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## KNG Firmware Releases

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Release Date Oct. 30, 2015

Release KNG-Pxxx Portables	Ver. 5.3.0
KNG-Mxxx Mobiles	Ver. 5.3.0
KAA0660 Remote Control Head	Ver. 5.3.0
KAA0670 Handheld Control Head	Ver. 5.3.0

Minimum Neovision Editor KAA0732	Ver. 2.3.0
Neovision ASK Editor KAA0735	Ver. 2.3.0

## Features

### General:

- Increased channel capacity from 2048 to 5000.
- Added "Radio Accountability Tone" - it was requested by a fire agency to use at a fire scene to account for all personnel to save time during a roll call.
- Added "Alert Tone" feature
- Modified the "minimum volume" set feature
- Improved boot time
- Improved the Zone write time when writing Only Zone Parameters to the radio.

### Portable:

- Internal Button Press Test.
- Portable Battery Life Function and Improvements -
  - In the programmable menu screen "Battery Life", the following values can be read:
    - % battery capacity available until depletion
    - The full capacity the battery
    - Estimated time left before depletion

### Mobile/Base:

- When in DFSI mode with the Base or Mobile, the display to indicate a remote connection and not just showing a blank screen.
- Added the press and hold feature when using an accessory button in the mobile as an emergency button.
- Added Accessory Input function to mute the Mobile audio.
- When connected to DFSI Console, don't respond to call alerts, radio checks...like a subscriber would.

### Conventional:

- Increased MDC List capability from 255 to 65535.
- Added OTAR registered field to the radio information menu screen.
- Added additional "Busy Channel Lockout" Options
- Added the ability to "Enable/Disable User Selectable TX Tones" on a Zone by Zone bases.

Nuisance deleted channels did not recover correctly

Bug Fixes

General:

Portable to Mobile Cloning Failure  
Can't exit sleep on STEK display  
Channel Soft Stop bug on radios with continuous channel knob  
Rekey request error reporting

Portable:

Backlight stuck off  
Potential lockup issues

Mobile:

System test options are out of sync  
Mobile w/ HHCH loading large list screen inconsistency  
Initial accessory input state  
Accessory input mute

RCH:

Won't go into configuration menu

Conventional:

Vote scan fails on incorrect code guard  
Multiple vote scan groups didn't work  
Inconsistent results when reading CxCSS picklist

Trunking:

Site alias display line not working  
Encrypted transmission received without proper key  
Encryption Icon delay

... and various more

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KN9 Firmware Releases

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Release KN9-Pxxx Portables Ver. 5.2.0a  
KN9-Mxxx Mobiles Ver. 5.2.0a

Minimum Neovision Editor KAA0732 Ver. 2.2.1  
Neovision ASK Editor KAA0735 Ver. 2.2.1

Features

GENERAL

- This is a portable and mobile build based off of production release 5.2.0 that reduces the boot-time of the radio.
- The firmware for the mobile control heads has not been re-compiled for this release.
- Control heads interfacing with a mobile loaded with 5.2.0a firmware should use version 5.2.0

This release is a point release to shorten the boot time.

The BSP has changed from 5.2.0, but not the ARM or the DSP.

The portable and the mobile firmware has been compiled using the updated BSP, but the firmware for the control heads had not been re-compiled and instead uses the images from 5.2.0.

Therefore there are no images or source code for the RCH or the HCH for this release.

