios.



Version 2.2.0

04/17/2013

Note: Version 2.2.0 is compatible with all 3901, 3902, and 3920 models of the 3920 Series product line.

New

1. A new option (POCSAG 390XOPT067) for encoding and decoding the POCSAG paging protocol is now available for the Analog Duplex system. When this option is enabled, the functionality is added as part of the drop down menu for any of the tiles.
2. There are several enhancements to the tone sequential operation. The tone sequence can now include up to 40 characters. The “-“ character is now a possible digit entry and represents a pause in the tone sequence. This pause is user programmable. The duration of the first tone in the sequence can be extended by the user through a new field named “Call Delay”. The frequency of the tones can be shifted by a percentage that is controlled through a new field named “Frequency Shift”. Finally, a USER1 and USER2 protocol is now part of the tone sequential protocols. The user can setup and store, using the Store / Recall, as many of these as needed.
3. A new feature is now available in the SNR meter and Hum & Noise meter that enables the user to setup a notch filter that can remove the selected audio frequency. This is useful for measuring Hum & Noise or SNR on a radio that is generating on a channel that includes a CTCSS tone.
4. Autotune is now part of the NXDN system and enables the user to automatically tune to the frequency of the transmitter.
5. A method for Network Negotiation is now part of the Network Utils screen.

Improvements

1. Fixed issue with properly selecting audio filters in TETRA.
2. Fixed graphical issue with P25 TGID and MSG info on the P25 simulator tile.
3. Fixed issue in dPMR where the persistence did not work correctly on the graphs.
4. Fixed issue with XML Data I/O transmit working intermittently.
5. Fixed intermittent issue with lockup occurring when switching between DMR and P25.
6. Fixed issue with the OBW measurement changing marker settings.
7. Fixed issue with the “*idn?” command returning 39XX for units with serial numbers beginning with 100. This command now correctly returns “3920” as part of the string.

Auto-Test II Scripts

1. Option 600 / 602 – ASTRO 25 Test and Alignment Application (Version 3.8.5)
 - a. Resolved an issue with cable loss measurements.
 - b. Resolved an issue with testing MT-1500 800 MHz band radios.



- i. Note: Cable loss measurements should be redone after installing this version.
2. Option 603 – LMR Test Application (Version 1.8.4)
 - a. Resolved an issue with the microphone sensitivity test.
3. Option 604 – APX Test and Alignment Application (Version 2.7.1)
 - a. Resolved an issue with cable loss measurements.
 - b. Added support for models 4500 and 2500.
 - i. Note: Cable loss measurements should be redone after installing this version.
4. Option 607 – BK DPHx Test and Alignment Application (Version 1.8.3)
 - a. Changed generator modulation level for narrowband squelch alignment.
5. Option 610 – MOTOTRBO Test and Alignment Application (Version 1.9.4)
 - a. Added support for TICC UHF RS (European radios).
 - b. Added support for high resolution cable loss calibration.
6. Option 616/ 625 – Harris and Harris Advanced Test and Alignment (Version 1.1.5)
 - a. Supports Harris 7300, 5500, and XG-75 Series radios.



Version 2.1.5

02/14/2013

Note: Version 2.1.5 is compatible with all 3901, 3902, and 3920 models of the 3920 Series product line.

This release fixes an issue with switching between the DMR and P25 operational systems. This update should be performed if both options are installed.



Version 2.1.2

11/26/2012

Note: Version 2.1.2 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. This version is compatible with all 3900 Series processor boards.

New

1. The 3920 now supports two variants of the 300 Hz HP filter. One is a filter that has a sharper cutoff; while the other is the original 300 Hz HP filter. The selection of the filter choices is in the configuration screen.
2. The range of the analog duplex AM modulation meter now extends to 135%.
3. The P25 trajectory plot now has a selection of the number of symbols.
4. The DMR decode tile will blank the displayed data when the signal is removed or invalid.
5. The DMR transmit slot selection, which is used for the Sync mode, retains the selection when the user toggles the mode between Direct and Sync.
6. 390XOPT626 – Automatic DMR Repeater Test is now available. Generic application can perform automatic testing of conventional DMR Repeaters in a digital mode.

Improvements

1. Fixed problem after Inband power meter calibration not restoring the setup of the selected system.
2. Improved Harmonics and Spurious option measurement accuracy.
3. Fixed issue with analog duplex modulation measurement unit selection.
4. Fixed Hum and Noise measurement issue when using the 750 uS de-emphasis demod with 3 kHz LP demod filter, when the 100 kHz IF filter is selected.
5. In DMR, the units for the frequency error meter are now user selectable.
6. Turning on tracking generator no longer disables the DMR, dPMR, and NXDN modulation.
7. Fixed issue with unit selection for dPMR frequency error meter.
8. Fixed problem with persistence working on dPMR graphs.
9. Fixed DTMF configuration tile issues.
10. Fixed issue with User Calibration changing the settings of the 3920.
11. Fixed issue with SNR measurements not being made the same in systems other than Analog Duplex. All SNR measurements, regardless of the system, are now the same.
12. Fixed issue with activation of the OBW meter causing the markers to unlock.
13. Fixed an issue in TETRA where executing the Normal / Extreme TX limits commands caused RCI timeouts. Even though the extreme / normal TX limits commands worked in all Tetra systems, when executed, it caused the RCI to become inoperative until it timed out.
14. Fixed issue with TETRA audio filters, in the audio tile, not functioning correctly. The response of the audio filters was corrected.



