



# 3920 Series Applications Software Release Notes

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## Release Group: June 2022

Option Number	600 / 602
Option Description	Motorola ASTRO®25 Series Auto-Test / Alignment
Current Version	4.3.0

### Improvements

1. XTL Current Limit alignment now updates the softpot with the final value.
2. Added cool downs for mobile alignments in between each frequency run.
3. Corrected popup if no radio is connected.

### Fixes

1. Corrected frequency list for VHF 100W mobile includes power detector frequency.
2. Fixed issues with the power characterization.

Option Number	604 / 644 / 645 / 646
Option Description	Motorola APX™ Series Auto-Test and Alignment
Current Version	5.4.0

### Improvement

1. Added a second method to find the radio gateway IP address.
2. Changed the order of the power softpot update, as well as setting the current and voltage limits to 4095 to avoid drawing too much current on mobiles.

### Fixes

1. Fixed an issue where the H98QD radio wasn't supported because it was returning a second band.
2. On APX8500 radios, fixed condition during PA Bias alignment where, after "No Power Detected" was displayed, the test status would show pass, but the overall test results would show abort.
3. Fixed a crash on radios that do not return a PA Bias 3 value.
4. Fixed an issue where the "B" mobiles were doing the deviation balance in high power.

Option Number	610
Option Description	Motorola MOTOTRBO™ Series Auto-Test and Alignment
Current Version	5.1.0

### New Features

1. Added support for the R7 family of radios.



Option Number	616 / 625
Option Description	L3Harris P25 Series Auto-Test and Alignment
Current Version	5.6.0

### Improvements

1. Improved overall performance and consistency of the P25 Phase 2 test.

### Fixes

1. Fixed an issue with an unsupported command being sent to the XG-25P radio during the AGC alignment.

Option Number	627
Option Description	BK KNG Command Series Auto-Test and Alignment
Current Version	4.7.0

### New Features

1. Add support for the BKR family of radios.
2. Added the new DC power requirements for the BKR5000 radios to the connection diagrams.

Option Number	629
Option Description	Tait P25 Series Auto-Test
Current Version	4.5.0

### Improvements

1. Updated the resolution of frequency error measurement to 0.01 ppm.

Option Number	637
Option Description	L3Harris XL Series Auto-Test and Alignment
Current Version	5.2.0

### New Features

1. Added support for the XL-400P radios.

### Improvements

1. Updated the mobile radio low power targets for firmware version R12D07.



Option Number	639
Option Description	Tait DMR Series Auto-Test
Current Version	4.5.0

### Improvements

1. Updated the resolution of frequency error measurement to 0.01 ppm.

Option Number	640
Option Description	Kenwood NX-3000 / 5000 Series Auto-Test and Alignment
Current Version	4.4.0

### Improvements

1. Check for unprogrammed channels when running tests, since the test frequency list can be changed by the end user.

### Stay Connected

To help you stay informed of Radio Test Set Updates, please sign up for notifications at <https://comms.viavisolutions.com/Software-Update-Notifications>.

For suggestions or ideas to improve our products, reach out to us at [avcomm.sales@viavisolutions.com](mailto:avcomm.sales@viavisolutions.com).



## Release Group: February 2022

Option Number	610
Option Description	Motorola MOTOTRBO Series Auto-Test and Alignment
Current Version	5.0.0

### New Features

1. Added support for ION model radios.
2. Added ADC alignment.

### Fixes

1. Fixed an issue in which newer firmware could cause the USB device to disappear if the Transmit Tests were run.
2. Fixed an issue that would cause the Transmit Modulation Balance test to report "No Power Detected".



## Release Group: August 2021

Option Number	640
Option Description	Kenwood NX-3000 / 5000 Series Auto-Test and Alignment
Current Version	4.3.0

### New Features

1. Added support for NX-3400, NX3920, NX3921, NX5600H, NX-5700H, NX-5800H, and NX5800T radios.
2. High power radios (NX-5600H, NX-5700H, and NX-5800H) require a 6 dB attenuator for power alignment and tests.
  - a. If no attenuator is used with these models, a notification will appear that power alignment and tests will be skipped.
3. The Cable Loss lower frequency range has been expanded down from 100 MHz to 30 MHz to support low band VHF NX-5600H radios.
  - a. Rerunning cable loss is only necessary if testing a low band VHF radio. If cable loss is not run again, any frequencies below 100 MHz will show 0 dB of loss.

### Improvements

1. Added “View test results while testing” option to test screen.
2. The test result filename will now show the test type, i.e. -Test or -AlignTest.

### Fixes

1. Fixed an issue where the NX-3720 and NX-3820 bands were swapped on some alignments.
2. Fixed an issue with the NX-5200 and NX-5300s having the wrong power targets during alignment.
3. Fixed an issue where the NX-5200 and NX-5300s skipping low power testing.