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KNG Firmware Releases

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KNG-Mxxx Mobiles	Ver. 5.2.0
KAA0660 Remote Control Head	Ver. 5.2.0
KAA0670 Handheld Control Head	Ver. 5.2.0

Minimum Neovision Editor KAA0732	Ver. 2.1.0
Neovision ASK Editor KAA0735	Ver. 2.1.0

Features

Conventional:

- Notify user of RX-only emergency channel
- Autoscan
- Channel scan list edit button rework
- DES-XL
- Disable code guard during user squelch adjust
- Encryption icon shown constantly with non-encrypted RX
- Global squelch adjust option
- Hide designated channels from menu selection

- Modify nuisance delete restoration criteria
- Modify nuisance delete so TX does not cancel deleted channels
- Option to disable scanner penalty
- Provide long-press option for send signal
- Talkback improvements
- Zone scan without channel scan message

P25 Trunking:

- RX-only monitor

Remote Control Head:

- Show head # in info menu

Handheld Control Head:

- Channel select using numeric keypad
- Master volume control of RCH volume

Portable:

- Add display timeout timer
- External emergency should use orange button programming
- Make toggle switch sense programmable
- Minimum volume level option
- P800: power select for 700MHz band

Mobile:

- Add programmable control head baud-rate
- Add separate master volume control parameter for RCH control
- Change accessory serial port to 9600 baud
- LCD brightness setting
- Mobile backlight activated by any button press
- Output lines should support 4 control heads
- Powerup whenever power is applied
- Store control head baud rate elsewhere
- User selectable I/O disable

DFSI:

- Channel base index option
- Formal standard conformance
- Relay unit ID information

FSI:

- AMBE audio

Miscellaneous:

- Add engineering options parameter
- Add git commit hash to version menu
- Channel increment/decrement using up/down keys in channel add menu

- Date and time display line
- Display build date in versions menu
- Improve persistent settings
- Man down emergency
- Optimize GLTimers
- Remove anti-clone feature from parameters download
- Support alphanumeric versioning
- Unit ID "phone book" log

## Bug Fixes

### Conventional:

- Channel parameters not cloned - Hidden and Scan Penalization
- Auto vote scan + display selected channel only
- Backlight ignores settings when assigned to side button
- Cloning does not work
- DES-CFB key fail failure
- DES-CFB with DTMF ANI causes the radio to stick in transmit
- DES-XL doesn't display key
- Emergency alarm revert channel
- Emergency call not properly cancelled
- Enabling scan while receiving can remove you from the active channel
- GPS transmit breaks emergency alarm
- Improve zone scan UI
- Legacy cloning issues
- Live dial won't work after quick PTT presses
- MDC emergency alarm with hot mic
- MDC emergency revert channel
- Mixed mode talkback status is not cleared on channel change
- Mobile I/O emergency doesn't always cancel
- P25 emergency hot mic cannot be cancelled
- Portable inhibit/uninhibit response speed
- Portable minimum volume threshold is not audible
- Secure TX after key fail
- Surveillance mode is not saved when toggled through menu
- Unit call logs
- Unit call with analog TX mode
- Update command channel parameters
- Voice mute disregards RX code guard
- Zone scan message

### P25 Trunking:

- Certain mobile I/O states don't work when in priority or dual-mode scan
- Dual mode scan lock-up
- Failsoft does not work
- GPS system test menu doesn't update
- Priority nuisance channels not cleared on channel change

- Radios don't data register if DMS active
- Scan shows wrong talkgroup
- Talkback from RX-only trunking causes lock-up
- Unit call fails on Harris systems
- Voice mute icon does not show up on control heads

Handheld Control Head:

- Can't add channel to command zone

Dual Mode Scan:

- Receiving mixed-mode digital blanks screen

Mobile:

- I/O disable should drop lines inactive

DFSI:

- IDA reporting issues with out of range trunking
- Radio will not fully connect to a console when preset to a trunking talkgroup
- Respond to voter commands
- Retransmission issues

FSI:

- Disconnect causes incorrect transmit behavior

FIPSCOM:

- App erasure

OTAR:

- Rekey KMM error
- Invalid message number prevents delayed acknowledgement
- KMM received while sending can cause a lockup
- No response on invalid DES MAC
- Rekey keyset limit is 7
- SLN 0 causes the FIPSCOM to be unresponsive

Miscellaneous:

