REMOTE CONTROL MANUAL

VHF FM REPEATER
IC−FR3000
UHF FM REPEATER
IC−FR4000

1 REMOTE CONTROL FUNCTION

1-1 REMOTE CONTROL SETTING

◊ System control

To enable remote control functions the DTMF settings (RX System Code, TX System Code, DTMF Setting, TX Code CH (Autodial), etc.) must be pre-programmed using CS-FR3000 cloning software. Use CS-FR3000 help screens for description of functions and operation and for programming details.

NOTE: Check the "Control" check-box to enable remote control operation using DTMF signals.

NOTE: Check the "TEL Function" check-box to enable remote control operation using DTMF signals from the telephone line.

1-2 REMOTE CONTROL OPERATION

◇ System control command

NOTE: All commands must be entered within 10 sec. of entering a password. It is possible to enter the password and command continuously.

Format of Command

• Basic command code

The Basic command code consists of a fixed 4-digit command code, preceded by a 1-digit Header Tone, and followed by a 1-digit De-limiter Tone.

Header Tone		Command Code			De-limiter Tone
digits 1	1	2	3	4	1
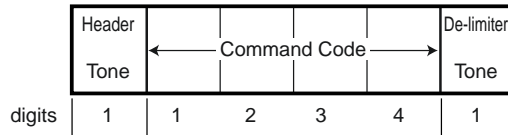
Header Tone

The Header tone is sent ahead of the command and indicates the start of the command. This tone is a fixed 1-digit from 0—9, A—D, ∗(E), #(F) (programmed using CS-FR3000). The default setting is ∗(E).

De-limiter Tone

The De-limiter is sent between commands and at the end of remote control codes. This tone indicates a space between segments of the command as well as the end of the command. This tone is a fixed 1-digit from 0—9, A—D, ∗(E), #(F) (programmed using CS-FR3000). The default setting is #(F).

Command Code

This field indicates the pre-programmed command or action to be executed. These codes are programmed to fixed 4-digit codes in cloning software, and may include characters from 0—9, A—D, ∗(E), #(F).

• Command code with sub code

The Command code with Sub code consists of basic command code and sub code (additionally required information).

Header Tone		Command Code			De-limiter Tone		Sub Code		De-limiter Tone
digits 1	1	2	3	4	1	1	· · · · ·	N	1
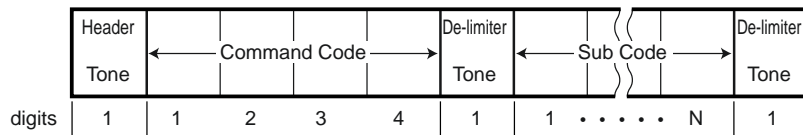
Sub Code

This field is entered following the command code and indicates a memory channel number (for Memory CH Select), an Autodial number (for Telephone Autodial), or a telephone number (for manual Tel dial commands). The Sub Code will be a fixed 2-digit code for Memory CH Select and Telephone Autodial commands or may be up to 24-digits for Tel dial command.

• Command with password and sub code continuously

This is the format required for entering commands for remote control operation.

Header Tone		Password			De-limiter Tone		Command Code			De-limiter Tone		Sub Code		De-limiter Tone
digits 1	1	2	3	4	1	1	2	3	4	1	1	· · · · ·	N	1
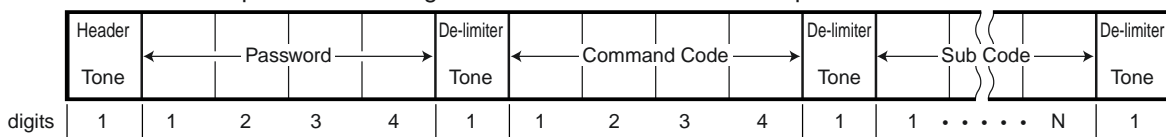
Password

The Password is a type of command code. The FR3000/FR4000 will enter the "System Control standby mode" when it receives this command while in normal operating mode. This is a fixed 4-digit code that is programmed using cloning software and may include digits from 0—9, A—D, ∗(E), #(F).

