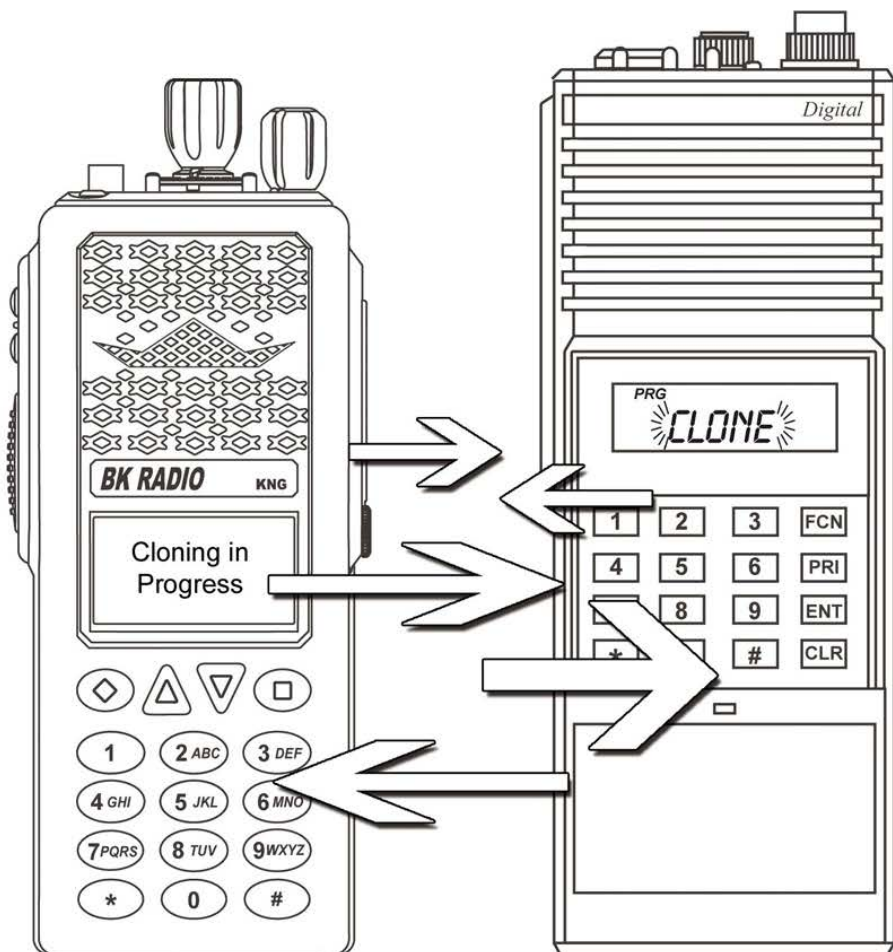


KAA 0701

Multi-Model Cloning Cable

User's Manual

Digital Version
Rev. 04-18



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Introduction

The KAA0701 Cloning Cable offers radio users the ability to share programmed information between KNG portable and mobile radios and/or other BK Radio legacy models.

Operation

The Source radio is a radio programmed with the desired radio frequencies and settings you wish to transfer to another radio of the same frequency range.

In order to clone radio information the Source radio must have a menu item programmed, via PC Radio Editor, to allow cloning. (Refer to the “Menus/Controls” section of the radio editor.)

The radio receiving the program is referred to as the Target.

Target radios can be programmed to block incoming cloning information on a zone by zone basis.

The KAA0701 Cloning Cable requires the use of a KNG or KNG-S model as either the Source or Target radio.

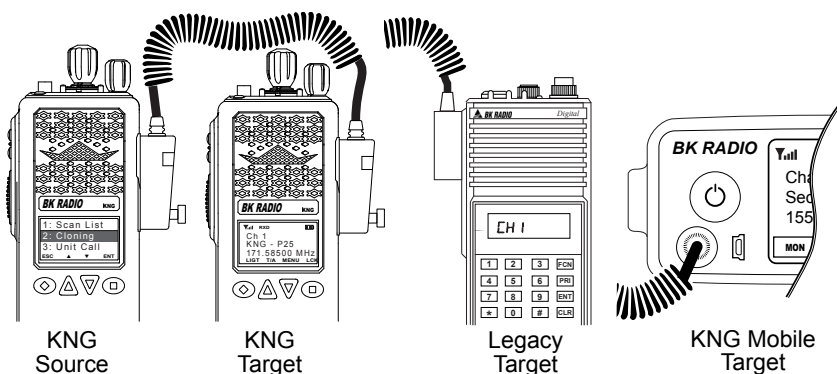
KNG as Source Radio

Connect the KAA0701 Cloning Cable to the side connector of the Source and Target radios and power up both radios.