## Release Group: June 2021

Option Number	629
Option Description	Tait P25 Series Auto-Test
Current Version	4.4.0

### Improvements

1. Added a prompt to save changes when exiting the Edit Specs screen.

### Fixes

1. Fixed an issue where some radios were not correctly identified, causing the test to stop prematurely.

Option Number	630
Option Description	Kenwood 5x20 Series Auto-Test and Alignment
Current Version	4.5.0

### Fixes

1. Fixed an issue where incorrect tests were skipped when “No Audio” was selected.

Option Number	631
Option Description	Kenwood NXDN™ Series Auto-Test and Alignment
Current Version	4.5.0

### New Features

1. Added support for NX-920 and NX-920G radios.

### Fixes

1. Resolved an issue with the test reporting that the NX-820K2 radio was unsupported.
2. Fixed an issue where incorrect tests were skipped when “No Audio” was selected.

Option Number	633
Option Description	EF Johnson Viking Series Auto-Test and Alignment
Current Version	4.3.0

### Improvements

1. The TCXO calibration specifications have been updated for VP400 and VP600 700 / 800 MHz band radios.
2. The default Rx BER level has been changed to -117 dBm.



### Fixes

1. Fixed an issue where selecting the Copy button on the Edit Specs screen caused any unsaved changes to be lost.

Option Number	637
Option Description	L3Harris XL Series Auto-Test and Alignment
Current Version	5.1.2

### Fixes

1. Fixed an issue with some radios being misidentified as multiband that caused incorrect bands to be tested.

Option Number	639
Option Description	Tait DMR Series Auto-Test
Current Version	4.4.0

### New Features

1. Added support for TP9300 HB, TM9300 HB LP, TM9300 HB HP, and TP9500 HB radios.

### Improvements

1. Added a prompt to save changes when exiting the Edit Specs screen.

### Fixes

1. Fixed an issue where some radios were not correctly identified, causing the test to stop prematurely.



## Release Group: Late May 2021

Option Number	604 / 644 / 645 / 646
Option Description	Motorola APX Series Auto-Test and Alignment
Current Version	5.3.0

### New Features

1. Added support for APX4000XH and APX NEXT (H45TG) radios.

### Fixes

1. Fixed an issue with the PA Bias alignment for B model radios.

Option Number	610
Option Description	Motorola MOTOTRBO Series Auto-Test and Alignment
Current Version	4.9.0

### New Features

1. Added support for H55PD, H87JD, H87ND, and H87YD radios.

### Improvements

1. The test result filename will now show the test type, i.e. -Test or -AlignTest.

### Fixes

1. Fixed an issue with the Q and Y band radios not completing the power test.



## Release Group: Early May 2021

Option Number	637
Option Description	L3Harris XL Series Auto-Test and Alignment
Current Version	5.1.0

### New Features

1. Added support for XL-95P, XL-185M, and XL-200M radios.

### Improvements

1. Radio models are now shown on the test results.

### Fixes

1. Fixed an issue with the digital deviation test causing the test to crash if abort was pressed.

Option Number	616
Option Description	L3Harris P25 Series Auto-Test and Alignment
Current Version	5.5.0

### New Features

1. Added support for XG-100M radios.

### Improvements

1. If the radio fails to enter test mode due to being on a trunked channel, a prompt will now appear for the user to set the radio to a conventional channel.

### Fixes

1. Fixed an issue where an XG-15P with older firmware identified as XG-15 which prevented the test from running.



## Release Group: April 2021

Option Number	627
Option Description	BK KNG Command Series Auto-Test and Alignment
Current Version	4.6.0

### New Features

1. Added support for new M150 and P150 hardware types.

### Improvements

1. Updated alignment and test limits for mobiles that have a 7 Watt low power range.



## Release Group: March 2021

Option Number	641
Option Description	Kenwood Viking 5/6/7000 Series Auto-Test and Alignment
Current Version	4.4.0

### New Features

1. Starting with radio firmware 8.32.0, the radio will no longer need to be set to a conventional channel.

### Improvements

1. The model name for VHF Low Band has been updated from VMx730 to VMx630H, and high-power VHF from VMx730 to VMx730H.



## Release Group: Late September 2020

Option Number	629
Option Description	Tait P25 Series Auto-Test
Current Version	4.3.0

### New Features

1. Now supports TP9600 radios.

### Improvements

1. Frequency error limit has been updated to  $\pm 2.5$  ppm.

### Fixes

1. Increased audio output from the radio during the sensitivity test.
2. Fixed an issue with radios intermittently not being recognized by the Auto-Test.

Option Number	639
Option Description	Tait DMR Series Auto-Test
Current Version	4.3.0

### New Features

1. Now supports TP9500 radios.

### Improvements

1. Frequency error limit has been updated to  $\pm 2.5$  ppm.

### Fixes

1. Resolved an issue causing intermittent frequency and power measurements.
2. Increased audio output from the radio during the sensitivity test.
3. Fixed an issue with radios intermittently not being recognized by the Auto-Test.

Option Number	637
Option Description	L3Harris XL Series Auto-Test and Alignment
Current Version	5.0.0

### Fixes

1. Fixed an issue where radios with R10 firmware versions would intermittently fail the reference oscillator alignment.



## Release Group: Early September 2020

Option Number	641
Option Description	Kenwood Viking 5/6/7000 Series Auto-Test and Alignment
Current Version	4.3.0

### New Features

1. Now supports:
  - a. VM5730H high power VHF
  - b. VM6000 series
  - c. VM7000 series
2. To support new radios the model selections are listed with an x in place of the first model number, e.g. VM5730 will be displayed as VMx730.
3. High power (110 Watts) radios require a 6 or a 10 dB external attenuator for power tests. If this external loss is not entered in the Edit Specs screen, power tests are skipped and a prompt is displayed to use an attenuator.

