Field Software Notice

To: **Users of 5100 ES, 51SL ES and Ascend ES Portable Radios**
Subject: **Software Release**

Platform: **5100 ES Portable**
Protocol: **All**
Version Release #: **6.14.5 (part number 039-5757-222)**
PCC Version Release #: **2.16.3 (**CD Kit Part Number**: 023-9998-5272163**)
Express Code Updater: **CD Kit 023-9998-531211**
Supersedes Version#: **6.12.5**
Effective Release: **11/15/2010**

Revision Information:	_Version_	_Part Number_
Corresponding PC Configure Version:	2.16.3	039-5754-228
Corresponding PC Tune Version:	3.0.21 (no change)	039-5697-222
Corresponding SMA Version:	1.2.7 (no change)	039-5730-202
Corresponding RFX Version:	1.0.18	039-5769-205

This field software notice serves to introduce EFJohnson's newest PC Configure programming software version 2.16.3. PC Configure version 2.16.3 should be used with radios using application software code release 6.14.5 (Portables) and 6.14.6 (Mobiles).

New application code highlight
Fire Ground mode (Optional) - Enhances communication awareness in a dynamic fire scene environment, allowing firefighters to focus on the mission at hand

- Set and Forget -
- Out of Range Alert
- Com Check
- Visual & Audible Range Indicator
- P25 Auto Switch
- Visual & Audible Evacuation Alert

Users with radios utilizing previous ES application code should refer to the compatibility matrix listed below for the PC Configuration version to be used to program the radio.

New Features / Enhancements

RADIO WIDE

- **25KHz Disable Option**
  - When enabled, this option shall prevent the radio from operating in wide band mode. The FCC has mandated all UHF/VHF radios shall not allow wideband (25 kHz) mode after January 2013. Federal frequencies are not under FCC jurisdiction; therefore, Federal customers may continue to order wideband in VHF and UHF.

- **Erase Parameters on Password Erasure**
  - When a user uses PCTune -> Tools -> Reset Passwords to erase the user passwords from the radio, the radio parms file will also be erased.

- **Add RSSI Threshold to OORI Detection**
  - A programmable RSSI threshold has being added. Now the radio will only reset the Out of Range timer if it receives carrier with an RSSI measurement above the "Out Of Range" Threshold.

- **The AMBE+2^{TM} version 1.6 Vocoder**
  - EF Johnson Technologies realizes that voice quality and improved performance in noisy environments is crucial to our customers. As a result of this realization, EF Johnson Technologies made a commitment to redesign all of its products to include the AMBE+2^{TM} version 1.6 vocoder. EF Johnson Technologies became one of the first manufacturers to adopt this vocoder, and the first to retrofit existing product over to the improved vocoder.

- **Volume Linearity Adjustments**
  - The radio volume has been adjusted so that it can now be adjusted lower than with the previous versions, but remains the same at the top end of the range.

CONVENTIONAL

- **Fire Ground Modes**
  - This feature set was designed to broaden EFJohnson's markets to include fire departments. Fire Ground Mode allows any subscriber optioned for Fire Ground Commander Mode to operate in Fire Commander Mode, and any subscriber optioned for Fire Ground First Responder mode to run in Fire Responder Mode. A radio can be programmed for both modes; however, the subscriber can only operate in one of the modes at a time. The user must exit the current mode to enter the opposite mode. The intended set up is to have one radio running in Fire Commander Mode, and remain outside the emergency site. The remaining radios operating at, and inside, the emergency site should operate in Fire Responder Mode. The Fire Commander can issue Evacuation Alerts to notify the First Responders they must evacuate. The Fire First Responders can perform a Communication Check to determine their signal strength to ensure they are in range of the Fire Commander.

Fire Ground Mode – Out of Range

- This feature is designed for Fire Mode users. When programmed, the Fire Commander will send out a beacon at the programmed beacon time interval. If the Fire Responder does not receive a carrier event, with an RSSI above the OOR threshold, within its programmed OOR Inactivity Duration time, it will go OOR to notify the user they are no longer in receiving range of the Fire Commander radio.

