INSTRUCTION MANUAL

KENWOOD

VHF FM TRANSCEIVER/ UHF FM TRANSCEIVER

TK-785/ TK-885

THANK YOU

We are grateful you chose **KENWOOD** for your personal mobile applications. We believe this easy-to-use transceiver will provide dependable communications to keep personnel operating at peak efficiency.

KENWOOD transceivers incorporate the latest in advanced technology. As a result, we feel strongly that you will be pleased with the quality and features of this product.

MODELS COVERED BY THIS MANUAL

- **TK-785:** VHF FM Transceiver
- **TK-885:** UHF FM Transceiver

PRECAUTIONS

Please observe the following precautions to prevent fire, personal injury, and transceiver damage.

- Do not attempt to configure the transceiver while driving; it is too dangerous.
- Do not modify the transceiver for any reason.
- Do not expose the transceiver to long periods of direct sunlight, nor place it near heating appliances.
- Do not place the transceiver in excessively dusty, humid, or wet areas, nor on unstable surfaces.
- If an abnormal odour or smoke is detected coming from the transceiver, turn OFF the power immediately. Contact your **KENWOOD** dealer.

NOTICES TO THE USER

◆ *GOVERNMENT LAW PROHIBITS THE OPERATION OF UNLICENSED RADIO TRANSMITTERS WITHIN THE TERRITORIES UNDER GOVERNMENT CONTROL.*
◆ *ILLEGAL OPERATION IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.*
◆ *REFER SERVICE TO QUALIFIED TECHNICIANS ONLY.*

SAFETY: It is important that the operator is aware of, and understands, hazards common to the operation of any transceiver.

WARNING!

◆ *EXPLOSIVE ATMOSPHERES (GASES, DUST, FUMES, etc.)*

Turn OFF your transceiver while taking on fuel or while parked in a gasoline service station. Do not carry spare fuel containers in the trunk of your vehicle if your transceiver is mounted in the trunk area.

◆ *INJURY FROM RADIO FREQUENCY TRANSMISSIONS*

Do not operate your transceiver when somebody is either touching the antenna or standing within two to three feet of it, to avoid the possibility of radio frequency burns or related physical injury.

◆ *DYNAMITE BLASTING CAPS*

Operating the transceiver within 500 feet of dynamite blasting caps may cause them to explode. Turn OFF your transceiver when in an area where blasting is in progress, or where "TURN OFF TWO-WAY RADIO" signs have been posted. If you are transporting blasting caps in your vehicle, make sure they are carried in a closed metal box with a padded interior. Do not transmit while the caps are being placed into or removed from the container.

CONTENTS

UNPACKING AND CHECKING EQUIPMENT

Note: *The following unpacking instructions are for use by your* **KENWOOD** *dealer, an authorized* **KENWOOD** *service facility, or the factory.*

Carefully unpack the transceiver. We recommend that you identify the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

Supplied Accessories

Item		Part Number	Quantity
Microphone and microphone cable	TK-785 E only	X60-3370-XX	1
	TK-885 K, K3 only	T91-0597-XX	
Microphone hanger with self-tapping screws (supplied only with kits containing a microphone)		J19-1584-XX	1
Mounting bracket		J29-0627-XX	1
Power cable assembly		E30-3339-XX	1
• 10 A Fuse (2 pieces)		F51-0061-XX	
Speaker jack cap		B09-0235-XX	1
Screw set: • Self-tapping screw (4 pieces) • Hex-headed screw with washer (4 pieces) • Spring washer (4 pieces) • Flat washer (4 pieces)		N99-0395-XX	1
Instruction manual		B62-1262-XX	1
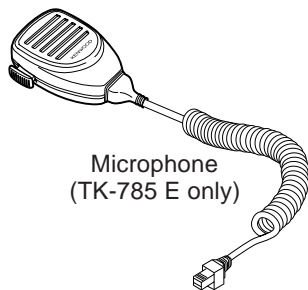
Microphone
(TK-785 E only)
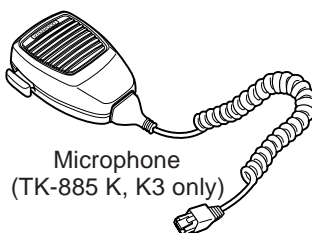
Microphone
(TK-885 K, K3 only)
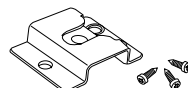
Microphone
hanger