### Improvements

1. Added Conventional Zone and Conventional Channel selections to the Edit Specs menu to specify what channel will be used for testing. A message will display if the radio is not set to a conventional channel.

### Fixes

1. If “No audio breakout” is not selected, the test will now fail if no audio is detected from the radio instead of being skipped.
2. Resolved an issue where the radio was not reset when the Asset alignment failed, preventing the next alignment from running.



## Release Group: Late August 2020

Option Number	604 / 644 / 645
Option Description	Motorola APX™ Series Auto-Test and Alignment
Current Version	5.1.7

### New Features

1. Now supports APX 4500 and 6500 “B” models and APX 8500 console models.

### Improvements

1. A message has been added to the Rx BER section of the test report instructing the user to ensure the “Record Audio Playback Buffer” feature on the radio is disabled. This feature, when enabled, causes this test to fail.
2. Current voltage limits are now set to the maximum during Power Detector alignment for mobiles.

### Fixes

1. For APX 8500 models, the test now aborts if no power is detected during Reference Oscillator or Power Detector / Power Characterization alignments.

Option Number	637
Option Description	L3Harris XL Series Auto-Test and Alignment
Current Version	4.9.0

### Improvements

1. The Rx RSSI alignment is re-enabled for “NoRFDSP” radios with firmware version R10C12 or higher.
2. Some R10 firmware versions are not compatible with the Phase II tests and are now skipped. Phase II tests are skipped for “RFDSP” radio R10 firmware versions before R10D08 and “NoRFDSP” radio R10 firmware versions before R10C12.

Option Number	646
Option Description	Motorola APX NEXT™ Series Auto-Test and Alignment
Current Version	5.1.7

### New Features

1. This is the initial release which supports testing of APX NEXT Series radios.



## Release Group: Early August 2020

Option Number	616
Option Description	L3Harris P25 Series Auto-Test and Alignment
Current Version	5.4.0

### New Features

1. Now supports XG-15P, XG-25M, and XG-25P models.
  - a. These radios support the following tests and alignment: Reference Oscillator, Rx RSSI, Tx Power, Rx BER, and P25 Tx Test.
2. P25 Phase II tests have been added for Tx Test and Rx BER.

### Improvements

1. Power alignments for the 7/800 MHz band have been updated to match the service manual.

### Fixes

1. Fixed an abort condition caused by no data being received from the radio during the Rx BER test.



## Release Group: June 2020

Option Number	604 / 644 / 645
Option Description	Motorola APX™ Series Auto-Test and Alignment
Current Version	5.1.4

### New Features:

1. Now supports Vertex VX-P949 radios.

### Improvements

1. The test will now abort if no power is detected during Power Detector or Power Characterization alignments.
2. Improved timing for APX 8500 power alignments.

### Fixes

1. Fixed an issue where 3920s without the DMM option would abort the test.

Option Number	637
Option Description	L3Harris XL Series Auto-Test and Alignment
Current Version	4.8.0

### Improvements

1. The Rx RSSI Alignment step is automatically skipped for “NoRFDSP” radio versions which do not support this.



## Release Group: Late April 2020

Option Number	616
Option Description	L3Harris P25 Series Auto-Test and Alignment
Current Version	5.3.0

### New Features

1. Now supports for M5300 and 30 watt XG-75M radios.
2. Added IQ Balance for XG-75Pe radios.

### Improvements

1. Splash screen updated with VIAVI branding.
2. Added a check for older radios to use a 110 mV analog input instead of 11 mV with newer radios.
3. The below deviation alignment targets and limits have been updated per the service manual:
  - a. Mobile WB TCG target from 750 Hz to 700 Hz.
  - b. Portable WB TCG limit from 250 Hz to 150 Hz.
  - c. Mobile WB 9600 DATA target from 3000 to 2900 Hz.
  - d. Mobile NPSPAC 9600 DATA target from 2400 Hz to 2350 Hz.
  - e. Mobile NB 9600 DATA target from 2350 Hz to 2900 Hz.
  - f. Mobile C4FM low deviation tolerance from 66 Hz to 100 Hz.
  - g. Portable NB TCG target from 390 Hz to 400 Hz.
  - h. Mobile NB TCG target from 475 Hz to 400 Hz.
  - i. Mobile NB DCG target from 475 Hz to 350 Hz.
  - j. Mobile WB DCG target from 750 Hz to 600 Hz.

Option Number	627
Option Description	BK KNG Series Auto-Test and Alignment
Current Version	4.5.0

### Improvements

1. Splash screen updated with VIAVI branding.
2. All power test tolerances have been changed to a minimum of  $\pm 10\%$  or 0.3 watts, whichever is greater.
3. Retries have been added to the Rx Sensitivity test.

