ICOM

MDC 1200 Compatible

OPERATING GUIDE

VHF TRANSCEIVERS

IC-F1000D

UHF TRANSCEIVERS

IC-F2000D

The photo shows the UHF transceivers.

Icom Inc.

IMPORTANT

We appreciate you choosing Icom for your communication needs.

The MDC 1200 signaling system is built into your IC-F1000D/ IC-F2000D series transceiver.

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS OPERATING GUIDE — This operating guide contains important operating instructions for:

- **IC-F1000D**
  VHF TRANSCEIVERS
- **IC-F2000D**
  UHF TRANSCEIVERS

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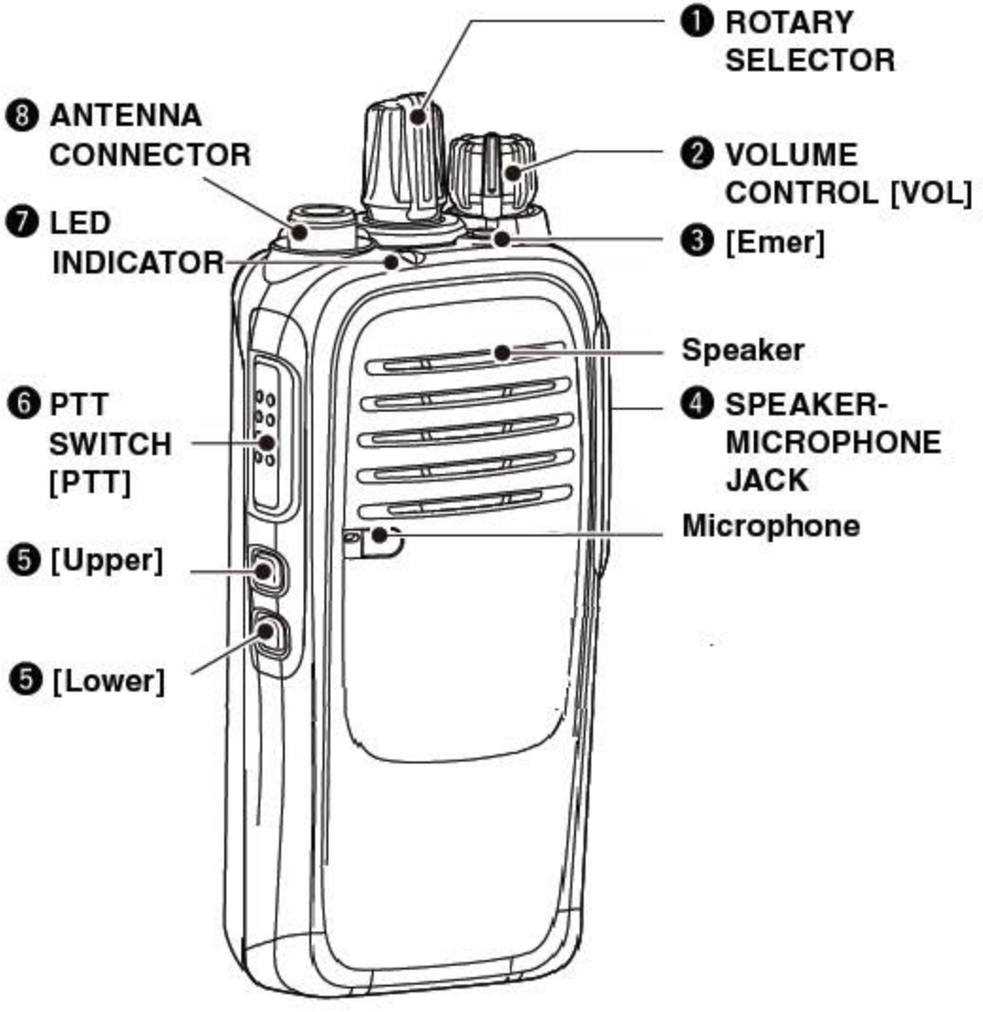
1 PANEL DESCRIPTION

■ Front, top and side panels



❶ ROTARY SELECTOR
➥ Rotate to select the preset memory channels.

❷ VOLUME CONTROL [VOL]
➥ Rotate to turn the power ON or OFF and to adjust the audio level.

❸ DEALER-ASSIGNABLE KEY [Emer]
➥ A desired function can be programmed by your dealer.

❹ SPEAKER-MICROPHONE JACK

➥ Connect optional equipment.