Mounting bracket

Power cable assembly

Speaker jack cap

Screw set

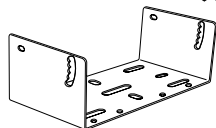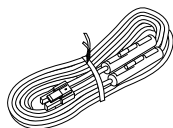# PREPARATION

⚠ WARNING

VARIOUS ELECTRONIC EQUIPMENT IN YOUR VEHICLE MAY MALFUNCTION IF THEY ARE NOT PROPERLY PROTECTED FROM THE RADIO FREQUENCY ENERGY WHICH IS PRESENT WHILE TRANSMITTING. ELECTRONIC FUEL INJECTION, ANTI-SKID BRAKING, AND CRUISE CONTROL SYSTEMS ARE TYPICAL EXAMPLES OF EQUIPMENT THAT MAY MALFUNCTION. IF YOUR VEHICLE CONTAINS SUCH EQUIPMENT, CONSULT THE DEALER FOR THE MAKE OF VEHICLE AND ENLIST HIS AID IN DETERMINING IF THEY WILL PERFORM NORMALLY WHILE TRANSMITTING.

Note: *The following preparation instructions are for use by your **KENWOOD** dealer, an authorized **KENWOOD** service facility, or the factory.*

Tools Required

Note: *Before installing the transceiver, always check how far the mounting screws will extend below the mounting surface. When drilling mounting holes, be careful not to damage vehicle wiring or parts.*

The following tools are required for installing the transceiver:

• 6 mm (1/4 inch) or larger electric drill.

• 4.2 mm (5/32 inch) drill bit for the 5 x 16 mm self-tapping screws, and 3.2 mm (1/8 inch) drill bit for the 4 x 16 mm self-tapping screws.

• Circle cutters.

Power Cable Connection

⚠ CAUTION

THE TRANSCEIVER OPERATES IN 12 V NEGATIVE GROUND SYSTEMS ONLY! CHECK THE BATTERY POLARITY AND VOLTAGE OF THE VEHICLE BEFORE INSTALLING THE TRANSCEIVER.

1 Check for an existing hole, conveniently located in the firewall, where the power cable can be passed through.

  • If no hole exists, use a circle cutter to drill the firewall, then install a rubber grommet.

2 Run the two power cable leads through the firewall and into the engine compartment, from the passenger compartment.

3 Connect the red lead to the positive (+) battery terminal and the black lead to the negative (–) battery terminal.

  • Locate the fuse as close to the battery as possible.

4 Coil and secure the surplus cable with a retaining band.

  • Be sure to leave enough slack in the cables so the transceiver can be removed for servicing while keeping the power applied.

Installing the Transceiver

1 Mark the position of the holes in the dash by using the mounting bracket as a template. Drill the holes, then attach the mounting bracket using the supplied 5 x 16 mm screws.

- Be sure to mount the transceiver in a location where the controls will be within easy reach of the user and where there is sufficient space at the rear of the transceiver for cable connections.

2 Connect the antenna and the supplied power cable to the transceiver.

3 Slide the transceiver into the mounting bracket and secure it using the supplied hex-headed screws.

4 Mount the microphone hanger, using the supplied 4 x 16 mm screws, in a location where it will be within easy reach of the user.

- The microphone should be mounted in a place where it will not interfere with the safe operation of the vehicle.