15. Fixed issue in TETRA MS where the TX Measurement could not be remotely toggled to repeat without signal present.
16. Fixed issue with the range for TETRA BS Expected Power level.
17. Fixed issue where the Max TX Level / Power Class settings cause TETRA MS to reset.
18. Fixed issue in the Tetra MST1 RX Measurement Limits Tile where it would not allow the user to enter new values.
19. Added RCI command to control the burst mode in TETRA MS T1 Tx Measurement tile.
20. Fixed issue where the TETRA RX Measurement could not be remotely toggled to repeat without signal present.
21. Fixed issue with intermittent delayed Tx measurements in TETRA MS T1. Intermittently it was taking around 85 seconds to get a settled reading.

Auto-Test Script Updates and Current Versions

1. Option 600	Motorola ASTRO 25	Version: 3.8.4
2. Option 601	Motorola ASTRO	Version: 3.0.9
3. Option 602	ASTRO25 XTL™ Power Align	Version: 3.8.4
4. Option 603	EIA 603D LMR Auto-Test	Version: 1.8.3
5. Option 604	Motorola APX Series	Version: 2.6.8
6. Option 606	EF Johnson ES Series	Version: 1.8.2
7. Option 607	Bendix King DPHx	Version: 1.8.2
8. Option 608	Kenwood 5x10 P25 (Rev 3)	Version: 1.8.6
9. Option 610	Motorola MOTOTRBO	Version: 1.9.2
10. Option 611	Motorola TETRA MS (MPT-850)	Version: 1.8.6
11. Option 614	Technisonics Type 1	Version: 2.0.2
12. Option 615	Technisonics Type 2	Version: 2.0.3
13. Option 626	DMR Repeater	Version: 1.0.3



Version 2.1.0

08/03/2012

Note: Version 2.1.0 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. This version is compatible with all 3900 Series processor boards.

Note: This version requires a new installation method. Details and instructions are provided with the software download.

Due to vast number of 3901, 3902, and 3920s in service, and the possibility that many units may have older versions that required upgrading to a newer version first, this release firmware upgrade will do a complete reformat of the hard drive to ensure all old files are purged and that a clean installation is done. The upgrade process will automatically store and restore all calibration files, option files, and user setups.

New

1. Changed 300 Hz HP filter to a Low Q type. Next release will feature the ability to choose between a 300 Hz HP High Q (Sharp cutoff) or a Low Q filter.
2. Improved AM audio modulator response to 20 kHz.
3. Added ability to change RF Level during AM SNR test.
4. Added last Calibration date to the UTILS>Hardware Settings>Database Status page.
5. Added two digits of resolution to Audio and Demod SINAD meters.
6. Added two digits of resolution to Power meters.
7. Added remote command to switch between % and dBr modes on AM Modulation meter.
8. Increased the number of Trunking system plans that can be saved to 300+.
9. Added several more printers to the supported list.
10. Added Web Browser support to remote functions. Example: 192.168.1.101:5800 would allow remote operations of the 39xx controls with a web browser.

Corrections

1. Corrections to IQ Generator. Resolved issues where IQ Generator would not modulate or correctly level upon initial operation.
2. Corrected issues with support for local printers.
3. Corrected issues with Audio Analyzer markers.
4. Corrected issues with recalling Spectrum / Channel Analyzer marker frequencies from stored setups.
5. Corrected issue where stand alone analyzer would not sweep if unit was powered down in "Last State" mode.
6. Corrected issue with Power between Markers function.
7. Corrected issue with Tone Remote encoding.
8. Corrected issue with DMR Generator not being modulated after using Tracking Generator.



9. Corrected issue with recalling Audio Filter setting in the Analog mode of the DMR System.
10. Corrected issue with recalling Audio Filter setting in the Analog mode of the NXDN System.
11. Corrected an issue where the AF output impedance was not stored when saving a setup.
12. Changed the default value for SVC Class in the P25 Trunking System plans from 3C to F0. This resolves registration issues for how some radios are programmed.

Auto-Test Script Updates and Current Versions

- | | | |
|---------------|-------------------------|----------------|
| 1. Option 600 | Motorola ASTRO 25 | Version: 3.7.0 |
| 2. Option 601 | Motorola ASTRO | Version: 3.0.9 |
| 3. Option 602 | ASTRO25 XTL Power Align | Version: 3.7.0 |
| 4. Option 603 | EIA 603D LMR Auto-Test | Version: 1.8.3 |
| 5. Option 604 | Motorola APX Series | Version 2.5.4 |
| 6. Option 606 | EF Johnson ES Series | Version 1.8.2 |
| 7. Option 607 | Bendix King DPHx | Version: 1.8.2 |
| 8. Option 608 | Kenwood 5x10 P25 (Rev3) | Version: 1.8.5 |
| 9. Option 610 | Motorola MOTOTRBO | Version: 1.9.2 |



Version 2.0.0.2

02/03/2012

Version 2.0.0.2 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line.

NOTE: For TETRA users, Version 1.8.1 is the latest revision that can be used.

Note: This version requires a new installation method. Details and instructions are provided with the software download.

Due to vast number of 3901, 3902, and 3920s in service, and the possibility that many units may have older versions that required upgrading to a newer version first, this release firmware upgrade will do a complete reformat of the hard drive to ensure all old files are purged and that a clean installation is done. The upgrade process will automatically store and restore all calibration files, option files and user setups.

Corrections

1. Resolved P25 Inter-processor communications error if the Audio Analyzer option were not installed.
2. Improved cable loss measurement in Auto-Test II applications.



Version 2.0.0.1

01/20/2012

Version 2.0.0.1 is compatible with all 3901, 3902, and 3920 models of the 3920 Series product line. This version is compatible with all 3900 series processor boards.