NOTE: Insure that all scan functions are turned off prior to cloning.

MOBILE NOTE: Microphone must be attached at power-up prior to cloning.

LEGACY NOTE: When Cloning with GPH or DPH series radios, make sure the SQUELCH switch is in the detent position (full CCW position).



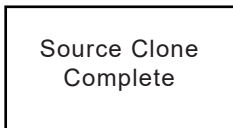
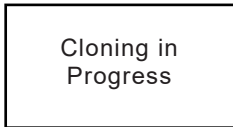
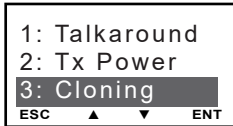
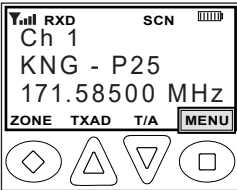
On the source radio select the zone with the information to be cloned by pressing the Zone button, or selecting “Zone Select” from the menu, then entering the number of the desired zone.

On the target radio select the Zone or Group to which the information is to be sent.

For Legacy radio models select a target group by pressing the [#] key and entering the number of the desired group.

Some zones may be blocked by PC programming to prevent them from being overwritten. Only unlocked groups will accept incoming clones.

Sending Information



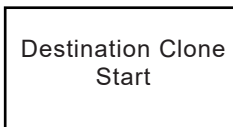
On the source radio:

1. Press the Menu button.
2. Use the up/down buttons to select “Cloning”.
3. Press the [ENT] button to send the cloning information.

While sending information “Cloning in Progress” will be shown on the source radio display.

After successful radio data transfer, “Source Clone Complete” is briefly displayed on the source radio.

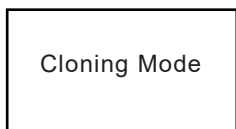
Receiving Information



KNG Target

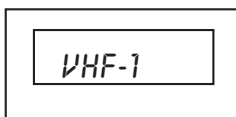
Target radios display a message to indicate receiving incoming information.

KNG portable and mobile target radios display “Destination Clone Start” during the cloning process.



KNG-S Target

KNG-S model portable display "Cloning Mode".



Legacy Target

Most Legacy target radios display "VHF-1" during the cloning process.

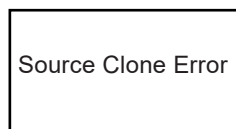
When the cloning process is successfully completed KNG radios will automatically shut down and reset.

NOTE: Upon reset the radio reverts to Zone 1.

NOTE: After cloning a KNG Mobile, the microphone must be connected and radio power cycled to return to normal operation.

KNG-S and Legacy models return to normal operation in the active zone or group upon successful cloning.

Error Notifications



KNG Source

If the targeted zone is blocked from cloning, or the clone is not successful any other reason, the KNG Source radio will display "Source Clone Error" and require radio power to be cycled.



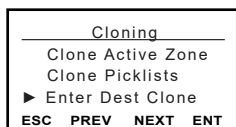
KNG Target

If a KNG targeted zone is blocked from cloning the target will display the "Destination Clone Locked" message and requires radio power to be cycled.

KNG-S and Legacy target radios do not display any error messages.

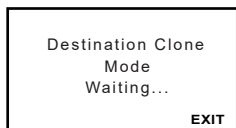
KNG as Target Radio *(firmware version 4.6.2 and higher)*

To clone to a KNG radio, it must be put in “Destination Clone Mode.” The KNG radio can only receive “Active Zone” or “Picklist” clone information.

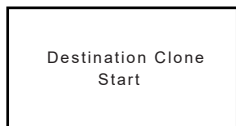


On the KNG Target radio:

1. Select the Menu button.
2. Use the up/down buttons to select “cloning”.
3. Press the [ENT] button.
4. Select “Enter Dest Clone”.



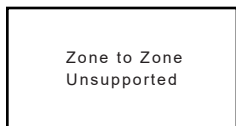
When the KNG Target radio is in “Destination Clone Mode”, the Source radio can initiate the cloning of the “Active Zone” or “Picklist”.



When cloning has started, the KNG Target radio will display “Destination Clone Start”



After a successful information transfer, “Power off” is displayed and the radio will restart.



The only cloning functions supported by the KNG Target radio are “Active Zone” and “Picklist”. All other functions are unsupported.