5 Connect the microphone cable to the jack on the front panel of the transceiver. Place the microphone on the hanger.
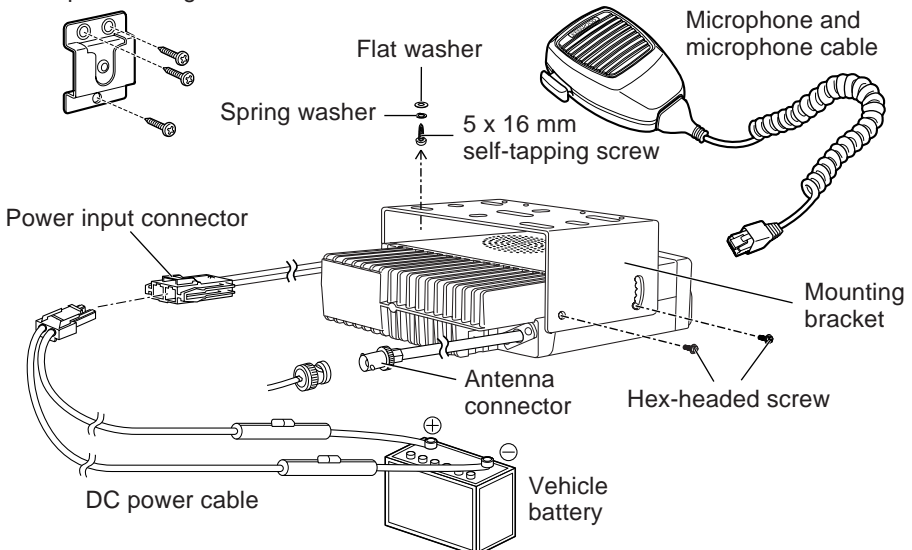
Note: *Features listed in this section are available for both Trunking and Conventional modes. Mode specific features can be found in their corresponding sections in this manual.*

Front Panel
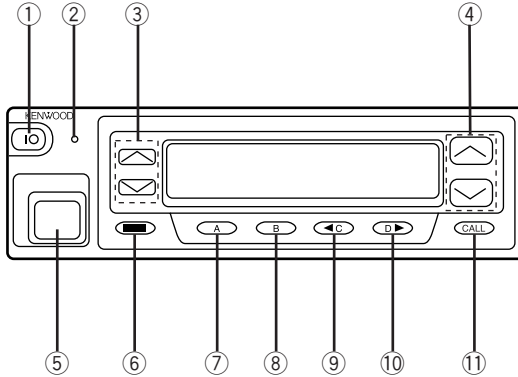
① **IO (Power) switch**
Press to switch the transceiver ON (or OFF).

② **Transmit/ Receive indicator**

③ ⌃ / ⌄ **(Volume) keys**
Press these keys to increase and decrease the volume.

④ ⌃ / ⌄ **(Control) keys**

⑤ **Microphone jack**
Insert the microphone plug into this connector.

⑥ ▬ **key**

⑦ **A key**

⑧ **B key**

⑨ ◀C **key**

⑩ **D▶ key**

⑪ **CALL key**

4

Rear Panel

Power input connector

External speaker jack

Antenna connector
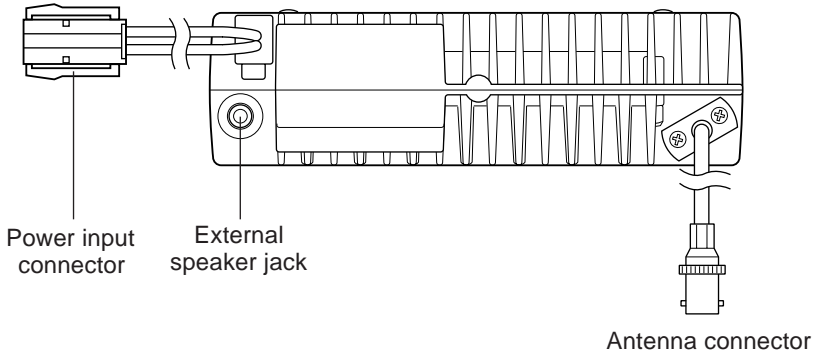
Switching Power ON/ OFF

Press the **IO** switch to switch the transceiver ON. The power on text or unit number appears for 2 seconds.