1-3 COMMAND TABLE

Function	Default Code	During Normal mode		During Phone Patch mode		SUB code
		Transceiver	Phone	Transceiver	Phone	
System Control Exit	0002	✔	✔	✔ [†]	✔	—
Repeat Start	0003	✔	✔	—	—	—
Repeat Stop	0004	✔	✔	—	—	—
TX Start	0005	—	✔ [‡]	— [†]	✔ [‡]	—
TX Stop	0006	—	—	— [†]	✔	—
RF Power (Low)	0007	✔	✔	—	—	—
RF Power (High)	0008	✔	✔	—	—	—
RX Unit OFF	0009	—	✔	—	—	—
RX Unit ON	0010	—	✔	—	—	—
TX/RX Unit OFF	0011	—	✔	—	—	—
TX/RX Unit ON	0012	—	✔	—	—	—
Master Enable	0013	✔	✔	—	—	—
Slave Enable	0014	✔	✔	—	—	—
TEL Dial	0015	✔	—	✔	—	Max. 24 digits of telephone number
TEL Autodial	0016	✔	—	✔	—	2 digits Autodial channel number
Mch Select	0017	✔	✔	—	—	2 digits Memory channel number
CPU All Reset	0018	—	✔	—	—	—

[†]: When the Phone Patch mode is activated from the telephone, the repeater may recognize signals from a transceiver as being a signal from the telephone due to the sidetone function of the phone line. This will depend on the telephone company that provides local service.

[‡]: "TX Start" is prohibited from the telephone line when "Slave Enable" (the backup repeater) is activated.

1-4 COMMAND DESCRIPTIONS

• **System Control Exit**
Turns OFF "System Control standby mode" and returns to normal operating mode. Will also "Hang up" the phone line during Phone Patch operation.

• **Repeat Start**
This command enables repeater operation. This command is not available during Phone Patch operation.

• **Repeat Stop**
This command inhibits repeater operation immediately even while transmitting. May be cancelled by entering "Repeat Start" command or power the repeater OFF/ON. This command is not available during Phone Patch operation.

• **TX Start**
This command initiates repeater transmit mode for Phone Patch operation. This command is available only when the signal is entered via the connected telephone line.

• **TX Stop**
This command stops the repeater from transmitting during Phone Patch operation. This command is available only when the signal is entered via the connected telephone line.

• **RF Power (Low)**
Switches TX power to "Low." This command is not available during Phone Patch operation.

• **RF Power (High)**
Switches TX power to "High." This command is not available for the channel which low power is programmed by cloning or during Phone Patch operation.

• **RX Unit OFF**
Turn OFF the RX unit (front end). This command is not available from a transceiver or during Phone Patch operation.

• **RX Unit ON**
Turn ON the RX unit (front end). This command is not available from a transceiver or during Phone Patch operation.

• **TX/RX Unit OFF**
Turn OFF the TX/RX units. This command is not available from a transceiver or during Phone Patch operation.

• **TX/RX Unit ON**
Turn ON the TX/RX units. This command is not available from a transceiver or during Phone Patch operation.

• **Master Enable**
Activates the master repeater when connected to a back up repeater. This command is not available during Phone Patch operation.

• **Slave Enable**
Activates the back up repeater when connected to a master repeater. This command is not available during Phone Patch operation.

• **TEL Dial**
Activates the phone line and dials the telephone number entered as sub code (max. 24 digits). Command will not activate when the first digit entered is the same as programmed in "Call Prohibition." The repeater transmits "NG ACK" signal. This command is only available from a transceiver.

• **TEL Autodial**
Activates the phone line and dials the pre-programmed autodial channel (2 digits) as sub code. This command is only available from a transceiver.

• **Memory CH Select**
Selects the memory channel with sub code (2 digits Memory channel number). This command is not available during Phone Patch operation.

• **CPU All Reset**
Resets the repeater's CPU. This command is not available from a transceiver or during Phone Patch operation.

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1-5 OPERATION EXAMPLE

◇ System control command

⚠ NOTE:
- All commands must be entered within 10 sec. of entering a password. If the input time period runs out, you must enter the password again. This time period cannot be changed, so it is possible to enter the password and command continuously.

- When operating from the phone line the phone must be able to send DTMF signals.

- When the command is available from the transceiver and phone line, the operations are not different from both them other than the connecting and disconnecting way to the repeater.