NOTE: After turning OFF the transceiver, connect or disconnect the optional equipment.

Jack cover

NOTE: Attach the jack cover when optional equipment is not used.

❺ DEALER-ASSIGNABLE KEYS

[Upper] , [Lower]

➥ Desired functions can be independently programmed by your dealer.

❻ PTT SWITCH [PTT]

➥ Hold down to transmit, release to receive.

❼ LED INDICATOR

➥ Lights red while transmitting.
➥ Lights green while receiving a signal, or when the squelch is open.
➥ Lights or blinks orange when the matched 2-Tone or 5-Tone is received, depending on the presetting.
➥ You should charge the battery when the indicator slowly blinks.
➥ You must charge the battery when the indicator blinks fast.

❽ ANTENNA CONNECTOR

➥ Connects the supplied antenna.

■ LED indicator

The LED indicator indicates the status of various parameters of the transceiver as follows:
(Reference: R=Red, G=Green, O=Orange)

• Cloning (reading or writing data)

• Cloning Error (if cloning fails)

• Inh, Blank CH, Unlocked (when you cannot use the channel)

• TX Low Battery 2 (while transmitting)

• TX Low Battery 1 (while transmitting)

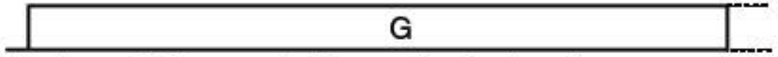
• Transmitting

• Call LED=ON (when receiving a matched 2-Tone or 5-Tone)

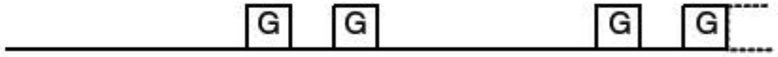
• Call LED=Blink (when receiving a matched 2-Tone or 5-Tone)

• Scanning

• Receiving



• Low Battery 2 (You must charge the battery.)



• Low Battery 1 (You should charge the battery.)

• When turning ON the power

• Calling

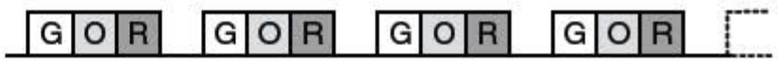
• Audible

• Lockout, TX Inh, TOT (when transmit is inhibited)

• Successful

• Failed, Error

• Emergency, Siren



■ Programmable function keys

The following functions can be assigned to **[Emer], [Upper], and [Lower].**

Consult your Icom dealer or system operator for details concerning your transceiver's programming.

SCAN START/STOP

➥ Push to start and cancel a scan.
- When a scan is started with the Power ON Scan or Automatic scan function, push this key to cancel it. The cancelled scan resumes after a set time period.

PRIORITY A CHANNEL, PRIORITY B CHANNEL

➥ Push to select the Priority A or Priority B channel.

PRIORITY A CHANNEL (REWRITE),
PRIORITY B CHANNEL (REWRITE)

➥ Push to select the Priority A or Priority B channel.
➥ Hold down **[Prio A (Rewrite)]** or **[Prio B (Rewrite)]** to assign the operating channel to Priority A or Priority B channel, respectively.

MEMORY CHANNELS 1, 2, 3, 4

➥ Push to directly select memory channel 1, 2, 3 or 4, if programmed.

MONI // only for the LMR mode //

➥ Hold down to cancel the CTCSS (DTCS) or 2-Tone mute. The transceiver enters "Audible" mode.
➥ Push to turn OFF the function.

MONI (Audi) // only for the PMR mode //

➥ Hold down to cancel the CTCSS (DTCS) or 5-Tone mute. The transceiver enters "Audible" mode.
➥ Push or hold down to activate one or two functions if programmed.

LOCK

➥ Hold down this key to lock all programmable keys except the followings:
[Moni], **[Lock]**, **[Emer]**, **[Surveillance]**, **[Siren]**, **[Lone Worker]**, and **[Shift]**.

LONE WORKER

➥ Hold down to turn ON the Lone Worker Function.
➥ Push to turn OFF the Function.
• If no operation occurs for a set time period, the transceiver automatically enters the emergency mode.

HIGH/LOW

➥ Push to select the transmit output power temporarily or permanently, depending on the presetting.

TALK AROUND

➥ Push to turn the Talk Around function ON or OFF.
- The Talk Around function equalizes the transmit frequency to the receive frequency for transceiver-to-transceiver communication.

WIDE/NARROW

➥ Push to toggle the channel passband width between wide and narrow.