NOTE: For TETRA users, Version 1.8.1 is the latest revision that can be used.

Note: This version requires a new installation method. Details and instructions are provided with the software download.

Due to vast number of 3901, 3902, and 3920s in service, and the possibility that many units may have older versions that required upgrading to a newer version first, this release firmware upgrade will do a complete reformat of the hard drive to ensure all old files are purged and that a clean installation is done. The upgrade process will automatically store and restore all calibration files, option files, and user setups.

Corrections

1. Removed system error messages about Channel 2 in DMR, dPMR and NXDN Systems.
2. Improved performance of DMR Power Ramps and Power Profile graphics.
3. Removed mouse cursor when there was no mouse on 800 MHz processor units.
4. Resolved issue where Auto-Test II applications for other systems required Auto-Test II for Analog Duplex.



Version 2.0.0

01/03/2012

Version 2.0.0 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. This version is compatible with all 3900 Series processor boards.

Aeroflex is pleased to announce the latest software release for the 3900 Series Radio Test Sets.

Version 2.0.0 is a major milestone in the 3900 development and represents one of the most extensive software upgrades to the 3900 Series since its release in 2005. Incorporated in Version 2.0.0 is a significant number of new features that were implemented customer's request.

In particular, these release features the first P25 Phase II test suite offered in the market for analysis of P25 Phase II modulation based on the TIA-102 EIA Standard. These features are critical to the testing and optimization of various P25 repeaters and subscriber units.

As with Release 1.8.1, vocoder operation is also available in the DMR System. As part of this new feature, the DMR System can encode and decode DMR Audio. The audio input source can be the MIC port, or the Audio 1 / Audio 2 port. Also available is a stored speech pattern. The decoded audio can be routed to the speaker, scope and the FNCT GEN / DEMOD OUT Port.

Also included in this release are a number of new functions that move the 3920 even closer to a "complete" 8920 replacement. It includes new filters and measurement functions requested by 8920 users that allows a more seamless integration of the 3920 into existing automated test operations.

In addition, significant work has been done to address issues with previous releases of software, including system switching problems and overall system stability issues. This release also is fully compatible with all system processors that have been utilized in the 3900 Series since its introduction.

New FM analog test features have also been incorporated into the DMR, dPMR and NXDN digital test engines. These features save an extensive amount of time in testing dual-mode FM / Digital radios. Previously, the user had to switch between Analog Duplex and the digital test system to fully test all parameters of the radio. This can now be accomplished within the digital test engines.

You will notice in the installation procedures that this release utilizes a new method of installation that was first released in Version 1.8.1. Due to vast number of 3901, 3902, and 3920s in service and the possibility that many units may have older versions that require upgrading to a new version first, this release firmware upgrade will do a



complete reformat of the hard drive to ensure all old files are purged and that a clean installation is done. The upgrade process will automatically store and restore all calibration files, option files and user setups. It is now no longer necessary to go through a “stepped” upgrade process.

Note: This version requires a new installation method. Details and instructions are provided with the software download.

Due to vast number of 3901, 3902, and 3920s in service, and the possibility that many units may have older versions that required upgrading to a newer version first, this release firmware upgrade will do a complete reformat of the hard drive to ensure all old files are purged and that a clean installation is done. The upgrade process will automatically store and restore all calibration files, option files, and user setups.

New: Analog Duplex

1. Added new IF and Audio filters
2. Demodulators: AM, AM USB, AM LSB, FM, FM 50 uS, FM 75 uS, FM 750 uS
3. AM / FM IF Filters
 - a. 6.25, 8.33, 10, 12.5, 25, 30, 100, 230, 300 kHz
4. AM USB / LSB IF Filters
 - a. 4 kHz
5. Post Detection Audio Filters
 - a. LP 300 Hz, 3 kHz, 5 kHz, 15 kHz, 20 kHz
 - b. HP 20 Hz, 50 Hz, 300 Hz
 - c. BP – Any combination of LP and HP
6. Sharpened the 300 Hz HP filter so that it filters out PL tones for SNR measurement
7. Added dBr measurement units to AM Mod meter
8. Added a PTT function to key a radio through the MIC connector

New: DMR

1. Added a slot ratio measurement to the UUT measurements
2. Added the Silence superframe test pattern
3. Enhanced the FM Analog functionality
 - a. DTMF encode and decode
 - b. DCS encode and decode
 - c. Tone sequential, 2-tone, and tone remote encode and decode
 - d. SNR Normal and SNR Hum & Noise measurement
 - e. Generator Modulation, Audio Generators, and Audio input control moved from the Config menu to DMR tiles
 - f. Audio Analyzer
4. Added autotune for Analog protocol
5. Added speaker routing to the ASSIGN function softkeys
6. Added Audio Analyzer tile for Analog protocol
7. Enhanced DMR Vocoder operation



New: dPMR and NXDN

1. Added Analog Operation
 - a. Analog FM transmit and receive to the RF Control tile
 - b. New tiles for controlling FM modulation and Audio generators
 - c. New meters in the UUT Measurements tile for audio measurements including distortion, frequency, level SINAD, and SNR
 - d. New meters in the UUT Measurements tile for demod measurements including demod distortion, frequency, SINAD, SNR, and deviation
 - e. New meters in the UUT Measurements tile for IB Power and RF error
 - f. Generator Modulation tile with 3 internal modulators and external modulation
 - g. Audio Generator tile with 3 internal audio generators
 - h. Audio Input tile with control of audio inputs including selection of input impedance and selection of audio filters
 - i. DTMF encode and decode
 - j. DCS encode and decode
 - k. 2 Tone Sequential, Tone Sequential, and Tone Remote encode and decode
 - l. Added Audio Analyzer tile for Analog protocol