- BSP maintenance version is not shown
- Build date not displaying correctly
- CTCSS RX qualification fails
- Display backlight
- Key entries do not default properly
- Non-consecutive zones broken in dual mode and trunking priority scan
- Radio does not fully power down
- Should DES-XL encryption work on digital channels?
- Soft power down bugs
- Transmit inhibit feature

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Release KNG-Pxxx Portables	Ver. 5.1.0
KNG-Mxxx Mobiles	Ver. 5.1.0
KAA0660 Remote Control Head	Ver. 5.1.0
KAA0670 Handheld Control Head	Ver. 5.1.0

Minimum Neovision Editor KAA0732	Ver. 2.0.2
Neovision ASK Editor KAA0735	Ver. 2.0.0

## Features

### Conventional:

- DTMF live dial keypad programming
- Add priority scan period to keypad programming
- TX on last voted channel option
- Vote during repeater hang time
- PTT-ID disable timer
- Emergency alarm using non-MDC analog signaling
- Securenet DES CFB
- Provide TX power options

### P25 Trunking:

- Unify crypto UI with conventional
- Attempt initial sync detection after phase wrapping for Phase 1 signaling
- Ultra Narrow Channel Filter
- Display site name when in intra-WACN roaming
- Dynamic regrouping encryption
- Priority scan beep
- Message update

### Remote Control Head

- Support more than 2 remote control heads
- Monitor TX audio on non-transmitting RCHs

### Miscellaneous:

- Index instead of copy for command zone channels
- Allow non-consecutive channels and zones
- Display key when TX secure selected
- Non-infinite key retention option
- Added up to 48 crypto keys
- Added Command zone channel assignment

## Bug Fixes

### Conventional:

- Vote scan w/o code guard fails to vote
- Improvement to Enhanced scan
- Noise burst on digital encrypted scan RX
- Issues using DES-CFB with an incompatible FIPSCOM
- Mixed mode emergency or call alert causes unresponsive state
- Mixed mode talkback won't work after receiving digital
- Incorrect busy channel lockout when scan active
- Unit call not working properly
- Call alert lockup under certain conditions
- MDC emergency call lockup
- MDC emergency alarm lockup
- MDC radio check lockup
- Lock-up when emergency alarm cancelled on RX-only channel
- UID not displayed during emergency alarm
- Emergency alarm behaves differently in Mixed and Analog modes
- Incorrectly decrypted audio not muted
- Vote scan does not fully qualify carrier
- Vote scan degrades audio
- Legacy cloning improvements
- Picklists do not clone from either a DPHCMD or a GPHCMD over to KNG
- Off-hook scan doesn't work correctly

### P25 Trunking:

- Potential of missing calls
- TDMA unit calls fail when radios are on different sites
- Potential of not hearing all 3 permit tone beeps
- Reduce time taken for roaming RSSI check
- Lower RSSI measuring time for all bands
- Emergency Hot mic audio
- DMS scan causes RX analog to indicate RX secure
- Priority on Selected Icon's don't reflect inbound traffic
- Emergency operation on composite control channels
- Harris NCR system compatibility Improvements
- TGID display not updating when busy expires in selected talkback

### Remote Control Head:

- Pressing PTT on one control head enables transmit for all control heads

### Handheld Control Head:

- Highlighted softkey moves randomly after TX

### Dual Mode Scan

- Potential inability to transmit when DMS is on



Dual mode scan edit list uses index as channel

Portable:

Rapid cycling of on-off knob makes radio unresponsive

Mobile:

Doesn't reset after writing parameters  
TX noise due to display backlight adjustments  
M800: always displays "source fault clear" on power up

Miscellaneous:

Cannot reference channel 1  
UI lockup after downloading parameters  
parm loading abort due to channel ID list entry  
Radio displays keyfail with keys loaded  
OTAR - false reports of UKEK not loaded into radio  
KNG-PxxxS to KNG-xxxx cloning always fails  
GPHCMD fails CMD group clone to KNG  
When in Site menus, radio will not transmit