### Fixes

1. The P25 transmit test now works with version 5.6.0 radio firmware.



Option Number	633
Option Description	EF Johnson Viking Series Auto-Test and Alignment
Current Version	4.2.0

## Improvements

1. Splash screen updated with VIAVI branding.

## Fixes

1. Resolved an issue where the second band power test only used portable frequencies.
2. Fixed headers missing on power test results.

The scripts listed below were updated with a new VIAVI Solutions splash screen:

Option 600 / 602	Motorola ASTRO®25 XTS® / XTL™ Series Auto-Test and Alignment	4.2.0
Option 601	Motorola ASTRO Series Auto-Test and Alignment	4.2.0
Option 603	TIA / EIA-603 FM Land Mobile Auto-Test	4.2.0
Option 604 / 644 / 645	Motorola APX Series Auto-Test and Alignment	5.1.0
Option 605	Icom P25 Auto-Test and Alignment	4.2.0
Option 606	EF Johnson ES Series Auto-Test and Alignment	4.1.0
Option 607	BK / Relm DPHX5102X Series Auto-Test and Alignment	4.1.0
Option 608	Kenwood 5x10 Series Auto-Test and Alignment	4.1.0
Option 610	Motorola MOTOTRBO™ Series Auto-Test and Alignment	4.8.0
Option 611	Motorola TETRA MS Auto-Test	4.1.0
Option 623	TETRA Cassidian TB3 Base Station Auto-Test	4.1.0
Option 624	Collins Aerospace 721S Blade Auto-Test	4.5.0
Option 626	DMR Repeater Auto-Test	4.1.0
Option 628 / 642	Hytera DMR Series Auto-Test and Alignment	4.6.0
Option 629	Tait P25 Series Auto-Test	4.2.0
Option 630	Kenwood 5x20 Series Auto-Test and Alignment	4.4.0
Option 631	Kenwood NXDN™ Series Auto-Test and Alignment	4.4.0
Option 636	BK KNG-S Series Auto-Test and Alignment	4.2.0
Option 637	L3Harris XL Series Auto-Test and Alignment	4.8.0
Option 639	Tait DMR Series Auto-Test	4.2.0
Option 640	Kenwood NX-3000 / 5000 Series Auto-Test and Alignment	4.2.0



## Release Group: Early April 2020

Option Number	604 / 644 / 645
Option Description	Motorola APX Series Auto-Test and Alignment
Current Version	5.0.5

### New Features

1. Now supports the APX 8500 High Power (M37TX) radios.

### Improvements

1. The Rx Duty Cycle will now use the Gen port for the signal source due to requiring a higher level than the T/R port could provide.
2. Console models with an L prefix will be identified as mobile M for identification and specification profiles.
3. For APX 8500 models, low power targets for the 7/800 band have been changed from 3 watts to 1 watt. The target may need to be changed back on radios with older codeplugs.

### Fixes

1. Fixed an issue causing alignments to abort on 3920s without a DMM.

Option Number	640
Option Description	Kenwood NX-3000 / 5000 Series Auto-Test and Alignment
Current Version	4.1.5

### New Features

1. Now supports the following NX-3000 Series radios: NX-3200, NX-3220, NX-3300, NX-3320, NX-3720E, NX-3820, and NX-3820E.
2. Added the IQ phase alignment for NX-3000 radios.

### Improvements

1. Due to the high audio output level of NX-3000 Series radios, the voltage threshold has been increased for volume adjustment.

### Fixes

1. Corrected an issue with the radio serial number not always being saved to the test result file name.



Option Number	641
Option Description	Kenwood Viking 5000 / 6000 Series Auto-Test and Alignment
Current Version	4.1.0

### **New Features**

1. This is an initial release, which supports testing of Kenwood Viking Series portable and mobile radios.
2. Includes the following test and alignments: Assist, Rx Filters, TCXO Frequency, Tx Modulation, Tx Power, Rx Squelch, Tx Parametrics, and Rx BER.
3. The following radio models are supported: VM5730, VM5830, VM5930, VP5230, VP5330, VP5430, VP6330, and VP6430.



## Release Group: November 2019

Option Number	637
Option Description	L3Harris XL Series Auto-Test and Alignment
Current Version	4.6.0

### New Features

1. Support has been added for XL-185 radios.
2. P25 Phase II tests for Tx Test and Rx BER.

### Improvements

1. The Auto-Test application name has been changed from XL-200 to XL-Portable.
2. The BER level setting can now be changed by the user.

### Fixes

1. Fixed an issue with radios using R08C03 firmware not getting set to their original mission at the end of the test.



## Release Group: October 2019

Option Number	624
Option Description	Collins Aerospace 721S Auto-Test
Current Version	4.4.0

### New Features

1. This is the initial release, which supports testing of Collins Aerospace 721S Series radios.
2. Includes the following tests: Power Meter and Frequency Accuracy, Transmit Audio, Carrier Squelch, Receive Audio, Receiver Sensitivity, Audio and Carrier Frequency Response, as well as Automatic Gain Control.
3. The following radio models are supported: 721S-1, 721S-2, 721S-3, 721S-4, RT-4110, and RT-4150.