New: P25

1. Enhanced the FM Analog functionality
 - a. DTMF encode and decode
 - b. DCS encode and decode
 - c. Tone sequential, 2-tone, and tone remote encode and decode
 - d. SNR Normal and SNR Hum & Noise measurement
 - e. Modulators, AF Generators, and Audio input control moved to DMR tiles
 - f. Audio analyzer
 - g. Added 3 kHz LP filter
2. Added P25 Phase 2 TDMA operation
 - a. H-CPM (inbound modulation) modulation and demodulation
 - b. H-CPM eye diagram, distribution plot, and constellation
 - c. H-DQPSK (outbound modulation) modulation and demodulation
 - d. H-DQPSK eye diagram, distribution plot, frequency deviation constellation, and trajectory plot
 - e. Generate all H-CPM standard patterns
 - f. Generate all H-DQPSK standard
 - g. UUT measurements for Phase 2 including modulation fidelity, frequency error, power, TX Bit Err, slot power, slot power ratio
 - h. Power profile diagrams of both full slots and ramp-up / ramp-down for H-CPM modulation
3. Added units of PPM for symbol clock error
4. Added the standard symbol rate pattern
5. Added tracking generator to the Spectrum Analyzer in P25
6. Added Audio Analyzer tile for Analog protocol



Auto-Test Script Updates

- | | |
|----------------|----------------|
| 1. ASTRO 25 | Version: 3.4.4 |
| 2. ASTRO | Version: 3.0.5 |
| 3. APX | Version 2.2.0 |
| 4. EF Johnson | Version: 1.8.2 |
| 5. Bendix King | Version: 1.8.2 |
| 6. LMR Test | Version: 1.8.2 |

Corrections

1. System Switching errors have been nearly eliminated
2. An issue was corrected with DMR repeaters not keying up in the SYNC mode
3. DMR Demod Audio output level has been increased
4. Sample setups for DMR Alignment now use the analog protocol in the DMR System instead of switching to the Analog Duplex mode.



Version 1.8.1

10/06/2011

Version 1.8.1 is compatible with all 3901, 3902, and 3920 models of the 3920 Series product line. This version is compatible with all 3900 Series processor boards.

Note: This version requires a new installation method. Details and instructions are provided with the software download.

Due to vast number of 3901, 3902, and 3920s in service, and the possibility that many units may have older versions that required upgrading to a newer version first, this release firmware upgrade will do a complete reformat of the hard drive to ensure all old files are purged and that a clean installation is done. The upgrade process will automatically store and restore all calibration files, option files, and user setups. It is now no longer necessary to go through a “stepped” upgrade process.

New

1. Vocoder operation is now available in the DMR System. As part of this new feature, the DMR System can encode and decode DMR audio. The audio input source can be the MIC port, or the Audio 1 / Audio 2 port. Also available, as the audio input, is a stored speech pattern. The decoded audio can be routed to the speaker, scope, and the FNCT GEN / DEMOD OUT port.
2. USB port control is now available for the Motorola ASTRO 25 Series Auto-Test. This gives the user the choice to use a USB programming cable to control the ASTRO 25 Series radios during the automatic test and alignment.
3. A modification was made to the minimized FM deviation meter. When this is the only meter selected for the minimized tile it now includes bar graphs for both the positive and the negative deviation.
4. In the TETRA MS system, the Audio PSOPH filter type can now be selected from the Audio tile.
5. Added Option 390XOPT604 – Motorola APX Series Auto-Test / Alignment (Requires 390XOPT200 and OPT218). For Mobile Power alignment, AC24011 10 Amp Current Shunt would also be required. This software is compatible with APX 7000, 7500, 6000, and 6500 model radios.
6. Added compatibility between all processor boards used in the 3900 Series Radio Test Sets.

Corrections

1. Fixed an issue with simulcast alignment – audio analyzer tracking generator problem. Now has improved sweep from 1 to 100 Hz.
2. Fixed an issue when switching between the Hum & Noise meter and the SNR normal meter.
3. Fixed an issue with returning to DMR test tiles after accessing DMR Spectrum Analyzer.



4. Fixed an issue that occurred when powering down the 3920 with RS-232 connected to active interface.
5. Fixed an issue with the Motorola ASTRO Series Auto-Test not able to find test results
6. Fixed an issue with the 3920 not shutting off after installing a license file.
7. Fixed an issue with the 3920 when running the Scope DC Cal. The 3920 was resetting when you pressed the abort key.
8. Fixed an issue loading encryption keys from an ASN keyloader.
9. Fixed an issue with the DMR System for FM Deviation Limits not accepting anything over 150 Hz.
10. Fixed an issue with editing problem in the Analog Duplex Freq Error PPM Limits, allowing it to accept decimal input.
11. Fixed an issue with the minimized FM meter missing Peak Hold check box.
12. Fixed an issue with the NXDN Frequency Error Meter not measuring >100 Hz error.
13. Fixed an issue with sequence of commands causing AM and mod Dist / SINAD meters to become inoperative.
14. Fixed an issue with RCI Command :PTF:METER:FCR:CH1:STAT? not returning all fields.
15. Fixed an issue with initializing the GPIB interface.
16. Fixed an issue with line terminations using the GPIB interface.
17. Fixed an issue with NXDN Frequency Error measurement not being able to measure more than 100 Hz error.
18. Fixed an issue with the DMR Vocoder that was released in Version 1.7.8.8 to improve audio quality of demod.