DTMF AUTODIAL

➥ Push to transmit the preprogrammed DTMF code.

CALL

➥ Push to transmit a 2-Tone or 5-Tone in the operating channel.

CALL A (CODE 1)/CODE B (CODE 2)
// only for the LMR model //

➥ Push to transmit a 2-Tone, that is programmed in channel 1 (Code A) or channel 2 (Code B).

CALL A (CODE 30)/CODE B (CODE29)
// only for the PMR model //

➥ Push to transmit a 5-Tone as a station code, that is programmed in channel 30 (Code A) or channel 29 (Code B).

EMERGENCY

➥ Hold down during the Emer SW ON timer period to turn ON the Emergency function.
- After the Start or Repeat timer period ends, an Emergency call is automatically transmitted once, or repeatedly, depending on the presetting.

➥ Hold down during the Emer SW OFF timer period to cancel the Emergency function, before transmitting an Emergency call.

SURVEILLANCE

➥ Hold down to turn ON the Surveillance function.

➥ Push to turn OFF the function.

- When this function is ON and a signal is received, a beep does not sound and the LED does not light, even if you push any key.

SIREN

➥ Hold down to emit a siren sound.

- This function may use for situations other than an emergency alert, such as a security alarm.

➥ Turning OFF the transceiver power to stop the siren sound.

ENCRYPTION

Push to turn the Voice Encryption function ON or OFF while operating in the digital mode.

ANNOUNCE

➥ Push to turn the Channel Announce function ON or OFF.

NOTE:
When the Beep function (p.16) is OFF, the operating channel is not announced, regardless of this setting.

■ Selecting a channel

There are several types of channel selections. Methods may differ, depending on the presetting. Consult your dealer for details.

To select the desired operating channel:
➥ Rotate **[ROTARY SELECTOR]**.
➥ Push one of **[MR-CH 1]** to **[MR-CH 4]**.
➥ Push **[Prio A]**, **[Prio B]**, **[Prio A (Rewrite)]** or **[Prio B (Rewrite)]**.

AUTOMATIC SCAN TYPE:
Channel setting is not necessary for this scan type. When turning ON the power, the transceiver automatically starts scanning. Scanning stops when a signal is received.

■ Receiving and transmitting

CAUTION:
Attach an antenna before transmitting.
Transmitting without an antenna may damage the transceiver.

Receiving:
① Rotate **[VOL]** to turn ON the power.
② Rotate **[ROTARY SELECTOR]**, or push one of the memory channel keys, **[MR-CH1]** to **[MR-CH4]**, to select a channel.
③ When receiving a call, adjust the audio output level to a comfortable listening level.

Transmitting:
Wait until the channel is clear to avoid interference.
① While holding down **[PTT]**, speak at a normal voice level.
② Release **[PTT]** to receive.

IMPORTANT: To maximize the readability of your signal:
1. After pushing **[PTT]**, pause briefly before you start speaking.
2. Hold the microphone 5 to 10 cm (2 to 4 inches) from your mouth, then speak at a normal voice level.

◇ Transmitting notes

• Transmit inhibit function

The transceiver has several inhibit functions which restrict transmission under the following conditions:

- The channel is busy.
  However, depending on the presettings, you can transmit when the call includes an unmatched (or matched) CTC-SS (DTCS) tone.
- The selected channel is a 'receive only' channel.

• Time-out timer

If continuous transmission exceeds the preprogrammed time-out timer limit, transmission is cut off.

• Penalty timer

The time-out timer cuts off transmission, further transmission is inhibited for the preprogrammed penalty timer period.

• PTTID call

The transceiver automatically sends the ID code (5-tone, DTMF, BIIS, MDC system or IDAS operations) when [PTT] is pushed (beginning of the transmission) and/or released (end of transmission), depending on the presetting.

◇ DTMF transmission

If the transceiver has [DTMF Autodial] assigned to it, the automatic DTMF transmission function is usable.

➥ Push [DTMF Autodial] to transmit the DTMF code.

◇ Receiving a Stun, Kill and Revive call

The dispatcher can send a 2-Tone or 5-Tone that will stun, kill or revive your transceiver.

When the Stun command is received, a beep sounds*, and the transceiver becomes unusable. Receiving a Revive command is necessary to operate the transceiver again in this case.

When the Kill command is received, a beep sounds*, and the transceiver becomes unusable (the transceiver switches to the cloning required condition). Cloning the transceiver is necessary to operate the transceiver again in this case.