Option Number	628 / 642
Option Description	Hytera DMR Series / Hytera DMR Repeater Auto-Test and Alignment
Current Version	4.5.0

### New Features

1. Now supports MD65x, PD5xx UHF3, and PD9xx Series radios.
  - a. For MD65x radios, the front panel programming USB cable must be used; the test cable USB connection cannot be used.
2. Hytera DMR repeaters are now supported with Option 642; requires 3920 system software to be Version 3.7.4 or higher.
  - a. The following repeater models are supported: RD62x, RD96x, and RD98x.
  - b. For repeaters, there are cable loss settings for both Rx and Tx connections.
3. When testing repeaters, the Rx portions run on the GEN port, and the Tx portions on the T/R port. No cable changes are required during testing.

### Improvements

1. Communication with the radio and the Rx BER test have both been sped up.
2. Added the “Once a day prompts” option to the test menu. The connection prompt will only be displayed during the initial test run when selected. When the radio type is changed (e.g. from portable to mobile or mobile to repeater), the connection prompt will be shown once for the new radio type.
3. For repeaters a dual cable loss control has been added.
4. Tx Deviation and Tx Modulation tests have been combined into one Tx Modulation test.
5. Connection diagrams have been updated to include the repeater connections and the special MD65x USB connection.



6. The open close squelch specifications have been updated to -118 dBm for open and -129 dBm for close.
7. Portable Tx Mod Sensitivity specification has been changed from  $\pm 1.5$  mV to  $\pm 3.0$  mV.

### **Fixes**

1. Made a change to the front-end filter alignment to prevent the test getting stuck in a loop.
2. Fixed an issue that could cause a crash during Tx Power Alignment with PD6xx UHF radios.
3. Retries have been added to SNR measurements on Rx Analog Test to help address intermittent failures.



## Release Group: September 2019

Option Number	629
Option Description	Tait P25 Series Auto-Test
Current Version	4.1.3

### New Features

1. This is the initial release, which supports testing of Tait P25 Series portable and mobile radios.
2. Includes the following tests: Tx frequency error, broadband power, P25 Tx tests, and Rx analog sensitivity.
3. The following radio models are supported: TM9100, TM9400, TP9100, and TP9400.

Option Number	639
Option Description	Tait DMR Series Auto-Test
Current Version	4.1.3

### New Features

1. This is the initial release, which supports testing of Tait DMR Series portable and mobile radios.
2. Includes the following tests: Tx frequency error, broadband power, P25 Tx tests, and Rx analog sensitivity.
3. The following radio models are supported: TM9300 and TP9300.



## Release Group: August 2019

Option Number	610
Option Description	Motorola MOTOTRBO™ Series Auto-Test / Alignment
Current Version	4.7.0

### Improvements

1. During mobile testing, if the power target appears to be off from the CPS programmed value, a “wrong target” message was displayed. We no longer display this message unless the power test fails.
2. For all regions except “AZ”, we now skip the 479.95 MHz frequency.
3. High power alignment is now limited to 2.2 Watts for the 479.95 MHz frequency.

### Fixes

1. Now works correctly with Q and Y band radios; previously these radios would abort the alignment.



## Release Group: June 2019

Option Number	630
Option Description	Kenwood 5x20 Series Auto-Test and Alignment
Current Version	4.3.0

1. Moved the sensitivity tests to the end of the list of tests.
2. Changed handling of frequency lists when more than 5 are returned.
3. Optimized deviation alignment to reduce narrowband alignments, improving deviation tests.

Option Number	631
Option Description	Kenwood NX Series Auto-Test and Alignment
Current Version	4.3.0

1. Moved the sensitivity tests to the end of the list of tests.
2. Changed handling of frequency lists when more than 5 are returned.
3. Optimized deviation alignment to reduce narrowband alignments, improving deviation tests.
4. Separated the NX-800-K2 and NX-800H-K2 radios from other -K radios.

Option Number	640
Option Description	Kenwood NX-5x00 / TK 5x30 Series Auto-Test / Alignment
Current Version	4.1.2

1. Removed popup prompt for audio tests; now tests for audio input and will adjust or prompt to skip audio.
2. Resolved issues with Tx/Rx Assist and Tx Power that could cause an abort.
3. Improvements made to Rx Squelch alignment.
4. Fixed issues with Rx RSSI alignment.
5. Removed Sensitivity alignment from menu.
6. Created configurations for setting RF Gen Level for Rx SINAD and Rx BER.
7. Improved test time for Rx sensitivity tests and alignments.



## Release Group: March 2019

Option Number	604 / 644 / 645
Option Description	Motorola APX Series Auto-Test and Alignment
Current Version	4.9.6

1. Added support for APX 8000H model.
2. Added support for APX 900 model (All bands supported).
  - a. New Alignments
    - i. RF Front End Gain
    - ii. RX VLIF DCA Phase Error
    - iii. New process for RX Duty Cycle alignment
  - b. Modified Alignments
    - i. Deviation Balance
    - ii. Reference Oscillator
    - iii. TX Power Characterization Points
    - iv. TX Power Characterization
3. Modified logic to select bands on L22WR Console.
4. Added Symbol Deviation Target and Tolerance to Specification Entry Screen.
5. Corrected an issue where the specifications were not being displayed when selecting Recall Current Radio for the APX 8000 and APX 8500 models.
6. For APX "B" series UHF R1 radios, the frequency list was modified depending on radio version number.
7. Many tests have been modified from a fixed frequency list per band to reading the test frequencies from the radio.
8. Corrected frequencies used for RX DCA Phase Error and RX Duty Cycle.
9. Corrected printout for DCA Phase Error for magnitude of RSSI.
10. Added single banded radios for APX 7500 (VHF, UHF1, 800) in radio specifications table.
11. Modified TX Attenuator Adjustment for H91TG model.