Version 1.7.8.8

07/13/2011

Note: This version is only compatible with 3920s that are currently running Version 1.7.8.7. DO NOT upgrade your 3920 unless it is running Version 1.7.8.7. To determine the version of software currently running in your 3920, use the following instructions.

1. Press the UTILS key on the front panel.
2. Press the UTILS key again to bring up the UTILS menu.
3. From this menu, select Software Settings and then Software Upgrade.
4. Press the Proceed softkey.
5. From the list of versions on the screen look at BASE_CONFIG_01 or BASE_CONFIG_02 (whichever you have)
6. Make sure that the Version is 1.7.8.7.

New

1. Vocoder operation is now available in the DMR System. As part of this new feature the DMR System can encode and decode DMR audio. The audio input source can be the MIC port, or the Audio 1 / Audio 2 port. Also available, as the audio input, is a stored speech pattern. The decoded audio can be routed to the speaker, scope, and the FNCT GEN / DEMOD OUT port.
2. USB port control is now available for the Motorola ASTRO 25 Series Auto-Test. This gives the user the choice to use a USB programming cable to control the ASTRO 25 Series radios during the automatic test and alignment.
3. A modification was made to the minimized FM deviation meter. When this is the only meter selected for the minimized tile it now includes bar graphs for both the positive and the negative deviation.
4. In the TETRA MS system, the Audio PSOPH filter type can now be selected from the Audio tile.

Corrections

1. Fixed an issue with simulcast alignment – audio analyzer tracking generator problem. Now has improved sweep from 1 to 100 Hz.
2. Fixed an issue with switching between the Hum & Noise meter and the SNR normal meter.
3. Fixed an issue with returning DMR test tiles after accessing DMR Spectrum Analyzer.
4. Fixed an issue that occurred when powering down the 3920 with RS-232 connected to active interface.
5. Fixed an issue with the Motorola ASTRO Series Auto-Test not able to find test results.
6. Fixed an issue with the 3920 not shutting off after installing a license file.
7. Fixed an issue with the 3920 when running the Scope DC Cal. The 3920 was resetting when you pressed the abort key.
8. Fixed an issue loading encryption keys from an ASN Keyloader.



9. Fixed an issue with the DMR System from FM Deviation Limits not accepting anything over 150 Hz.
10. Fixed an issue with editing problem in the Analog Duplex Freq Error PPM Limits, allowing it to accept decimal input.
11. Fixed an issue with the minimized FM meter missing Peak Hold checkbox.
12. Fixed an issue with the NXDN Frequency Error Meter not measuring >100 Hz error.
13. Fixed an issue with sequence of commands causing AM and mod Dist / SINAD meters to become inoperative.
14. Fixed an issue with RCI Command :PTF:METER:FCR:CH1:STAT? not returning all fields.
15. Fixed an issue with initializing the GPIB interface.



Version 1.7.8.5

04/29/2011

Version 1.7.8.5 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. Version 1.7.1 is the MINIMUM version required to be used with the 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series products in this release.

Auto-Test II System

1. The Auto-Test system has been upgraded with many new features and enhancements. A menu selection for Aeroflex applications has been added to allow direct access to any installed applications.
 - a. Direct access to P25, Analog Duplex, and DMR Systems is available through softkeys.
 - b. Direct access to Spectrum Analyzer, Channel Analyzer, and Oscilloscope is available through softkeys.
 - c. Direct access to Stored Presets is available through a softkey.
2. Updated scripts
 - a. All test scripts for automatic test and alignment have been updated to the latest release.
3. P25 – ASN Keyloader
 - a. An issue was resolved with loading DES keys with the ASN mode Keyloader.
4. HPD Modification
 - a. A modification was made to the EVM / BER calculation for base stations.
5. TETRA System
 - a. Supura fixes



Version 1.7.8.1

05/06/2010

Version 1.7.8 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. Version 1.7.1 is the MINIMUM version required to be used with the new 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series products in this release.

Improvements and Bug Fixes

1. A selection for boot-up configuration was added to the Utilities menu. The new menu item is called Startup Options.
2. Added sample setups for Daniels repeaters.
3. Improved software upgrade reliability through USB (this will take effect on future upgrades).
4. Improved system stability / switching systems, analog routing, etc.
5. Fan speed will stay where set even after recalling setups.
6. Fixed problem with network upgrade leaving message on screen.
7. Fixed issue with switching gen level units from dBm to uV.

Analog Duplex System Improvements

1. Improved performance of AM SNR measurement
2. Improved DTMF decode function
3. Added digits A-F to tone encoding
4. Changed the bottom of the squelch range from -130 to -140 dBm

Analog Duplex System Bug Fixes

1. Fixed pass / fail limits issue with the frequency offset meter.
2. Fixed problem with performing a user calibration while the Audio Analyzer tracker was on.
3. Fixed issue with the distortion frequency not being recalled.
4. Fixed issue with remote command not being able to select 152.3 Hz width for MOD or AF SINAD / Distortion.
5. The remote command for selecting the SNR meter previously only selected the meters screen. It now selects the SNR meter.

P25 and Smartnet / Smartzone Improvements

1. Added PPM measurement to P25 Frequency Error meter
2. Added Send a Location Registration Response in P25 System.
3. Widened acceptance of symbol deviation when decoding P25 signals.
4. Added dBm units for audio level in P25 System.
5. Changed the P25 BER so that it does not count bit errors while it is trying to acquire sync.
6. Increased maximum number for average of transmitter and receiver BER meters.