* Depending on the presetting. Ask your dealer for details.

■ Emergency Call

When pushing **[Emergency]** for the set time period*, the transceiver transmits an emergency signal once, or repeatedly, on the specified emergency channel.

The transceiver automatically transmits a repeat emergency signal until it receives an acknowledgement signal, or you turn OFF the transceiver power.
When no emergency channel is specified, it transmits the signal on the previously selected channel.

If you want to cancel the emergency call, hold down **[Emergency]** again before transmitting the call.
If your transceiver is programmed for Silent operation, you can transmit an Emergency call without the beep sounding and the LED indicator lighting.

IMPORTANT: It is recommended to set an emergency channel individually to provide the certain emergency call operation.

NOTE:
Depending on the presetting, the following functions are automatically activated. Ask your dealer for details.

• Auto TX function
After an emergency call transmission, the transceiver transmits the audio from the microphone for a set time period.*

• Auto RX function
After the emergency call transmission, the transceiver stands by in the audible mode for the set time period.*

* Depending on the presetting. Ask your dealer for details.

■ Lone Worker Emergency Call

When the Lone Worker function is ON, and if no operation occurs for a set time period*, the transceiver automatically enters the emergency mode. Then the countdown for the emergency call transmission starts.
After a set time period* has passed, an emergency call is automatically transmitted once, or repeatedly*.
If the user operates the transceiver before the call is transmitted, the transceiver exits the emergency mode, and the emergency call is cancelled.

To turn ON the function, see page 6.

■ Man Down Emergency Call

This function may or may not be available, depending on the presetting.
When the transceiver has been left in a horizontal position for a set time period*, the transceiver enters the emergency mode, and then a countdown starts.
After a set time period* has passed, an emergency call is automatically transmitted once, or repeatedly*.
If the transceiver is placed in a vertical position before the first transmission, the transceiver exits the emergency mode, and the emergency call is cancelled.

■ Motion Detection Emergency Call

This function may or may not be available, depending on the presetting.
If the acceleration sensor detects the user continuously moves for the set timer period and at the set speed, the transceiver enters the emergency mode, and then the countdown starts.
After a set time period* has passed, an emergency call is automatically transmitted once, or repeatedly*.
Once the countdown starts, you cannot cancel the emergency call.

* Depending on the presetting. Ask your dealer for details.

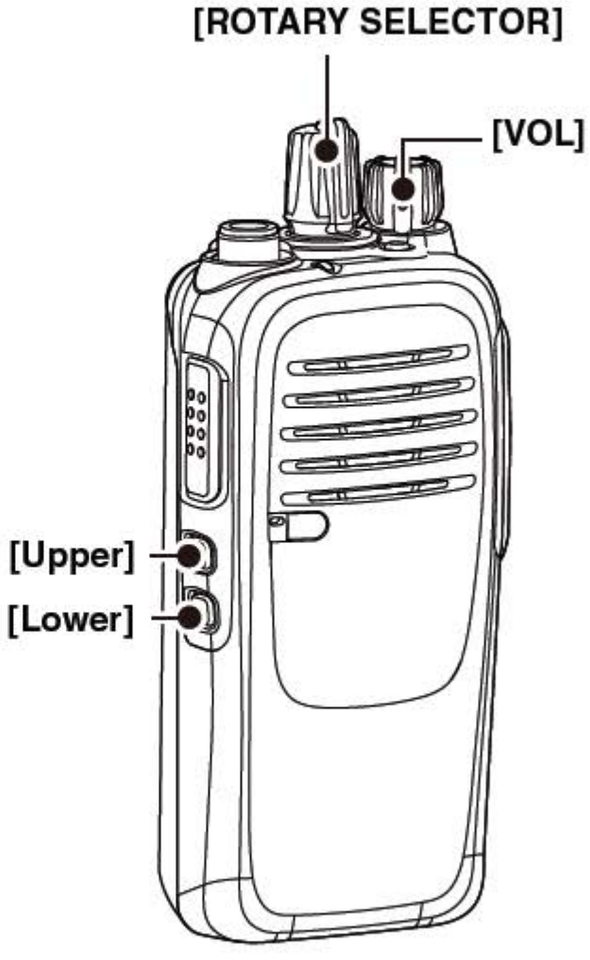
■ Setting the Beep function

The Beep function can be turned ON or OFF. When it is OFF, the channel announcement is also turned OFF.

NOTE:
You should turn ON the Beep function when you set the Beep level, the Ringer level, the microphone gain, and the squelch level.