Option Number	627
Option Description	BK KNG Series Auto-Test and Alignment
Current Version	4.4.0

1. Modified Transmit Power Curve alignment for mobile radios.
2. Changed the beginning soft pot value for Power Curve alignment on M800 mobiles.
3. Removed requirement for 6 dB external attenuator for M150 50 W mobile radio power alignment.
4. Optimized Transmit Power alignment
5. For newer serial numbers, we now detect the LP radios.



Option Number	600/602
Option Description	Motorola ASTRO®25 Series Auto-Test / Alignment
Current Version	4.1.6

1. Correct PA Bias for M28QS and M28SS.
2. Correct Power Targets for H46, H66 W&U, H18W and H67U.
3. Added unique power specifications for band split of UHF R2 radios.
4. Added Print Results button that had been previously removed.



## Release Group: December 14, 2018

Option Number	603
Option Description	TIA/EIA 603 FM Land Mobile Test Software
Current Version	4.1.0

1. Added the ability to test FM Repeaters by allowing selection of RF Output port.

Option Number	636
Option Description	BK KNG-S Series Auto-Test and Alignment
Current Version	4.2.0

1. Changed the band, portable and mobile detection to be derived from the model name.
2. Added support for aligning and testing the 2 W power range.
3. The 2 W power alignment and test cannot be done on radio firmware older than 2013.



## Release Group: October 2, 2018

Option Number	600/602
Option Description	Motorola ASTRO25 Series Auto-Test / Alignment
Current Version	4.1.4

1. Removed the PA Bias 1 and 2 alignments for the M28SS.
2. Added Symbol Deviation specification entry.

Option Number	610
Option Description	Motorola MOTOTRBO Series Auto-Test / Alignment
Current Version	4.6.0

1. Added support for new models: H01ND, H01YD, H88YC, H02KD, H02ND, H56KD, H56ND, H69ND, H87YD, H01XD, H56RC, H81XC, M28KR, M28PN, M28PR.
2. Removed front end filter alignment from some models that do not support it.
3. Resolved an error on RX BER test if no data is returned from radio.
4. Optimized Reference Oscillator alignment.
5. Removed mid power test and alignment on SL 800 and 900 MHz radios.
6. Added an operator prompt to check entered specifications if target values may be different than what the radio is programmed for.

Option Number	627
Option Description	BK KNG Command / KNG2 Series Auto-Test / Alignment
Current Version	4.3

1. Added ability to detect model type for all version of radio firmware.
2. Added support for three new mobile types.
3. Added TX Modulation Deviation and RX Sensitivity test to the Align and Test menu.
4. Added the ability to not show the zone prompt.
5. Allow high power M150 50 W and 100 W radios to be tested without a required 6 dB attenuator. If alignments are selected that would require the attenuator but it is not available, they will be skipped.

Option Number	633
Option Description	EF Johnson Viking Series Auto-Test / Alignment
Current Version	4.1.2

1. Added a retry when putting the radio into Tune Mode.
2. Corrected issue with some tests not reporting fail to the menu.
3. Adjusted the SINAD search to use smaller steps.



Option Number	637
Option Description	Harris XL-200P Series Auto-Test / Alignment
Current Version	4.5.0

1. Added logic to detect interference when performing RSSI calibration.



## Release Group: June 22, 2018

Option Number	605
Option Description	ICOM P25 Series Auto-Test / Alignment
Current Version	4.1.0

1. Initial Release.
2. This option allows testing of the P25 Series of ICOM portable and mobile radios.

Option Number	632
Option Description	ICOM NXDN™ Series Auto-Test / Alignment
Current Version	4.1.0

1. Initial Release.
2. This option allows testing of the NXDN Series of ICOM portable and mobile radios.



## Release Group: April 23, 2018

Option Number	604 / 644 / 645
Option Description	Motorola APX Series Auto-Test and Alignment
Current Version	4.8.1

1. Added APX 1000 Power alignment.
2. Adjusted Power specifications on most models to be 10%.
3. Added L22WR and L30SS Console models.
4. Corrected VHF frequency for H98(6000) BN model radios.
5. Added the ability to enter the specification for Modulation Fidelity.
6. Reset Messages function will now reset specifications to default.cfg.
7. Default.cfg file will be updated the first time Version 4.8.1 is run.
8. Corrected H84 (APX 1000) Phase II Testing errors.
9. Corrected issue with 3901 / 3902 models for false DMM option reporting.
10. Added model M30TS UHF R1, R2.
11. Corrected time date stamp in data file name.