P25 and Smartnet / Smartzone Options Added

1. 390XOPT606 – EF Johnson Radio Alignment Software
2. 390XOPT607 – BK DPHx Radio Alignment Software

P25 and Smartnet / Smartzone Bug Fixes

1. Fixed issue with entering frequency instead of channel number in P25 / SN Trunking Systems.
2. Resolved two issues with SN Trunking.
 - a. P25 handoff had wrong NAC
 - b. No longer requires Implicit Option
3. Fixed RCI problem that didn't allow 138 Hz to be used as the connect tone for SN / SZ.
4. Corrected issue with Signal Power meter not correcting for external loss correctly.
5. Fixed problem with limits not working correctly for frequency error meter.
6. Added units parameter to RCI command for Broadband Power Meter.

DMR

1. Added analog functions to DMR System.
2. Added Max Deviation for each symbol to Advanced Tile.
3. Added decode for Color Code, Call ID, and Unit ID in the DMR System.
4. Added capability of transmitting BS activation bursts until the repeater wakes up and then synchronizing the selected pattern to the outbound signal from the repeater.

NXDN

1. Added encode / decode for NXDN RAN

Spectrum Analyzer

1. Changes to the Spectrum Analyzer user interface.
2. Removed the enable for the Tracking Generator and changed the drop down menu for Trk Gen to include Gen, TR, and off.
3. Corrected issue with the full span button in the analyzer not actually moving the center frequency.
4. Improved resolutions of the Spectrum Analyzer marker level.

TETRA BS

1. Fixed issue with TETRA BS and BST1 offsets not working when first accessed.
2. Corrected power with TETRA BS expected power not being saved.

TETRA DM

1. Fixed problem with TETRA DM operations status message function blanking display.
2. Fixed problem with save / recall not saving power level in TETRA DM.



Version 1.7.7

12/16/2009

Version 1.7.7 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. Version 1.7.1 is the MINIMUM version required to be used with the new 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series products in this release.

Analog Duplex System Improvements

1. Added 300 Hz to 3 kHz Band Pass Filter
2. Added 3 kHz Low Pass Filter
3. Added Frequency, Level and Duration headers to the Tone Encoding Screen
4. Remote Command *RST sets level to -130 dBm and enables the generator

Analog Duplex Options Added

1. Implemented Occupied Bandwidth measurement for Analog Duplex. Available under part number 390XTOP604 and includes power between markers.
2. Improved functionality for the Audio Tracking Generator (390XOPT210) using the Audio Analyzer 390XOPT055.

Analog Duplex Bug Fixes

1. Fixed analog meter update and average rate.
2. Fixed issue with AF Gen modulation signal slipping into RF modulation path.
3. Fixed issue with Broadband Power meter limit RCI commands not accepting all units that are listed in the RCI document.
4. Fixed issue TRIP Power meter limit RCI commands not accepting all units that are listed in the RCI document.
5. Fixed issue with factory default sometimes leaving the Fgen units set to dBm.
6. Fixed issue with Inband Power Meter limit RCI commands not accepting all units that are listed in the RCI document.
7. Fixed issue with the AF:GEN:SOUR:FREQ RCI command parameter range.
8. Fixed issue with the default units for the query RCI command :FETCh:AF:ANALyzer:LEVel?
9. Fixed issue with the Balanced AF Input Measurement Units selection not matching RCI documentation.

P25 and Smartnet / Smartzone Improvements

1. 390XOPT200
 - a. Added LCO Encode Capabilities for P25 Traffic Channel Messages
 - b. Added "Unknown" for P25 voice frame ALG field for nonstandard values
 - c. Modified DataLink tile to read "Last LC Message" vs. "Last Trunking Command"
 - d. Added additional decode fields to DataLink Tile.
2. 390XOPT201



- a. Added ability to place P25 Trunked call to UUT outside +/-2.5 MHz window.
3. 390XOPT207
 - a. Added ability to perform Smartnet handoff outside +/-2.4 MHz window.
 - b. Added Sub Audible Demod Counter to meter tile.
 - c. General improvements to the Smartnet / Smartzone Analog and P25 modes.

P25 Smartnet / Smartzone Options

1. 390XOPT210 – Simulcast Audio Analysis. Provides Audio Tracking Generator to sweep audio circuits. Specifically usable for Motorola Analog Simulcast tuning. Implemented for 3920 only at this time.
2. 390XOPT214 – P25 Adjacent Status Broadcast Message
3. 390XOPT215 – P25 Secondary Control Channel Broadcast Messages
4. 390XOPT260 – P25 Performance Test Triggers. Allows for measurements on timing per TIA / AIE-102 CAAA-B.

P25 Smartnet / Smartzone Bug Fixes

1. Fixed issue with registration refuse, deny and fail not working in the P25 trunking mode.
2. Fixed issue with P25 Generator port output level jumping from -119 dBm to -120 dBm by 3 dB.
3. Fixed issues in P25 where the AF Level meter only updates once every 3 seconds.
4. Fixed problem with Smartnet / Smartzone P25 VM1 Pattern.
5. Fixed issue with Smartnet / Smartzone Trunking with Analog Voice Channel only working with 105 connect tone.
6. Fixed an issue with the RX BER Meter.
7. Fixed issues with Smartnet / Smartzone OBT Trunking and channel plans.

DMR Improvements

1. Added capability to modify the standard 1031 pattern for Caller ID and Color Code to enable use of the 1031 pattern for BER on actual MOTOTRBO and DMR Systems.