Press the **IO** switch again to switch the transceiver OFF.

Adjusting the Volume

Press the ∧ / ∨ (volume) keys to adjust the volume. ∧ increases the volume and ∨ decreases it.

Key Functions

Note: *The numbers correspond to the diagram on page 4.*

② **Transmit indicator**
Lights red while transmitting.

④ ∧ / ∨ **(Control) keys**
Press these keys to select your desired call address (voice calls) or status (status calls).

⑥ ▬▬ **key**
Press to end the current call.

⑦ **A key** (default setting: **Status/ Stack**)
Press to activate its auxiliary function {below}.

⑧ **B key** (default setting: **Redial**)
Press to activate its auxiliary function {below}.

⑨ ◀**C key** (default setting: **None**)
Press to activate its auxiliary function {below}. Also press to scroll left while viewing stack entries.

⑩ **D▶ key** (default setting: **None**)
Press to activate its auxiliary function {below}. Also press to scroll right while viewing stack entries.

⑪ **CALL key**
Press to call the displayed call address.

Programmable Auxiliary Functions

The **A**, **B**, ◀**C**, and **D▶** keys, as well as the external foot switch, can be programmed with the auxiliary functions listed below. Contact your dealer for details on these functions.

Note: *Some of these functions cannot be programmed onto certain keys. Ask your dealer for details.*

- AUX A
- AUX B
- Conventional
- Dialing
- Emergency
- Home
- Horn Alert
- Key Lock
- Network Select
- None
- Public Address
- Redial
- Scrambler
- Status/ Stack

Display
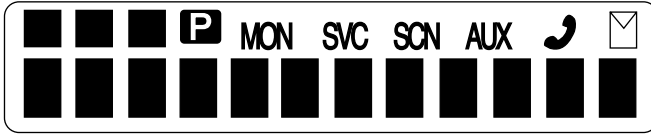
■ ■ ■ displays the strength of received signals, the output power (high or low), status numbers, and received call types.

SVC appears when a control channel is found. It flashes while the transceiver is searching for a control channel.

✆ flashes when you activate call diversion.

✉ appears while there is data in the stack. It flashes when there is new data in the stack.

■■■■■■■■■■ displays call addresses, the call duration timer, data messages, and the current operating status of the transceiver.

Searching for a Control Channel

After switching the power ON, press any key while the power on text or unit number is displayed to begin searching for a control channel. Or, wait for 2 seconds to allow the transceiver to start searching for a control channel automatically.

• The SVC indicator flashes and an arrow scrolls across the display while the transceiver is searching for a control channel.

Voice Calls

■ Making a Voice Call

1 Select a call address using one of the following four methods:

i) *Select a call address from memory:* Select your desired call address using the ∧ / ∨ (control) keys if a call address has been stored in the transceiver memory.

ii) *Use a pre-programmed key:* Press key **A**, **B**, **◄C**, or **D►** to select a call address if they have been pre-programmed with call addresses.

iii) *Select a call address from the stack:* Use a received voice call from the stack as a call address (refer to "Viewing the Stack", on page 10).

iv) *Enter a call address using the microphone keypad:* Enter your desired call address using the microphone keypad (keys **0** ~ **9**, **✳**, and **#**). Refer to the appendix {page 15} for the available dial strings and control codes.

2 Initiate the call, depending on how you selected the call address.

i, **ii**, and **iii** (of step 1):

When selecting a call address from memory or the stack, press the **CALL** key (or the microphone **PTT** switch if "PTT to Initiate Call" has been programmed) to initiate the call.

iv (of step 1):

When using MPT1343 dialing, press the microphone **#** key to initiate the call.

• "Calling" appears on the display.

3 When the call is connected, a timer appears on the display.

• The timer can be set up to either count up (increasing number) or count down (decreasing number).