> The following examples assume these codes are pre-programmed in the repeater. Other commands are same as default codes listed on command table (p. 3).
> System Password: *0001*,
> Header Tone: ∗, De-limiter Tone: #
> System Password OK ACK: 1111
> System Control Exit ACK: 2020
> OK ACK: 3333, NG ACK: 4040

◇ Repeat Start (*0003* Default)

This command is available from **both the transceiver and phone line**. This explanation shows the step by step operation from the transceiver or operation from the phone line when entering the password and command continuously (one after the other).

[From the Transceiver]
① Enter the programmed password from the transceiver.
   Code: ∗*0001*#
   - Verify the repeater replies "System Password OK ACK (1111)."
   - If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.
② Enter the "Repeat Start" command within 10 sec.
   Code: ∗*0003*#
   - Verify the repeater replies "OK ACK (3333)."
   - If the 10 sec. input standby time runs out, enter the password and command continuously (Code: ∗*0001*#*0003*#).
   - The repeater starts the repeater operation.

[From the Phone line]
① Dial the phone number of the phone line that the repeater is connected to.
② When the connection has been confirmed, enter the following DTMF code.
   Code: ∗*0001*#*0003*#
   - Verify the repeater replies "OK ACK (3333)."
   - If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and Repeat Start code are correct, and try again.
   - The repeater starts the repeater operation.
③ Hang up the phone, the repeater automatically disconnects the phone.

◇ Repeat Stop (*0004* Default)

This command is available from **both the transceiver and phone line**. This explanation shows the operation from the transceiver when entering the password and command continuously or step by step operation from the phone line (one after the other).

[From the Transceiver]
➡ Enter the following DTMF code from the transceiver.
   Code: ∗*0001*#*0004*#
   - Verify the repeater replies "OK ACK (3333)."
   - If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and Repeat Stop code are correct, and try again.
   - The repeater stops the repeater operation.

[From the Phone line]
① Dial the phone number of the phone line that the repeater is connected to.
② When the connection has been confirmed, enter the programmed password.
   Code: ∗*0001*#
   - Verify the repeater replies "System Password OK ACK (1111)."
   - If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.
③ Enter the "Repeat Stop" command within 10 sec.
   Code: ∗*0004*#
   - Verify the repeater replies "OK ACK (3333)."
   - If the 10 sec. input standby time runs out, enter the password and command continuously (Code: ∗*0001*#*0004*#).
   - The repeater stops the repeater operation.
④ Hang up the phone, the repeater automatically disconnects the phone.

OPERATION EXAMPLE (Continue)

◇ RF Power (Low) (*0007* Default)

This command is available from **both the transceiver and phone line**. This explanation shows the step by step operation from the transceiver or operation from the phone line when entering password and command continuously (one after the other).

This command cannot be performed while repeater is transmitting, therefore you must stop the repeater operation before changing RF power.

[From the transceiver]

① Enter the programmed password from the transceiver.

　Code: *0001#
  • Verify the repeater replies "System Password OK ACK (1111)."
  • If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.

② Enter the "Repeat Stop" command within 10 sec.
　Code: *0004#
  • Verify the repeater replies "OK ACK (3333)."
  • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0004#).

③ Enter the "RF Power (Low)" command within 10 sec.
　Code: *0007#
  • Verify the repeater replies "OK ACK (3333)."
  • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0007#).
  • The repeater changes transmit power High to Low.

④ Enter the "Repeat Start" command within 10 sec.
　Code: *0003#
  • Verify the repeater replies "OK ACK (3333)."
  • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0003#).

[From the Phone line]

① Dial the phone number of the phone line that the repeater is connected to.

② When the connection has been confirmed, enter the following DTMF code.
　Code: *0001#0004#
  • Verify the repeater replies "OK ACK (3333)."
  • If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and Repeat Stop code are correct, and try again.

③ Enter the "RF Power (Low)" command within 10 sec.
　Code: *0007#
  • Verify the repeater replies "OK ACK (3333)."
  • If the 10 sec. input standby time runs out, enter the password and command again (Code: *0001#0007#).
  • The repeater changes transmit power High to Low.

④ Enter the "Repeat Start" command within 10 sec.
　Code: *0003#
  • Verify the repeater replies "OK ACK (3333)."
  • If the 10 sec. input standby time runs out, enter the password and command again (Code: *0001#0003#).