DMR Options

1. Added 390XOPT402 – DMR XML Channel Logger to log raw DMR symbols.

TETRA Bug Fixes

1. Improved switching between TETRA Systems.
2. Fixed issue with TETRA RCI stopped responding after *RST
3. Fixed issue with TETRA MS call processing
4. Fixed issue with MST1 Rx BER samples field
5. Fixed issue with storing TETRA channel plan through remote

Platform Improvements

1. Updated LINUX printer drivers.



Platform Bug Fixes

1. Fixed general system switching instability.
2. Improved National Instruments driver.



Version 1.7.6.2

07/24/2009

Version 1.7.6.2 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. Version 1.7.1 is the MINIMUM version required to be used with the new 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series product in this release.

Analog Duplex System

1. Added Option 390XOPT210 – Analog Simulcast Option (Requires 390XOPT055)
 - a. The option adds an audio tracking generator to the audio analyzer to allow swept measurements of audio response curves. Source and input can be front panel audio ports or used with modulation / demodulation.
2. Added Option 390XOPT601 – XLT-3000 Auto-Test / Alignment (Requires 390XOPT200 and 390XOPT206)
 - a. This option allows automatic test and alignment of XTS-3000, ASTRO Sabre and ASTRO Spectra radios.
3. Added dBr function to FM Deviation meter

P25 System

1. Added Option 390XOPT216 – X2 TDMA Test Suite
 - a. This option provides functions for testing Motorola X2 TDMA P25 Systems. Requires 390XOPT200 and 390XOPT201 (Available through Motorola only).
2. Added Option 390XOPT245 – X2 TDMA Mobile Emulator (Available through Motorola only).
3. Added Option 390XOPT261 – X2 TDMA Advanced Test Suite – Combines 390XOPT219 & 245 (Require 390XOPT200 and 390XOPT201) – (Available through Motorola only).
4. Added Option 390XOPT230 – Off Air Monitor software for P25 message logging. Protocol analysis tool requires 390XOPT200 and 390XOPT206.
5. Enhanced Smartnet Smartzone Trunking to include Analog voice channel handoff.

DMR System

1. Added the STD OB TSYNC pattern. This pattern is an outbound pattern, that a mobile with a transmit – receiver offset, can synchronize to, enabling it to transmit.
2. Added the advanced analysis tile.

Other Systems

1. Added Option 390XOPT402 – DMR XML Channel Logger Option (Requires 390XOPT400).
2. Added Option 390XOPT420 – dPMR – ETSI 102-490



- a. This option adds source and parametric measurements for dPMR ETSI 102-490 radio systems.
3. Added Option 390XOPT421 – Auto-Test II for dPMR
 - a. Allows scripts to be written to automate tests and measurements for dPMR radios.
4. Added Option 390XOPT440 – NXDN
 - a. This option adds source and parametric measurements for NXDN radio systems.
5. Added Option 390XOPT441 – Auto-Test II for NXDN
 - a. Allows scripts to be written to automate tests and measurements for NXDN radios.
6. Added Option 390XOPT460 – ARIB T98
 - a. This option adds source and parametric measurements for ARIB T98 radio systems.
7. Added Option 390XOPT461 – Auto-Test II for ARIB T98
 - a. Allows scripts to be written to automate tests and measurements for ARIB T98 radios.

All Systems

1. Added Option 390XOPT064 – Power between marker function has been added to the spectrum and channel analyzers.
2. Changed minimum RF frequency entry from 100 kHz to 20 kHz on RF Generator, Receiver and Spectrum Analyzer.



Version 1.7.5.2

06/15/2009

Version 1.7.5.2 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. Version 1.7.1 is the MINIMUM version required to be used with the new 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series products in this release.

Analog Duplex System

1. Added Option 390XOPT090 – Chinese Language for Analog Duplex System
2. Added Option 390XOPT064 – Power Bandwidth measurement
3. Resolved an issue with the Signal to Noise measurement function when using modulation sources.



Version 1.7.5

02/27/2009

Version 1.7.5 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. Version 1.7.1 is the MINIMUM version required to be used with the new 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series products in this release.

Analog Duplex System

1. Changed AM Power measurements on IB Power meter to show true RMS power meter with AM Modulation applied.
2. Added Tone Signaling features:
 - a. Encode and Decode: ZVEI1, ZVEI2, ZVEI3, PZEI, DZVEI, PDZVEI, CCIR1, CCIR2, PCCIR, EEA, EUROSIG, NATEL, EIA, MODAT
 - b. Encode and Decode: Two Tone Sequential
 - c. Encode and Decode: DTMF
 - d. Encode and Decode: Tone Remote
3. Improved RF Generator levelling at low RF levels.
4. Added dBm and Watts selections with load factor entry to AF Level meter.
5. Updated the DCS Encoder to allow entry of any DCS code.
6. Improved FM Deviation measurements in the presence of carrier offset.

Spectrum Analyzer

1. Added 6 new markers for a total of 8 markers.
 - a. 6 Vertical / 2 Horizontal

P25 System

1. Added additional speech patterns.
2. Added AFC pattern.
3. Fixed problems with KVL Keyloading of keys in ASN mode.
4. Fixed problems with encryption key ids.
5. Added autotune mode to find frequency of unknown transmitters.
6. Improved performance of all Trunking and Virtual Mobile functions.
7. Added EMG bit, SID, MFID to Data Link Tile.
8. Added P25 RX BER Meter.
9. Improved Vocoder Audio Output.

DMR System

1. Corrected the STD IB 1031 pattern to allow audible tone to be heard in receiver under test.
2. Added Magnitude Error Meter.

TETRA System

1. Improved marker functions with Power Profile Tile.



2. Resolved issues with LED's not tracking selected ports for GEN / TR / ANT.
3. Resolved issues with mobile registration.