4 Press the microphone **PTT** switch to transmit; release it to receive.

• The LED lights red while transmitting.

• The 3-digit sub-display shows your transmit power. A single triangle (▲) represents low power while dual triangles (▲▲) represents high power.

5 Press the ■■ key to end the call. If the call time expires before you press the ■■ key, the call will be automatically terminated.

• "END" momentarily appears on the display before returning to the call address of the call you just made.

■ **Receiving a Voice Call**

1 When a call is received, the caller's unit number appears on the main display and "CAL" appears on the 3-digit sub-display.

- If you have the caller's address set up in your transceiver, the call address is displayed instead of the unit number.
- Group conference calls are represented by "GRP" rather than "CAL". Group broadcast calls are represented by "BCC".
- Special calls are denoted as follows:

  I-Fleet: A call from a different fleet (Inter Fleet).

  I-Prefix: A call from a different prefix (Inter Prefix).

  PABX: A call from a PABX telephone system.

  PSTN: A call from a PSTN telephone system.

2 Press the microphone **PTT** switch to respond to the call.

- The remaining call time appears on the display.

3 When the call ends, the display returns to the call address which was previously displayed. However, if you end the call by pressing the ▮▮ key, "END" momentarily appears on the display before returning to the call address.

Status Calls

■ **Making a Status Call**

1 Select a call address using one of the following two methods:

  i) *Select a call address from memory:* Select your desired call address using the ⌃ / ⌄ (control) keys if a call address has been stored in the transceiver memory.

  ii) *Enter a call address using the microphone keypad:* Enter your desired call address using the microphone keypad (keys **0** ~ **9**, ✳, and **#**). Refer to the appendix {page 15} for the available dial strings and control codes.

2 Press the **Status/ Stack** key (default is the **A** key), then press the ⌃ / ⌄ (control) keys to select your desired status.

- The status number appears on the 3-digit sub-display.

3 Press the **CALL** key (or microphone **PTT** switch if "PTT to Initiate Call" is programmed in the transceiver) to send the status.

- "Calling" appears on the display.

4 When the status has been received by the called party, "Complete" momentarily appears on the display before returning to the call address of the call you just made.

■ Receiving a Status/Short Data Message Call

    1 When a call is received, the ⊠ indicator appears on the display and flashes.

        • The ⊠ indicator remains on the display when there is data in the stack.

    2 To view the status or message, refer to "Viewing the Stack", below.

Call Displays

The following messages may appear on the display under certain circumstances:

Holding: The transceiver is confirming the call made by the base station.

Engaged: The called party is in another call.

Queued: All communication channels are currently in use; your status will be sent when a channel becomes free.

Fail: The control station received an invallid call.

NU: You entered an invallid call address.

No Reply: The called party has been called, but they did not respond to the call.

Call Back: The called party has set their transceiver to queue all incoming calls.

Sys Busy: The system is currently busy.

Viewing the Stack

1 Press the **Status/ Stack** key (default is the **A** key) twice to enter the stack.

    • If there is no data in the stack, "------------" appears on the main display and "-00" appears on the 3-digit sub-display.

2 Press the ⌃ / ⌄ (control) keys to view the stack entries.

    • "NEW" represents a new entry, "S" represents a status stack entry, "V" represents a voice stack entry, and "D" represents a data stack entry.

3 Press the ◀**C** and **D**▶ keys to scroll through the selected entry, to view the entire entry.

4 To erase an entry, select the desired entry and press the ■ key.

Call Diversions

■ Diverting Your Own Calls

1 Enter control code " ✳41" with the microphone keypad.

2 Press the microphone ✳ key, then enter the unit number where you want to divert the calls.

3 Press the microphone **#** key or the **CALL** key.

  • "Calling" appears on the display. While your request is being processed, "Holding" appears on the display. When the call divert is set, "Complete" momentarily appears on the display before returning to the previously selected call address. The 📞 indicator appears on the display and flashes.