KNG-S Model Cloning

KNG-S radios allow for three cloning options:

Active Zone - Copies the information in the Source radio's active zone to the Target radio's active zone.

Zone-to-Zone - Allows for selection of any zone in the source radio to be copied into any non-blocked zone in the Target radio.

Entire Radio - Copies all non radio specific data from the Source radio to the Target radio. Radio specific data includes P25 ID, serial number, encryption keys and passwords.

Zone-to-Zone and Entire Radio cloning are available only when cloning between two KNG-S models and not supported by other KNG portables, mobiles or legacy radios.

Zone Cloning Information

Cloned zone information includes:

Channel and Zone Labels	Bandwidth
Frequencies	Low Power Selection
Operating Modes	ANI Settings
Code Guards (CG)*	Zone Priority Settings
Network Access Codes (NAC)*	Zone Scan List Selection
Squelch Operation	Security Settings
Talk Groups*	OTAR Channel
Scan List	

*If picklist selections are assigned in the source radio, the associated value will be cloned to the target radio. For instance, if a channel has a picklist selected NAC whose value is \$123, then \$123 will be sent to the target radio. The target radio picklists will not be affected.

Entire Radio Cloning Information

When "Entire Radio" is selected from the cloning menu, information from the all zones is sent to the corresponding zones of the radio Target radio.

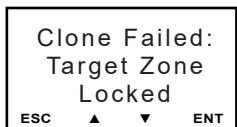
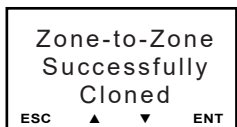
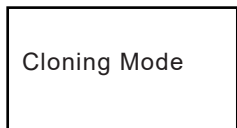
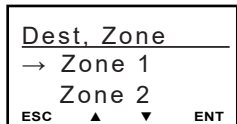
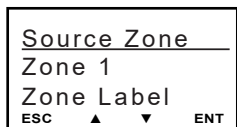
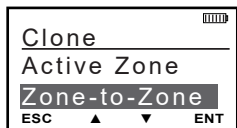
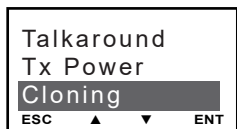
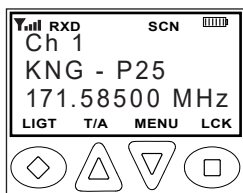
NOTE: Radios programmed with any zones blocked from receiving cloning information will not accept an "Entire Radio" clone.

Entire Radio cloning transfers all radio information except the following:

Radio Serial Number	Encryption Keys
P25 Identification Number	Passwords

KNG-S to KNG-S Instructions

Connect the KAA0701 Cloning Cable to the side connector of the Source and Target radios and power up both radios.



On the Source radio:

1. Press the Menu button.
2. Use the up/down buttons to select "Cloning".
3. Press the [ENT] button.
4. Use the up/down buttons to select the cloning type.
5. Press the Enter button to send the cloning information.

The following additional steps are required for Zone-to-Zone cloning:

- a. Use the up/down buttons to select the desired Source radio zone.
- b. Press the Enter button.
- c. Use the up/down buttons to select the desired Target radio zone.
- d. Press the Enter button to send the cloning information.

While sending or receiving information "Cloning Mode" will be shown on the Target radio display.

After a successful information transfer, "Cloning Successful" is displayed on the Source radio before reverting to Send Clone mode.

If the cloning process fails or the Target radio's zone is blocked from accepting an incoming clone, a failure message will appear on the Source radio.

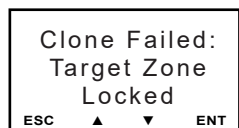
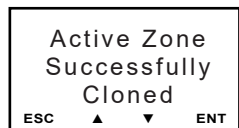
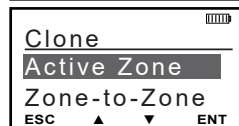
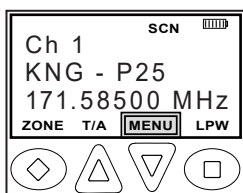
KNG-S to KNG or Legacy Radio Instructions

Connect the KAA0701 Cloning Cable to the side connector of the Source and Target radios and power up both radios.

On the KNG-S Source radio select the zone with the information to be cloned by pressing the Zone button, or selecting “Zone Select” from the menu, then entering the number of the desired zone.

On the Target radio select the Zone or Group to which the information is to be sent.