⑤ Hang up the phone, the repeater automatically disconnects the phone.

OPERATION EXAMPLE (Continue)

◇ **RF Power (High)** (*0008* Default)

This command is available from **both the transceiver and phone line**. This explanation shows the operation from the transceiver when entering the password and command continuously or step by step operation from the phone line (one after the other).

This command cannot be performed while repeater is transmitting, therefore you must stop the repeater operation before changing RF power.

[From the transceiver]

① Enter the following DTMF code from the transceiver.
　Code: *0001#0004#*
　• Verify the repeater replies "OK ACK (3333)."
　• If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and Repeat Stop code are correct, and try again.

③ Enter the "RF Power (High)" command within 10 sec.
　Code: *0008#*
　• Verify the repeater replies "OK ACK (3333)."
　• If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0008#*).
　• The repeater changes transmit power Low to High.

④ Enter the "Repeat Start" command within 10 sec.
　Code: *0003#*
　• Verify the repeater replies "OK ACK (3333)."
　• If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0003#*).

[From the Phone line]

① Dial the phone number of the phone line that the repeater is connected to.

② When the connection has been confirmed, enter the programmed password.
　Code: *0001#*
　• Verify the repeater replies "System Password OK ACK (1111)."
　• If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.

③ Enter the "Repeat Stop" command within 10 sec.
　Code: *0004#*
　• Verify the repeater replies "OK ACK (3333)."
　• If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0004#*).

④ Enter the "RF Power (High)" command within 10 sec.
　Code: *0008#*
　• Verify the repeater replies "OK ACK (3333)."
　• If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0008#*).
　• The repeater changes transmit power Low to High.

⑤ Enter the "Repeat Start" command within 10 sec.
　Code: *0003#*
　• Verify the repeater replies "OK ACK (3333)."
　• If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0003#*).

⑥ Hang up the phone, the repeater automatically disconnects the phone.

OPERATION EXAMPLE (Continue)

◇ RX Unit OFF (*0009* Default)

This command is available from **the phone line only**. This explanation shows the step by step operation. You can carry out the command operation either step by step, or by entering the password and command continuously.

① Dial the phone number of the phone line that the repeater is connected to.
② When the connection has been confirmed, enter the programmed password.
  Code: *0001#*
  • Verify the repeater replies "System Password OK ACK (1111)."
  • If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.
③ Enter the "RX Unit OFF" command within 10 sec.
  Code: *0009#*
  • Verify the repeater replies "OK ACK (3333)."
  • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0009#*).
  • The repeater turns the RX unit (front end) OFF.
④ Hang up the phone, the repeater automatically disconnects the phone.

◇ RX Unit ON (*0010* Default)

This command is available from **the phone line only**. This explanation shows entering the password and command continuously. You can carry out the command operation either step by step, or by entering the password and command continuously.

① Dial the phone number of the phone line that the repeater is connected to.
② When the connection has been confirmed, enter the following DTMF code.
  Code: *0001#0010#*
  • Verify the repeater replies "OK ACK (3333)."
  • If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and RX Unit ON code are correct, and try again.
  • The repeater turns the RX unit (front end) ON.
③ Hang up the phone, the repeater automatically disconnects the phone.

◇ TX/RX Unit OFF (*0011* Default)

This command is available from **the phone line only**. This explanation shows entering the password and command continuously. You can carry out the command operation either step by step, or by entering the password and command continuously.

① Dial the phone number of the phone line that the repeater is connected to.
② When the connection has been confirmed, enter the following DTMF code.
  Code: *0001#0011#*
  • Verify the repeater replies "OK ACK (3333)."
  • If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and TX/RX Unit OFF code are correct, and try again.
  • The repeater turns the TX/RX units OFF.
③ Hang up the phone, the repeater automatically disconnects the phone.

◇ TX/RX Unit ON (*0012* Default)

This command is available from **the phone line only**. This explanation shows the step by step operation. You can carry out the command operation either step by step, or by entering the password and command continuously.