4 To end the call diversion, enter control code "#41" with the microphone keypad, then press the microphone **#** key or the **CALL** key.

  • "Calling" appears on the display. While your request is being processed, "Holding" appears on the display. When the call divert is cleared, "Complete" momentarily appears on the display before returning to the previously selected call address.

■ Diverting Third Party Calls

1 Enter control code " ✳44" with the microphone keypad.

2 Press the microphone ✳ key, then enter the unit number of the transceiver which you want to divert the calls.

3 Press the microphone **#** key or the **CALL** key.

  • "Calling" appears on the display. While your request is being processed, "Holding" appears on the display. When the call divert is set, "Complete" momentarily appears on the display before returning to the previously selected call address.

4 To end the call diversion, enter control code "#44" with the microphone keypad, press the microphone ✳ key, enter the unit number of the transceiver whose calls are being diverted, then press the microphone **#** key or the **CALL** key.

  • "Calling" appears on the display. While your request is being processed, "Holding" appears on the display. When the call divert is cleared, "Complete" momentarily appears on the display before returning to the previously selected call address.

Key Functions

Note: *The numbers correspond to the diagram on page 4.*

② **Receive indicator**
Lights green while receiving a signal.

④ ⋀ / ⋁ **(Control) keys**
Press these keys to select your desired channel.

⑥ ▬▬ **key**
Press to return to Trunking mode.

⑦ **A key**
Press to turn Scan ON (or OFF).

⑧ **B key**
Press to add/remove channels to/from Scan.

⑪ **CALL key**
Press to turn the squelch OFF in order to monitor your selected channel.

Display
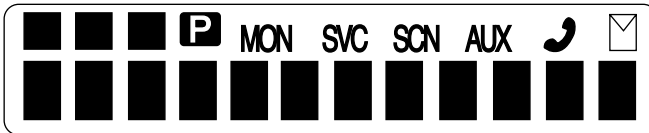
■ ■ ■ displays the strength of received signals.

MON appears while you are monitoring a channel by pressing the **CALL** key.

SCN appears while you are scanning.

■■■■■■■■■■■ displays channel numbers and the current operating status of the transceiver.

Entering Conventional Mode

Depending on how your transceiver is programmed, you can enter Conventional mode in one of two ways:

Manual: Press the key programmed as **Conventional** to change the operating mode.

Auto: The transceiver automatically changes to Conventional mode when you are outside the network area.

Returning to Trunking Mode

Depending on how your transceiver is programmed, you can return to Trunking mode in one of three ways:

Manual: Press the ■ key to change the operating mode.

Auto: While in Conventional mode, the transceiver periodically searches for the network. When it finds the network, the transceiver automatically changes to Trunking mode. An alert tone sounds to notify you when the operating mode changes.

Alert: While in Conventional mode, the transceiver periodically searches for the network. When it finds the network, an alert tone sounds. Press the ■ key to change the operating mode.

Conventional Mode Operation

1 Press the ∧ / ∨ (control) keys to select your desired channel.

2 Press the **CALL** key to turn squelch OFF in order to monitor any activity on the channel.

   • The **MON** indicator appears on the display.
   • The LED lights green and you will hear background noise.

3 Press the microphone **PTT** switch to transmit; release it to receive.

Scanning

Press the **A** key to turn Scan ON (or OFF).

While scanning, the **SCN** indicator and "-SCAN-" appear on the display.

When a call is received, scanning stops and the channel number appears. Press the microphone **PTT** switch and speak into the microphone to respond to the call. The transceiver will continue scanning after an adjustable time delay if the **PTT** switch is released and no further signal is received.

Only channels added to the scanning sequence will be scanned. Channels which are added to the scanning sequence all have an add indicator (▼) in the left-most segment of the main display.

To add a channel to the scanning sequence, select the desired channel, then press the **B** key.

• ▼ appears on the display.

To remove a channel from the scanning sequence, select the desired channel, then press the **B** key.