## Release Group: January 3, 2018

Option Number	616 / 625
Option Description	Harris P25 Series Auto-Test and Alignment
Current Version	5.2.0

1. Added support for XG-75M mobile radios.
  - a. XG-75M 700-800 35 W
  - b. XG-75M UHF-H 50 W
  - c. XG-75M UHF-L 50 W
  - d. XG-75M VHF 50 W
  - e. XG-75M VHF 110 W
2. Changed the order of the RX Squelch and RX RSSI tests.
3. Changed the specifications for Power Tests.
4. Removed the prompts for connecting and removing the audio cable on mobiles.
5. Changed the mobile squelch test to allow expanding the close squelch window.
6. Changed the mobile squelch alignment to use smaller generator level steps.
7. Updated the connection diagram.
8. Added an abbreviated test function that tests only three frequencies for each test.
9. Changed the mobile C4FM deviation tolerance.
10. Changed the XG-75Pe power targets to match the XG-75.
11. Changed the filter used for the NPSPAC deviation alignments.
12. Added the 700 MHz wideband deviation alignment.
13. Removed the mobile TX 838.0125 MHz test point.
14. Added up to 3 retries on RX BER test.
15. Updated the portable RSSI response test.
16. Now using cable loss factors for the reference oscillator alignment and RX Gain check.
17. Radios are version checked for compatibility for the RX BER test.
18. Resolved an issue with the OTP Narrowband alignment and test for 7/800 MHz radios.



## Release Group: November 3, 2017

Option Number	637
Option Description	Harris XL-200P Auto-Test and Alignment
Current Version	4.4.0

1. Implemented changes for compatibility with radio firmware Version R04A24 related to RSSI Test.
2. For the Align and Test mode, we have added the ability to test all the tests that were included on the Test mode menu.
3. Improved loading of the original mission at the completion of a test run.
4. Resolved an intermittent issue with the RX BER test that could cause an application crash.
5. Resolved potential issue with cable loss entries being above 0.
6. Improved the setting of the initial zone channel.



## Release Group: October 2, 2017

Option Number	610
Option Description	Motorola MOTOTRBO Auto-Test and Alignment
Current Version	4.5.0

1. Added support for the XPR 6580 IS power alignment.
2. Corrected a model ID issue with the XPR 7580e IS.

Option Number	628
Option Description	Hytera DMR Series Auto-Test and Alignment
Current Version	4.3.0

1. All test frequencies are now read from the radio.
2. Improved model identification to identify radio band and power.
3. Improved general alignment algorithm to improve alignment accuracies.
4. Improved radio communications driver to improve zone/channel queries.
5. Improved TX SNR test.
6. Modified method to detect BW (25k, 12.5k) for various tests and alignments.
7. Added message to connect the current shunt when RF Final PA Bias alignment is selected.
8. Changed the deviation level for tone decode squelch test to match the receiver BW setting.



## Release Group: May 17, 2017

Option Number	600 / 602
Option Description	Motorola XTS®/XTL™ Auto-Test and Alignment
Current Version	4.1.2

1. Resolved an issue with identifying “T” power level radios as “S” power level radios.
2. Resolved an issue with deviation balance retry if alignment was not achieved.
3. Resolved an issue with model\_ not found.

Option Number	604
Option Description	Motorola APX Auto-Test and Alignment
Current Version	4.6.4

1. Resolved a timing issue with H91TG and H84Q models prior to Front End Filter alignment.
2. Improved setup for alignments of PA Bias 1 and 3.
3. BER test will now retest on an adjacent channel if the primary test channel fails.
4. Power Characterization values are now all set to pre-set configuration prior to alignment.
5. Resolved an issue with the total test time reported.
6. Corrected the displayed specification tolerance for the Reference Oscillator alignment.
7. General improvements to the alignment algorithms.
8. Resolved an issue with the Front End Filter alignment on the H52Q model.
9. Added various methods to align based on radio model and firmware version.

Option Number	644
Option Description	Motorola APX 8000 Auto-Test and Alignment
Current Version	4.6.4

1. Added support for the APX 8500 Mobile radio.
2. Test frequencies are now read from the radio for the Front End Filter alignment, Reference Oscillator and Deviation Balance.

Option Number	645
Option Description	Motorola APX “B” Series Auto-Test and Alignment
Current Version	4.6.4

1. Version was updated to match with Option 604.



Option Number	610
Option Description	Motorola MOTOTRBO Auto-Test and Alignment
Current Version	4.4.0

1. Added SL Refresh 3W radio support.
2. Resolved an issue if the PA Bias alignment was selected but no Current Shunt was detected.

Option Number	616 / 625
Option Description	Harris P25 / Advanced Auto-Test and Alignment
Current Version	5.1.0

1. Added support for the XG-75Pe.
2. RSSI levels are retrieved from the radio.

Option Number	628
Option Description	Hytera DMR Series Auto-Test and Alignment
Current Version	4.2.0

1. The Squelch Open/Close tests have been combined into a single test.
2. Resolved an issue with the Transmit Deviation test on PD6xx models.
3. Modified the Selection menu to show only Portable and Mobile radios for alignment and test functions.
4. Resolved an issue if the specification file cannot be found when the application begins.