① Dial the phone number of the phone line that the repeater is connected to.
② When the connection has been confirmed, enter the programmed password.
  Code: *0001#*
  • Verify the repeater replies "System Password OK ACK (1111)."
  • If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.
③ Enter the "TX/RX Unit ON" command within 10 sec.
  Code: *0012#*
  • Verify the repeater replies "OK ACK (3333)."
  • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0012#*).
  • The repeater turns the TX/RX units ON.
④ Hang up the phone, the repeater automatically disconnects the phone.

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OPERATION EXAMPLE (Continue)

◇ Master Enable (*0013* Default)

This command is available from **both the transceiver and phone line**. This explanation shows the step by step operation from the transceiver or operation from the phone line when entering the password and command continuously (one after the other).

[From the Transceiver]

① Enter the programmed password from the transceiver.

Code: *∗0001#*
- Verify the repeater replies "System Password OK ACK (1111)."
- If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.

② Enter the "Master Enable" command within 10 sec.

Code: *∗0013#*
- Verify the repeater replies "OK ACK (3333)."
- If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *∗0001#0013#*).
- The operating repeater switches to the Master repeater.

[From the Phone line]

① Dial the phone number of the phone line that the repeater is connected to.

② When the connection has been confirmed, enter the following DTMF code.

Code: *∗0001#0013#*
- Verify the repeater replies "OK ACK (3333)."
- If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and Master Enable code are correct, and try again.
- The operating repeater switches to the Master repeater.

③ Hang up the phone, the repeater automatically disconnects the phone.

◇ Slave Enable (*0014* Default)

This command is available from **the transceiver and phone line**. This explanation shows the operation from the transceiver when entering the password and command continuously or step by step operation from the phone line (one after the other).

[From the Transceiver]

➥ Enter the following DTMF code from transceiver.

Code: *∗0001#0014#*
- Verify the repeater replies "OK ACK (3333)."
- If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and Slave Enable code are correct, and try again.
- The operating repeater switches to the Slave repeater.

[From the Phone line]

① Dial the phone number of the phone line that the repeater is connected to.

② When the connection has been confirmed, enter the programmed password.

Code: *∗0001#*
- Verify the repeater replies "System Password OK ACK (1111)."
- If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.

③ Enter the "Slave Enable" command within 10 sec.

Code: *∗0014#*
- Verify the repeater replies "OK ACK (3333)."
- If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *∗0001#0014#*).
- The operating repeater switches to the Slave repeater.

④ Hang up the phone, the repeater automatically disconnects the phone.

OPERATION EXAMPLE (Continue)

◇ Mch Select (*0017* Default)

This command is available from **both the transceiv-er and phone line**. This explanation shows the step by step operation from the transceiver or operation from the phone line when entering the password and command continuously (one after the other).

This command cannot be performed while repeater is transmitting, therefore you must stop the repeater operation before selecting a different memory chan-nel.

[From the transceiver]

① Enter the programmed password from the trans-ceiver.
   Code: *0001#
   • Verify the repeater replies "System Password OK ACK (1111)."
   • If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.

② Enter the "Repeat Stop" command within 10 sec.
   Code: *0004#
   • Verify the repeater replies "OK ACK (3333)."
   • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0004#).

③ Enter the "Mch Select" command followed by sub code within 10 sec.
   Code: *0017#07#
           (when your intended channel is *07*)
   • Verify the repeater replies "OK ACK (3333)."
   • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0017#07#).
   • The repeater changes to the memory channel 7.

④ Enter the "Repeat Start" command within 10 sec.
   Code: *0003#
   • Verify the repeater replies "OK ACK (3333)."
   • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0003#).

[From the Phone line]

① Dial the phone number of the phone line that the repeater is connected to.

② When the connection has been confirmed, enter the following DTMF code.
   Code: *0001#0004#
   • Verify the repeater replies "OK ACK (3333)."
   • If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and Repeat Stop code are correct, and try again.

③ Enter the "Mch Select" command followed by sub code within 10 sec.
   Code: *0017#07#
           (when your intended channel is *07*)
   • Verify the repeater replies "OK ACK (3333)."
   • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0017#07#).
   • The repeater changes to the memory channel 7.

④ Enter the "Repeat Start" command within 10 sec.
   Code: *0003#
   • Verify the repeater replies "OK ACK (3333)."
   • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0003#).

⑤ Hang up the phone, the repeater automatically disconnects the phone.