- **Fire Ground Mode – Communication Check**
  - This feature can be programmed to any radio, but is intended for, and only works with Fire Mode radios. Only radios that are optioned for Fire Ground First Responder, and currently in Fire Responder mode, can issue a "Comm Check." When pressed, the responder will sound one of several tones to indicate the RSSI range the Responder radio is currently in. This feature will only work on digital channels and can only be programmed as a function button. It will not be available as a menu item.

- **Fire Ground Mode – Evacuation Alert**
  - This feature can be programmed to any radio, but is intended for, and only works with Fire Mode radios. The Evac Alert is sent by the Fire Commander radio and received by the Fire First Responder. The Fire First Responder subscriber will warn the user with and Evac Alert tone and message to notify the user to evacuate. This feature will only work on digital channels and can only be programmed as a function button. It will not be available as a menu item.

- **Fire Ground Mode – Audible RSSI**
  - This feature provides the Fire First Responder an audible indication when the RSSI drops below certain thresholds indicating a poor coverage area.
  - The following table illustrates the tones heard in each RSSI range.

RSSI Level	RSSI Indicator Bars	Tone Heard
Above Good	3 or 4 bars	No tone
Above Fair, Below Good	2 bars	2 beeps
Above OOR, Below Fair	1 bar	4 beeps
Below OOR	"X"	4 beeps

The audible RSSI checks will be performed on Analog and Digital voice calls as well as the Beacon from Commander Radios and Freedom Tracker systems.

- **Fire Ground Mode – P25 Voice Auto Switch**
  - o There are times when P25 digital voice is better than analog voice. Under these circumstances it is best to operate in the P25 digital voice mode. This feature will cause the radio to change it's transmit mode, based on signal strength, from analog to P25 Digital. For this feature to work, the feature must be enabled on a radio currently on an analog transmit channel with either Fire Commander or Fire First Responder mode enabled. Under these conditions, if the radio receives carrier with a RSSI below the Fair RSSI threshold, the radio will automatically switch it's transmit type from analog to P25 Digital. This will be evident as the received audio should sound suddenly clear without background static as heard on an analog channel.

- **Support Scan Edit During Auto Scan**
  - o The user can enter scan list edit mode for the selected scan list while the radio is scanning without manually turning scan off.

- **Auxiliary B External Emergency Output**
  - o The user can set an external line by pressing the emergency button. External devices can trigger off of the radio's external line. When this option is enabled and the user presses the emergency button, the Aux B line on the accessory connector will be set low.

- **Scan Edit Disable on Priority and Priority 2 Channels**
  - o This feature will disable a user's ability to edit the Priority and Priority 2 Channels. When this feature is enabled the radio will not allow changes to Priority 1 or Priority 2 Channels in the scan list.

- **Scan List Edit Restore**
  - o This feature allows the user to revert all scan lists back to their original states as configured by the RCF file downloaded to the radio. With scan disabled, a user can reset the scan lists to their default programmed state. Pressing and holding the Scan Edit button will allow the user to access the feature. "RSET LISTS" will be displayed. Pressing the select key will reset the lists and "LISTS RSET" will be temporarily displayed before returning the user to the main display.

- **MDC Emergency ID**
  - o This feature allows a user to send an alternative ID for identification during emergency using MDC 1200 signaling on conventional analog channels. A user can program an alternative MDC Emergency ID to be transmitted while in emergency mode and placing a call, or performing ANI or RTT.

- **Global Emergency Cancel Timer**
  - o This feature allows the user to use two different timers - one to enable and one to disable emergency mode. This feature prevents accidental enabling and disabling of emergency mode by forcing the user to hold the emergency button for a specific duration to enable the emergency mode and then a separate specific duration to disable the emergency mode. The timer used for Global Emergency Cancel Timer is independent of the timer used for Emergency Press and Hold. When the Global Emergency Cancel Timer is enabled the emergency button must be pressed for the duration set in this variable in order to cancel the emergency mode even if the Emergency Press and Hold option is not enabled.