• ▼ no longer appears on the display.

2 Digit Dialing

Function	**Dial String**
Individual number	20 ~ 89
Group number	90 ~ 99

3 Digit Dialing

Function	**Dial String**
Individual number	200 ~ 899
Group number	900 ~ 998
Emergency operator	112, 999
Enter the open channels	101 ~ 110
Network operator services	100, 111, 121, 131, 141, 151, 161, 171, 181, 191

4 Digit Dialing

Function	**Dial String**
PABX call	1000 ~ 8999

5 Digit Dialing

Function	**Dial String**
PABX call (Single address word calls)	First string (3 ~ 6) + Second string (1000 ~ 8999)
PABX call (Extended addressing protocol)	First string (0, 7, or 8) + Second string (0000 ~ 9999)

6 Digit Dialing

Function	**Dial String**
Common prefix Inter-fleet individual call	Fleet # (2001 ~ 6050) + Individual # (20 ~ 89)
Common prefix Inter-fleet group call	Fleet # (2001 ~ 6050) + Group # (90 ~ 99)
PABX call (extended addressing protocol)	First string (0, 7, or 8) + Second string (00000 ~ 99999)

7 Digit Dialing

Function	Dial String
Common prefix Inter-fleet individual call	Fleet # (2001 ~ 6050) + Individual # (200 ~ 899)
Common prefix Inter-fleet group call	Fleet # (2001 ~ 6050) + Group # (900 ~ 998)
PABX call (extended addressing protocol)	First string (0, 7, or 8) + Second string (000000 ~ 999999)

8 Digit Dialing

Function	Dial String
PSTN call	First string (0) + Second string (0000000 ~ 9999999)
PABX call (extended addressing protocol)	First string (7 or 8) + Second string (0000000 ~ 9999999)

9 Digit Dialing

Function	Dial String
Inter-prefix Inter-fleet individual call	Prefix # (200 ~ 327) + Fleet # (2001 ~ 6050) + Individual # (20 ~ 89)
Inter-prefix Inter-fleet group call	Prefix # (200 ~ 327) + Fleet # (2001 ~ 6050) + Group # (90 ~ 99)
PSTN call	First string (0) + Second string (00000000 ~ 99999999)
PABX call (extended addressing protocol)	First string (7 or 8) + Second string (00000000 ~ 99999999)

10 Digit Dialing

Function	Dial String
Inter-prefix Inter-fleet individual call	Prefix # (200 ~ 327) + Fleet # (2001 ~ 6050) + Individual # (200 ~ 899)
Inter-prefix Inter-fleet group call	Prefix # (200 ~ 327) + Fleet # (2001 ~ 6050) + Group # (900 ~ 998)
PSTN call	First string (0) + Second string (000000000 ~ 999999999)

11 Digit Dialing

Function	Dial String
PSTN call	First string (0) + Second string (0000000000 ~ 9999999999)

Control Codes

Function	Dial String
Call setup abandoned, call complete	*#
Send status for dispatcher (status 0)	*0
Send status for dispatcher (status nn)	*0nn
Conference call	*1
Broadcast call	*11
Priority voice system-wide-call	*1981#
Emergency voice system-wide-call	*1982#
Priority np data system-wide-call	*1983#
Emergency np data system-wide-call	*1984#
Short data system-wide-call	*1985#
Standard voice system-wide-call	*1987#
Divert own calls	*41, *411, *412
Divert third party calls	*44, *441, *442
Queue incoming calls	*48#
Don't disturb (both, voice, data)	*49#, *491#, *492#
Priority call	*8
Emergency call	*9
End dialed string	#
Send status for dispatcher (status 31)	#0
Cancel divert own calls	#41, #411, #412
Cancel divert third party calls	#44, #441, #442
General cancellation by recipient	#45, #451, #452
Cancel queue incoming calls	#48#
Cancel don't disturb (both, voice, data)	#49#, #491#, #492#