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Minimum Neovision Editor KAA0732	Ver. 2.0.0
Neovision ASK Editor KAA0735	Ver. 2.0.0

Features

TDMA Support  
TDMA: group regroup & dynamic regroup  
P25 Trunking: OTAP read enhancement  
P25 Trunking: Static SNDCP Data Registration  
P25 Trunking: Forced System Reset  
P25 Trunking: Enhanced Roaming  
P25 Trunking: Roaming Notifications  
P25 Trunking: Failsoft by Personality  
Conventional: Add "radio name" display choice to programming/cloning  
Add ability to display radio name/alias instead of UID  
Make low battery warnings selectable  
backlight toggle incompatibility

Make RCE crypto work with TDMA  
Add trunked DTMF all-call alert to sentinel operation  
Return to last active RX channel when exiting scan  
Single button channel scan + priority scan  
Make secure LED operation the same for trunking as it is for conventional  
After Keypad select of 'Backlight off', backlight continues to operate for key presses  
Automatically translate trunked call alerts for multiple unit IDs to DTMF alerts  
Add AlgID + KeyID for RX of key not in alias table  
Keypad programming should allow deletion of command zones  
Picklist cloning should include Two-Tone, MDC and DTMF lists  
Add call alert UI support on the HHCH  
Change MDC encode features to allow hex input  
Add MDC inhibit & uninhibit encode operation  
Add HHCH speaker parameters to keypad programming  
Conventional P25 call alert support for group addresses  
MDC call alert & voice selective call encode  
Display useful message if Warm-Start store key fails

#### Bug Fixes

Incorrect priority scan indicator  
P25 Trunking: Lockup if improperly programmed  
P25 Trunking: busy UI state not updating properly  
P25 Trunking: Group Regrouping Denies in Australia  
P25 Trunking: Site Search soft key assignments incorrect  
P25 Trunking: dual mode scan nuisance delete bugs  
P25 Trunking: site affiliation display incorrect  
P25 Trunking: False PTT  
OTAR: KMM responses aren't sent while scanning  
Dual Mode Scan: Lockup when turning scan off/on while receiving/transmitting  
Dual Mode Scan: Speed up conventional scanning  
Dual Mode Scan: Errors when removing all trunking channels from list  
Conventional: Scan lockup  
Conventional: scanning quits  
Conventional: channel busy fails when set to status symbol  
Conventional: RX is interrupted by unit call selection  
Conventional: priority conv scan lockup  
Conventional: TX 2-tone w/ tone B = 0 causes TX lockup  
Conventional: 2-tone TX menu item cut-off on portable  
Conventional: priority scan failure  
Conventional: PRI 1 takes too long to override PRI 2  
Conventional: secure strapped revert emergency call keyfail lockup  
Conventional: scan deactivation causes icons to stick  
Conventional: busy channel lockout fails for digital  
Conventional: encryption LED fails during scan  
Conventional: NAC picklist shows empty entries

Conventional: simultaneous cloning causes lockups  
 Conventional: cloning failure causes lockup  
 Conventional: keypad programming prohibits TGID=0  
 Conventional: zone scan fails on non-sequential zones  
 Conventional: RX mode icon wrong if RX dequalifies  
 System calls causing mobile sluggishness  
 Flashing the radio with all 5 images causes splash screen to stick  
 Mobile menu can get stuck  
 Busy channel lockout (carrier) failure with active channel  
 SLN=0 causes various problems  
 GPS coordinates not displayed properly  
 TX secure behaves erratically  
 P800 always aligns RSSI scale to the same number  
 Sentinel DTMF ID of 0000 results in indefinite tx  
 Manual two-tone signaling causes transmit stick on the mobile  
 Conventional data messages do not check receive mode  
 Offhook scan enable should be made independent of the offhook monitor option  
 Display of my own UID is not always correct  
 Radio goes into Monitor Mode inadvertently  
 If System Priority and Zone Priority point to the same channel, Priority doesn't work  
 MDC signal causes transmit stick  
 Failed P25 call alert "OK" button leaves you in a menu you cannot escape from  
 Digital RX causes unqualified UI indications after end of message  
 Voice mute icon does not always display for automatic voice mute  
 Backlight during scan comes on more often than it should  
 Enabling conventional scan and dual mode scan at same time  
 Priority scan fails if Pri1 is system-based  
 Encryption will do a "Key Fail" with tone on first PTT only