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OPERATION EXAMPLE (Continue)

◇ **CPU All Reset** (*0018* Default)

This command is available from **the phone line only**. This explanation shows entering the password and command continuously.

This command cannot be performed while repeater is transmitting, therefore you must stop the repeater operation before performing CPU All Reset.

① Dial the phone number of the phone line that the repeater is connected to.

② When the connection has been confirmed, enter the following DTMF code.
   Code: *0001#0004#*
   • Verify the repeater replies "OK ACK (3333)."
   • If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and Repeat Stop code are correct, and try again.

③ Enter the "CPU All Reset" command within 10 sec.
   Code: *0018#*
   • Verify the repeater replies "OK ACK (3333)."
   • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0018#*).
   • The repeater performs CPU All Reset.

④ Enter the "Repeat Start" command within 10 sec.
   Code: *0003#*
   • Verify the repeater replies "OK ACK (3333)."
   • If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0003#*).

⑤ Hang up the phone, the repeater automatically disconnects the phone.

1-6 OPERATION EXAMPLE FOR PHONE PATCH

◇ Description

Phone Patch function allows communication to a transceiver from a telephone line, or connection to a telephone line from a transceiver. During the Phone Patch operation, the voice communication is simplex. (The mute control is activated from the transceiver's continuous tone SQL.)

■ Operation from the transceiver

One of two methods (Dial and Auto-dial) of telephone access is selectable from the transceiver.

Dial: Direct dialing from the keypad of a transceiver.

Auto-dial: Using the pre-programmed phone No. (up to 20 channels are stored) in the repeater.

◇ TEL Dial (*0015* Default)

① Enter the programmed password from transceiver.

Code: *0001#

- Verify the repeater replies "System Password OK ACK (1111)."
- If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.

② Enter the "TEL Dial" command within 10 sec.

Code: *0015#

- Verify the repeater replies "OK ACK (3333)."
- If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0015#).

③ Enter the telephone number (if the number is *060-3355-2244*) as sub code within 10 sec.

Code: *06033552244#

- Verify the repeater replies "OK ACK (3333)."
- If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0015#06033552244#).
- The repeater starts calling the number.

④ When the connection has been confirmed, talk to the phone by simplex voice communication.

⑤ After conversation is finished enter the password followed by the "System Control Exit" command to terminate Phone Patch operation.

Code: *0001#0002#

- Verify the repeater replies "System Control Exit ACK (2020)," then repeater hangs on the phone.

◇ TEL Autodial (*0016* Default)

Autodial number: *12* (Channel 12)

① Enter the following DTMF codes.

Code: *0001#0016#12#

- Verify the repeater replies "OK ACK (3333)."
- If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and command code are correct, and try again.
- The repeater starts calling the autodial channel 12.

② When the connection has been confirmed, talk to the phone by simplex voice communication.

③ After conversation is finished enter the password followed by the "System Control Exit" command to terminate Phone Patch operation.

Code: *0001#0002#

- Verify the repeater replies "System Control Exit ACK (2020)," then repeater hangs on the phone.

■ Operation from the phone line

◇ TX Start (*0005* Default)

Step by step operation from the phone line.

① Dial the phone number of the phone line that the repeater is connected to.

② When the connection has been confirmed, enter the programmed password.

Code: *0001#

- Verify the repeater replies "System Password OK ACK (1111)."
- If the repeater replies "NG ACK (4040)," make sure the password, header tone and de-limiter tone are correct, and try again.

③ Enter the "TX Start" command within 10 sec.

Code: *0005#

- Verify the repeater replies "OK ACK (3333)."
- If the 10 sec. input standby time runs out, enter the password and command continuously (Code: *0001#0005#).
- The repeater starts the downlink transmission for Phone Patch operation.

④ After conversation is finished, hang up the phone, the repeater automatically disconnects the phone and stops the downlink transmission.

◇ TX Stop (*0006* Default)

During Phone Patch operation this command stops repeater from transmitting, for changing repeater settings.

① Enter the following DTMF code (password and command code).

Code: *0001#0006#

- Verify the repeater replies "OK ACK (3333)."
- If the repeater replies "NG ACK (4040)," make sure the password, header tone, de-limiter tone and TX stop code are correct, and try again.

② You may continue remote control operation from the phone line to make other settings in the repeater, or hang up the phone if there is nothing else to change.