For Legacy radio models select a target group by pressing the [#] key and entering the number of the desired group.



On the KNG-S Source radio:

1. Press the Menu button.
2. Use the up/down buttons to select “Cloning”.
3. Press the [ENT] button.
4. Select “Active Zone” cloning.
5. Press the Enter button to send the cloning information.

After a successful information transfer, “Cloning Successful” is displayed on the Source radio before reverting to Send Clone mode.

If the cloning process fails or the target radio’s zone is blocked from accepting an incoming clone, a failure message will appear on the Source radio.

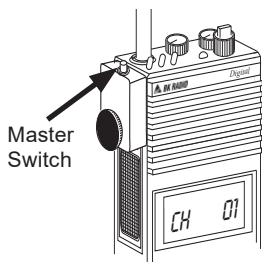
Legacy Radio Cloning

Information programmed in some older BK Radio models can be cloned to KNG models.

Cloning compatible models include: DPHX5102X, GPH5102XP, DPHX-CMD, GPH-CMD, DMH, GMH Plus and most GPH portable models.

NOTE: E-Series portables are not cloning compatible with KNG models.

NOTE: Earlier BK Radio models use the term “Group” instead of “Zone”.



-- -- id

PRG
ch 00

PRG
prog

PRG
clone

PRG
fail

Connect the KAA0701 Cloning Cable to the side connector of the Source and target radios and power up both radios.

On the KNG Target radio, select the zone to receive the incoming information.

On the Legacy Source radio:

1. Select the source group/zone by pressing the [#] key and entering the number of the desired zone.
2. Press and hold the master switch then press and hold the [FCN] key until the display shows “- - - ID.”
3. Enter the password of the selected zone. The display shows “PRG CH 00.”
4. Press the [*] key on the Source radio. The display will flash “PROG” signifying that the radio is ready to download its program to the target.
5. Press the [FCN] key send the cloning information.

While sending information “CLONE” will be displayed on the source radio.

If the cloning process fails or the target radio’s zone is blocked from accepting an incoming clone, A fail message will appear on the Source radio.

To stop the ‘FAIL’ Mode, press [CLR], .

Command Radio Model Target Selection

<small>PRG</small> PROG D/GPH-CMD GROUP 01
--

When using a DPH-CMD or GPH-CMD radio as a cloning source you must designate the target as a G/DPH-CMD not a standard G/DPH. Press and hold the [*] key to select "PRG | D/GPH".

NOTE: The KNG will refuse the clone if PRG|D/GPH-CMD is not selected

Cloneable Information

Cloning Information

A KNG Source Radio sends only information the Target Radio requires. For example, digital settings such as Network Access Codes will not be transferred to analog only models like the GPH.

Channel Capacity Considerations

When a KNG Source zone is programmed with less channels than a Legacy Target radio, channels about the highest programmed Source channel will be set to inactive.

A KNG Target zone will assume the channel structure of the Source radio. Example: Cloning from a DPHX5102X will enable sixteen channels in the targeted KNG. Cloning from a KNG with a five channel zone will enable only five channels in the target radio.

KNG radios do not allow a receive frequency of 0. When a Legacy Source radio channel has no programmed receive frequency, the KNG Target will substitute 136MHz.

Picklist Capable Target Radio Considerations

If picklist selections are assigned in the source radio, and the target radio is capable of picklist selections, the associated picklist reference will be cloned to the target radio. For example, if a channel has a picklist selection of Tone 3 then a picklist reference of 3 will be sent to the target radio and the target radio will use the value stored in the 3 position of the radios picklist. The target radio picklists will not be affected.

Cloned Picklist Values

KNG Source	D & G Standard	D & G CMD	KNG-S/ KNG
Tone selected	Default values	TX Default set to 0, Picklist reference # and RX default value	Default values and Picklist references
No tone selected	Default values	Default values	Default values

KNG-S Source	D & G Standard	D & G CMD	KNG-S/ KNG
Tone selected	Value of selected CG tone/NAC	TX Default set to 0, picklist reference # and RX default value	Default values and Picklist references
No tone selected	Default values	Default values	Default values

D/GPH-CMD Source	KNG-S/KNG
Tone selected	TX Default set to 0, picklist reference # and RX default value
No tone selected	Default values

If the cloning process fails or the target radio's zone is blocked from accepting an incoming clone, a fail message will appear on the Source radio.