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#### KNG Firmware Releases

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Release Portable/ Mobile	4.6.2
Control Head/ HCH	4.6.2

Minimum Neovision Editor Rev. 1.5.0

#### Features

P25 Trunking - Dynamic Regroup  
 Display MDC ID's as decimal as an option  
 Support MDC group, fleet & wildcard addressing  
 Support long block MDC  
 Enable ID alias lookup for MDC signaling  
 Stop premature low battery during TX with IS pack

No keypad editing lockout for call list picklist  
Rapid scroll feature needs to be added to trunking  
Add Clear Tx Beep to Mixed Mode Analog Tx  
Add mobile accessory output option for transmit indication  
Automatic voice mute per-channel  
Add alternate display line options  
Talkaround optionally applies on a per-channel basis  
Allow command zone channel add feature to work with trunking channels  
Add a way to monitor GPS statistics through the USB  
DMS: Speed up OOR scanning; implement OOR icon  
Add support for Motorola wide pulse modulation  
Make voice mute operation per-channel instead of per-zone  
Add ability to rapidly scroll through long menu  
Remember last channel of each zone during zone change  
Improve AMBE noise cancellation  
Add use group key for unit call and make it default to true  
Beep when Priority goes active  
Portable: Soft Power Down  
Portable: Toggle Switch Zone Select

#### Bug Fixes

Correct MDC voice mute operation to account for long block packets  
Green LED operation is not consistent in Voice Mute  
MDC ANI can cause ID = 0 display if MDC voice mute is enabled for the ANI ID  
MDC Unit ID reappears after Monitor Mode is changed from open  
ID display during scan hold does not work if MDC is sent at end of TX  
P25 Trnk - Priority on Selected not initialized after download  
P25 Trnk - Unit Call denied by FNE  
P25 Trk - Unit Call Accept button doesn't work  
P25 Trk - Radio displays "Emergency" when transmitting  
P25 Trk - Dual Mode Scan lockup  
P25 Trk: Cassidian systems cause radio to group affiliate to 0  
P25 Trk: TG busy indication doesn't work on older Harris systems  
OTAR: Deleting last TEK in radio causes response KMM to fail  
OTAR: Radio doesn't always deregister during scan  
Incorrect KEK can cause OTAR Registration to fail when it shouldn't  
Off-hook settings for Scan depends on Off-hook setting for Monitor  
Priority scan on digital channel can cause infinite scan hold time  
Powerup zone should be last zone not toggle switch zone  
A radio with Talkback Scan enabled can transmit a TGID of 65535  
RXA with code guard causes RXA Icon to stick until channel changed or power cycle  
A new channel added through keypad programming doesn't show up until a zone cycle  
Keypad programming display lines can be navigated even when locked out  
Mobile backlight only goes from off to on if the soft keys are pressed  
Keypad programming unit call alias cuts off on the mobile and control head display  
Toggling channel scan disables secure transmit  
Key fail display prevents rapid channel changes

Zone scan cannot be changed while scanning  
Smart-mic backlight will not turn-on  
P25 Trk: Harris County/City of Houston zone overlap issue  
DMS: Out of range radio won't scan to conventional channels  
DMS List Edit - View option doesn't display some channels  
Toggle switches can be ignored during unit call RX

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Release Portable/ Mobile           4.5.0  
                  Control Head           4.5.0