Option Number	627
Option Description	BK KNG Command / KNG2 Series Auto-Test and Alignment
Current Version	4.2.0

1. Added the new ESN identification method.
2. Identifies the product series of all radios.
3. The test results filename now indicates the product series.
4. Target audio level for the Squelch alignment has been changed to 6.0 volts from 6.9 volts.
5. Resolved an issue where the transmitter was left keyed if the modulation deviation test were aborted.



Option Number	630
Option Description	Kenwood 5x20 Series Auto-Test and Alignment
Current Version	4.2.0

1. Increased the number of readings taken from the AF Level meter.
2. Added the ability to turn off the automatic continue feature when setting radio volume.
3. The Squelch test now has two retries.

Option Number	631
Option Description	Kenwood NX Series Auto-Test and Alignment
Current Version	4.2.0

1. Resolved an issue with identification of some NX-220K models.
2. Added the ability to turn off the automatic continue feature when setting radio volume.
3. NX-220 and NX-420 now set the volume on the Test Channel.
4. The Squelch test now has two retries.



**Release Group: February 15, 2017**

Option Number	637
Option Description	Harris XL-200P Auto-Test and Alignment
Current Version	4.3.0

1. RSSI Alignment has been added to this version.



## Release Group: January 18, 2017

Option Number	610
Option Description	Motorola MOTOTRBO Auto-Test and Alignment
Current Version	4.3.4

1. RX Rated Volume alignment now uses 1.5 kHz Deviation for radios that are aligned with 12.5 kHz channel spacing.
2. Front End Filter alignment now uses 1.5 kHz Deviation for radios that are aligned with 12.5 kHz channel spacing.
3. The Front-End Filter is no longer aligned or tested on Refresh (e model) radios.
4. Refresh (e model) identification has been improved.
5. An issue was resolved with writing the adjustment value on RX Rated Volume alignment on newer radio firmware versions.



**Release Group: January 13, 2017**

Option Number	645
Option Description	Motorola APX "B" Model Series Auto-Test and Alignment
Current Version	4.5.2

1. This option allows testing of the newer "B" Series for the APX 6000.

Option Number	637
Option Description	Harris XL-200P Auto-Test and Alignment
Current Version	4.1.1

1. This option provides Test and Alignment per Harris requirements for the Harris XL-200P portable radio. All bands are supported.

Option Number	628
Option Description	Hytera DMR Series Auto-Test and Alignment
Current Version	4.1.0

1. This option provides Test and alignment for Hytera DMR Mobile and Portable radios.
2. Radios supported by this option are MD7xx, PD5xx, PD6xx, PD7xx, PD7xxIIB, P79xEX, PD79xIS, X1e and X1p.

Option Number	600 / 602
Option Description	Motorola XTS/XTL Auto-Test and Alignment
Current Version	4.0.9

1. Resolved issues with 900 MHz band models.
2. Improvements to Deviation Balance Alignment.
3. Added support for M79K and Q models.
4. Improved PA Bias Alignment for L20SS models.

Option Number	604
Option Description	Motorola APX Auto-Test and Alignment
Current Version	4.5.2

1. Modifications added to support 390XOPT645.
2. Added Front End Filter alignment for H84QD models.
3. Improved Deviation Balance Alignment.
4. Temporarily Removing Power Alignment for APX 1000 Series.



5. Modifications to adjustment values for APX 1500, 2500 and 4500 to support APX firmware version 15.01.00.
6. Modified RX BER test to support APX firmware version 15.01.00.

Option Number	644
Option Description	Motorola APX 8000 Auto-Test and Alignment
Current Version	4.5.2

1. Improved Power Characterization alignment.

Option Number	610
Option Description	Motorola MOTOTRBO Series Auto-Test / Alignment
Current Version	4.5.2

1. Modified Frequency list for H81QC Modulation Balance alignment.
2. Resolved issue with Reference Oscillator alignment on ATEX models.
3. Resolved issue with identifying XiR P8668 and XiR M8668 models.

Option Number	633
Option Description	EF Johnson Viking Series Auto-Test / Alignment
Current Version	4.1.0

1. Now supports all of the following models and bands:
  - VP400 – VHF, UHF1, 7-800
  - VP600 – VHF, UHF1, 7-800
  - VP900 – VHF/7-800
  - VM400 – VHF, 7-800
  - VM600 – VHF, 7-800
  - VM900 – VHF/7-800

Option Number	630
Option Description	Kenwood 5x20 Series Auto-Test and Alignment
Current Version	4.1.3

1. Improved the radio model identification method.
2. Standardized the Printouts.
3. Changed the Balance test specification for mobiles to 2.0%.



Option Number	631
Option Description	Kenwood NX Series Auto-Test and Alignment
Current Version	4.1.3

1. Added the NX-200G type K, E and C radios.
2. Added the NX-300G type K, E and C radios.
3. Improved the radio model identification method.
4. Standardized the Printouts.
5. Changed the Balance test specification for mobiles to 2.0%.

Option Number	616 / 625
Option Description	Harris P25 Series Auto-Test and Alignment
Current Version	5.0.6

1. Improved the radio model identification method.
2. Improved the DSP Version identification.

Option Number	636
Option Description	BK KNG-S Series Auto-Test and Alignment
Current Version	4.1.0

1. An issue with the Squelch alignment has been resolved.