Failure of downloading can be due to:

- Zone programmed to block clone
- Improper connection
- Failure to turn on the Target radio
- Legacy Target radio in programming Mode
- Incompatible Target radio
- Cable unplugged

KNG as Source Radio

	Target Radio Type								
	DPHX 5102X	GPH 5102XP	DPHX CMD	GPH CMD	DMH	GMHP	GPH	KNG	KNG-S
Channel and Zone Labels	✓	✓	✓	✓	✓	✓	✓	✓	✓
RX/TX Frequencies	✓	✓	✓	✓	✓	✓	✓	✓	✓
Digital/Analog/Mixed Mode	✓		✓		✓			✓	✓
Code Guards (CG)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Network Access Codes (NAC)	✓		✓		✓			✓	✓
Digital Squelch Operation	✓		✓		✓			✓	✓
Talk Groups	✓		✓		✓			✓	✓
Scan Lists	✓	✓	✓	✓	✓	✓	✓	✓	✓
Analog Bandwidth	✓	✓	✓	✓	✓	✓	✓	✓	✓
High/Low Power	✓	✓	✓	✓			✓	✓	✓
OTAR/Data Channel	✓				✓			✓	✓
DTMF ID								✓	
MDC ID								✓	
Signaling								✓	
Zone Priority Settings	✓	✓			✓	✓	✓	✓	✓
Scan Hold Time	✓	✓			✓	✓	✓		
Tx Timeout Timer	✓	✓			✓	✓	✓		
Picklist References			✓	✓				✓	✓
Squelch Operation	✓		✓		✓			✓	✓
Busy Lockout	✓	✓			✓	✓	✓	✓	✓
User Password	Set to 000000				Set to 000000				

Encryption Parameters

Encryption Parameters	DPHX/DMHX	KNG	KNG-S
Encrypted/Clear/Switchable	Set to Clear	✓	✓
Encryption Key/Key Lock	✓	✓	✓
SLN			"Entire Radio Cloning" only.

KNG as Target Radio

	Source Radio Type						
	DPHX 5102X	GPH 5102XP	DPHX CMD	GPH CMD	GPH	KNG	KNG-S
Channel and Zone Labels	✓	✓	✓	✓	✓	✓	✓
RX/TX Frequencies	✓	✓	✓	✓	✓	✓	✓
Digital/Analog/Mixed Mode	✓		✓			✓	✓
Code Guards (CG)	✓	✓	✓	✓	✓	✓	✓
Network Access Codes (NAC)	✓		✓			✓	✓
Digital Squelch Operation	✓		✓			✓	✓
Talk Groups	✓		✓			✓	✓
Scan Lists	✓	✓	✓	✓	✓	✓	✓
Analog Bandwidth	✓	✓	✓	✓	✓	✓	✓
High/Low Power	✓	✓	✓	✓	✓	✓	✓
OTAR/Data Channel	✓					✓	✓
DTMF ID						✓	
MDC ID						✓	
Zone Priority Settings	✓	✓			✓	✓	✓
Scan Hold Time							
Tx Timeout Timer							
Picklist References			✓	✓		✓	✓
Squelch Operation	✓		✓			✓	✓
Busy Lockout						✓	✓
Signaling						✓	
User Password							

Encryption Parameters

Encryption Parameters	DPHX/DMHX	KNG	KNG-S
Encrypted/Clear/Switchable	Set to Clear	✓	Set to Clear
Encryption Key/Key Lock	✓	✓	✓
SLN			"Entire Radio Cloning" only.

Quick Reference

Any Compatible Model to KNG

1. Put Source and Target radios in the desired Zone.
2. Select “Enter Dest Clone” from the “Cloning” menu on the Target radio.
3. Select “Cloning” from the menu on the Source Radio.
4. Press the ENT button to send.

KNG to Any Compatible Model

1. Put Source and Target radios in the desired Zone.
2. Select “Cloning” from the menu.
3. Press the ENT button to send.

Legacy to KNG or KNG-S

1. Put Source and Target radios in the desired Zone.
2. Put the Source radio in Program Mode.
3. Press [*] button to enter cloning mode.
4. Press [FCN] button to send.

KNG-S to Any Compatible Model

1. Select “Cloning” from the menu.
2. Select “Active Zone” from the cloning menu.
3. Press the ENT button to send.

KNG-S to KNG-S

1. Select “Cloning” from the menu.
2. Select “Active Zone”, “Zone-to-Zone” or “Entire Radio” from the cloning menu.
 - 2(a). If “Zone-to-Zone” is selected, select desired source and target zones.
3. Press the ENT button to send.