Minimum Neovision Editor Rev.   1.4.19

Add     Support for Mobile GPS option  
Add     Home channel button assignment  
Add     Channel Number + Zone Label display line selection  
Add     Dual Mode Scan List user selection  
Add     DTMF decode on digital channels (Voice Mute)  
Add     Mobile I/O support for COR on trunked systems  
Add     Mobile display dimmer  
Add     Trunking wide area single site support  
Add     Allow Vote scan list selection

Enhance Additional keypad programming functions  
Enhance Show/Hide own Unit ID when Unit ID is programmed as display item  
Enhance Allow squelch adjustment per channel  
Enhance Legacy cloning operation  
Enhance Expanded two-tone notification timing  
Enhance Trunked preferred site operation  
Enhance OTAR: Multiple group RSI support

Fix     Changed preset squelch value to allow audio at lower signal level  
Fix     Allow Tx/Rx while in menu operation

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Release Portable/ Mobile           4.4.0  
                  Control Head           4.4.0

Minimum Neovision Editor Rev.   1.4.17

Add     MDC Support  
Add     Command Zone Operation  
Add     Messaging Capabilities  
          Text Messaging

Add User Status Messaging  
Paging and Call Alert  
Two-Tone Paging  
DTMF Paging  
MDC1200 Paging  
Call Alert Paging  
Radio Check  
Add Radio Inhibit/Uninhibit  
Add Enhanced Lockout Feature Set  
Add Auxiliary Input/Output Functions for mobile

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Release Portable/ Mobile 4.02.16  
Control Head 4.02.11

Minimum Neovision Editor Rev. 1.4.15

Add Display 'Call Alert Successful message  
Add P25 Trunk Unit Call messages  
Add Conventional scan preamble for TSBK ISPs and Data  
Add RCI Diagnostic Send ISP capabilities  
Add Allow RX audio while in sub-menus  
Fix Conventional emergency channel selection  
Fix Talkback encryption key  
Fix Disable battery monitor during transmit  
Fix OTAR MAC calculation interference with conventional channel encryption operation

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Release Portable/ Mobile 4.02.15  
Control Head 4.02.11

Required Neovision Editor 1.4.12

Fix Site trunking to wide area trunking transition

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Release Portable/ Mobile 4.02.13  
Control Head 4.02.11

Required Neovision Editor 1.4.12

Add Conventional OTAR capabilities  
Fix Trunking OTAR: Reestablish key conditions once radio is rekeyed

Fix Minnesota Trunking: Inhibit after an emergency fix

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Release 4.02.12

Required Neovision Editor 1.4.8

Add Add wait/add identifiers if not present during control channel validation  
Enhance Status Update Enhancements  
Fix Radio displays DSP Error 1 after NeoVision download/power cycle.  
Fix Trunking Scan Lockup  
Fix Harris P25 Trunking: OTAR Registration

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Release 4.02.08

Required Neovision Editor 1.4.7

Add Keypad Select assigned in menu and button  
Add DSP: Add eeprom protection  
Add Mobile: Add backlight level menu settings  
Add P25 Trunking Emergency Call Cancel  
Add Trunking Unit Call without availability check (Harris)  
Add Trunking OTAR Option ability  
Add Mobile: Add fixed MENU softkey on right side of display  
Enhance Mobile soft button indication that feature is on  
Fix Autoscan UI issue  
Fix Trunking Emergency Alarm use emergency group instead of current working group  
Fix Trunking early receive LED not turning off in all cases  
Fix P25 trunking group call audio opens slow  
Fix P25 Trunking: Source ID of zero slows audio open speeds of unit call and group re-grouping calls  
Fix P25 Trunking: Group call unit ID of 0 displayed  
Fix Unwanted transmission after power-on with PTT held.  
Fix P25 Trunking: earlier LED illumination for group calls  
Fix P800 and M800 improve RX hum and noise.