Auto-Test II System

1. Added XTS-500 Automatic Alignment Option (390XOPT600).
2. Added LMR Auto-Test Option (390XOPT603).

Other

1. Added Secure FTP capability (WinsSCP). User name: user_3900, Password: 3900.
2. Added support for TightVNC (Version 1.39)
3. Added support for local network download of software updates.
4. Added Aeroflex site for direct download of new software releases.
5. *STB remote command now indicates when a new reading is available.
6. Added entry selection for Time Zone.



Version 1.7.4

Version 1.7.4 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. Version 1.7.1 is the MINIMUM version required to be used with the new 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series products in this release.

Analog Duplex System

1. Added Modulator selection to Oscilloscope to view summed modulation sources.
2. Added 100 and 200 Hz scales to Oscilloscope Demod scales.
3. Added Two Tone sequential tone encoder tile.
4. Added feature to lock the Modulation Distortion / SINAD Meter notch frequency to the AF1 frequency.
5. Added feature to lock the Audio Distortion / SINAD Meter notch frequency to the M1 frequency.
6. Added Log / Linear plot to Audio Analyzer option (390XOPT055).
7. Improved reliability of remote interface.
8. Improved Tracking Generator Leveling.
9. Improved AM Generator Leveling.

P25 System

1. Added FM Analog Generate / Receive mode to P25 System (390XOPT200).
2. Added FM Analog metering to P25 System:
 - a. Audio Distortion Meter
 - b. Audio Frequency Meter
 - c. Audio Level Meter
 - d. Audio SINAD Meter
 - e. Broadband Power Meter
 - f. Demod Distortion Meter
 - g. Demod Frequency Meter
 - h. Demod SINAD Meter
 - i. FM Deviation Meter
 - j. In Band Power Meter
 - k. RF Frequency Error Meter
3. Added Demod Audio to Scope Display.
4. Added Peak / Avg selection to Modulation Fidelity meter.
5. Improved P25 Trunking Virtual Mobile simulation.
6. Improved P25 Data Link decoding.
7. Added KVL Keyloader / Cable option to P25 System (390XOPT209).
8. Added Smartnet / Smartzone Trunking for P25 Traffic channel handoffs (390XOPT207).

DMR

1. Added DMR (MOTOTRBO) parametric analysis system (390XOPT400).



Other

1. There were many performance improvements / bug fixes implemented in this release.



Version 1.7.3

Version 1.7.3 is compatible with all 3901, 3902, and 3920 models of the 3900 Series product line. Version 1.7.1 is the MINIMUM version required to be used with the new 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series products in this release.

Analog Duplex System

1. Added Pk-Pk / 2 Deviation meter scale.
2. Added selectable resolution to auto-tune 1 Hz, 100 Hz, 1 kHz.
3. Added selectable IB / BB power meter selection to Analyzers Tile.
4. Added DCS and DCS INV Decode to Analyzer Tile.
5. Improved Squelch and Volume operation.
6. Analog Duplex Squelch will now produce flat line on scope when squelched.
7. Improved meter averaging functions.
8. Added additional DTMF key entries.
9. Added Power meter ranges 1 W, 2 W, 5 W.
10. Stabilized the audio filters to prevent oscillation.
11. Arbitrary H&N Reference remote command added.

P25 System

1. Improved P25 Conventional operation.
2. Improved P25 C4FM, CQPSK, and LSM synchronization.
3. Improved P25 Trunking operation.
4. Removed P25 patterns LDU1TRG and LDU2TRG.
5. Added P25 Trajectory Plot.
6. Corrected errors on signal encoding of P25 patterns.
7. Corrected errors on P25 data link decoding of MI field.

TETRA

1. Loopback function corrected for PowerPC based 3900s.

Overall

1. Improved store and recall functions for all systems.
2. Return key can now be used to minimize an expanded file.
3. Added Verification Procedure setups to setups directory. Version 1.7.2 and below had to be loaded from Maintenance CD ROM.
4. Added HPD setup files for testing Base Stations and Mobiles in Sample Setups.
5. Updated all pre-configured setup files for Analog and P25 in the Samples directory.
6. Added Manual / Auto mode to AC Power control in Hardware settings / operational status.



Version 1.7.2

Version 1.7.2 is compatible with all 3901 and 3902 versions of the 3900 Series product line. Version 1.7.1 is the MINIMUM version required to be used with the new 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series products.

1. Improved P25 conventional operation (390XOPT200 P25 Conventional)
2. Improved P25 Trunking operation (390XOPT201 P25 Trunking)
 - a. Note: this option requires (390XOPT200 P25 Conventional)
3. Improved HPD performance (390XOPT300 HPD Testing Option)
4. Added DES Encryption as a standard feature to (390XOPT200 P25 Conventional)
5. Expanded features for Spectrum Analyzer and Tracking Generator
6. Added LSM Generate and Receive / Analysis Option (390XOPT204)
 - a. Note: this option requires (390XOPT200 P25 Conventional)
7. Improved Save / Recall functions
 - a. Sample setups are now provided for basic Analog radio testing
 - b. Sample setups are now provided for aligning XTS-3000, XTS-5000, Quantar Base radios
8. Added new GPIB RCI commands
9. Improved Analog Duplex functions



Version 1.7.1

Version 1.7.1 is compatible with all 3901 and 3902 versions of the 3900 Series product line. In addition, Version 1.7.1 is the MINIMUM version required to be used with the new 3920 variant of the 3900 Series.

New features and functions universal to all 3900 Series products.

1. Supports new P25 conventional technology with 390XOPT200.
2. Expanded features for Spectrum Analyzer.
3. Improved Save / Recall functions.
4. Added new GPIB RCI commands.
5. Improved Analog Duplex functions.