- **Squelch Adjust**
  - o This feature allows the user to change the squelch settings on a conventional analog channel from -7 to +7. While on a conventional analog channel without emergency or scan active, the user can select the programmed button or menu item for squelch adjust. The current squelch setting will show on the

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display. Using the up and down buttons on the portable, the up and down navigation buttons on the mobile, or turning the rotary knob clockwise or counter-clockwise on the mobile, the user can adjust the squelch setting to a desired level from -7 to +7. Increasing the value towards +7 causes the squelch to open sooner for weaker signals while decreasing towards -7 has the opposite effects. Pressing the select button will store the new squelch setting and return the user to the main display.

- **RSSI Thresholds/Signal Strength Icon**
  When this feature is enabled the radio will take an RSSI measurement at the start of every call. This measurement will be used to set a corresponding signal strength indicator icon. NOTE: The signal strength indicator icon from the last call will stay displayed until a new call is received. The icon signifies the strength of the last received call not the current signal strength

P25 TRUNKING

- **System Call Rx Tone**
  - This feature allows the user on a P25 Trunking system to enable/disable a tone that will sound when a call is received with a talkgroup ID of 0xFFFF (System Call ID). The tone is used to differentiate a system call versus a subscriber call. When enabled, a dual tone (600 Hz for 50 ms followed by a 1200 Hz tone for 50 ms) will be heard upon receiving a system call.

EF Johnson 5100ES / 5300ES Compatibility Matrix

PC Configure Version	510ES / 5300ES Application Code	File Format Version
2.16.x	6.14.x	
2.14.x	6.12.x	5.11
2.12.x	6.10.x	
2.10.x	6.8.x	5.10
2.8.x	6.6.x	
2.6.x	6.4.x	
2.4.x	6.2.x	5.9

Requirement: You should use the PC Configure version that coincides with that Application Code.
(Example: PC Configure version 2.14.x is used to program radios with features of Application Code 6.12.x.)

Note: You may use the highest PC Configure version with the lowest Application Code within the same File Format Version. Example: PC Configure version 2.12.x can be used with Application Code 6.4.x. The reverse however is not true. You cannot use the lowest PC Configure version with the highest Application Code within the same File Format. PC Configure is the tool used to program new features supported in the Application Code.

Exception: Sometimes a specific customer will request that the features in their Limited* Application Code can only be programmed with a specific PC Configure version. If you are not sure if you have a Limited Application Code please contact EF Johnson technical support before using a new version of PC Configure. (Phone number listed below)

Warning: Do not attempt to program a radio using PC Configure with a File Format Version (e.g. 5.11) that is a different file format than the Application Code (e.g. 5.10). Example: You cannot use PC Configure 2.14.x with Application Code 6.10.x because the file format for each is different. PC Configure will display an error message beginning with PC Configure 2.16.3 to notify the programmer of the incompatibility.

*Limited Application Code – a code that is developed to support a portable or mobile radio feature that is unique for a specific customer.

How to tell if you have an ES radio: There is a number 6 at the beginning of the application code. (For X application code, there is a number 4 at the beginning.) When you turn on a portable radio the first series of numbers on the display will be the application code (example 6.12.4). When you turn on a mobile radio the second series of numbers on the display will be the application code. (The first set of numbers will be the control head version.)

How to obtain PC Configure: Updates are free to customers that have either a PC Configure software subscription (recommended) or within 12 months of your previous PC Configure purchase.
(Contact techsupport@efji.com to receive an updated version. Contact orders@efji.com to place an order.)

Note to users with a combined fleet of ES and X platform radios: EF Johnson X platform radios should be operating on the final Application Code 4.15.5 and only programmed using PC Configure Version 2.10.2.