①Rotate **[VOL]** to turn the transceiver power OFF.
②Set **[ROTARY SELECTOR]** to any channel other than Channel 16.
③While holding down **[Lower]**, rotate **[VOL]** to turn ON the power to enter the Beep level adjustment mode.
④Push **[Lower]** to turn the Beep function ON or OFF.
- When a beep sounds after pushing **[Lower]**, the Beep function is ON. When no beep sounds after pushing **[Lower]**, the Beep function is OFF.
- The transceiver stores the setting every time you change it.
- If desired, push **[Upper]** to adjust the Beep level. See page 17 for details.

⑤Rotate **[VOL]** to turn OFF the power to exit the Beep level adjustment mode.



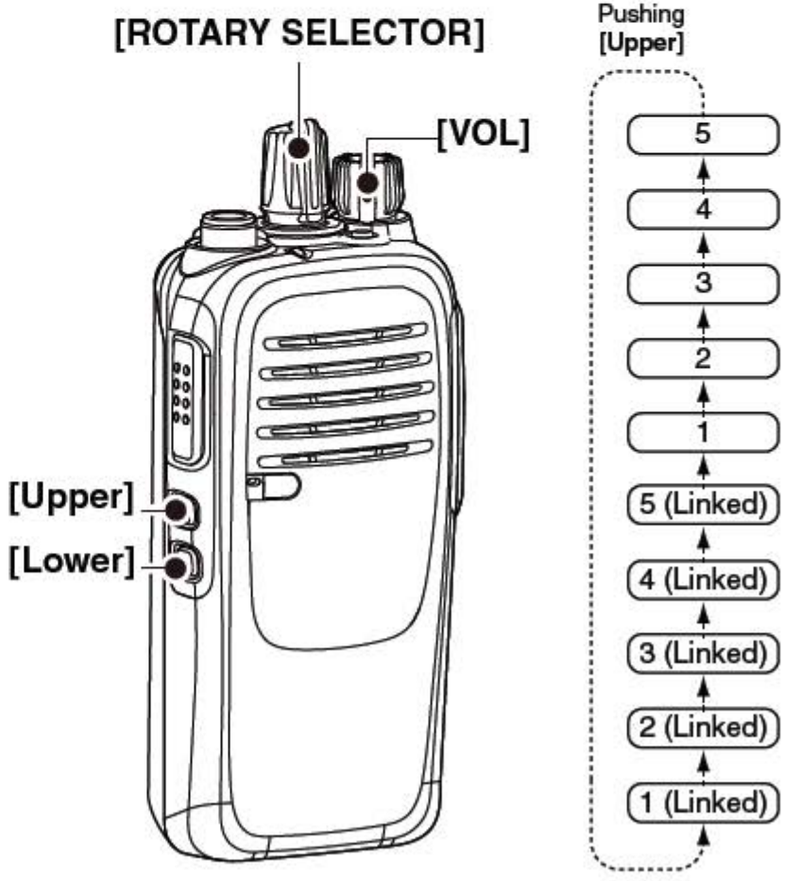
■ Setting the Beep level

The Beep level is adjustable between 1 and 5, or 1 (linked) and 5 (linked). When a Linked option is selected, the beep audio level is adjustable by rotating **[VOL]**.

①Rotate **[VOL]** to turn OFF the transceiver.
②Set **[ROTARY SELECTOR]** to any channel other than Channel 16.
③While holding down **[Lower]**, rotate **[VOL]** to turn ON the power and enter the Beep level adjustment mode.
④Push **[Upper]** to change the Beep level.
- Repeatedly pushing **[Upper]** first selects 1 (lowest) to 5 (highest), and then selects the lowest linked level, 1 (Linked) to the highest, 5 (Linked). Repeatedly pushing **[Upper]** repeats the cycle. See the illustration on the right.
- The adjustable range is 1 to 5 or 1 (Linked) to 5 (Linked).
- A beep sounds every time you push **[Upper]**. Therefore, you can determine the current level setting by the increasing loudness of the beep that sounds.
- To determine if you have selected a linked level, set **[VOL]** to minimum, then push **[Upper]** repeatedly, listening for the loudest beep (level 5). Pushing **[Upper]** once after the loudest beep will select 1 (Linked). Repeatedly push **[Upper]** to select the desired linked level.

⑤Rotate **[VOL]** to turn OFF the power to exit the Beep level adjustment mode.

NOTE:
This operation may not be selectable, depending on the presetting, Ask your dealer for details.



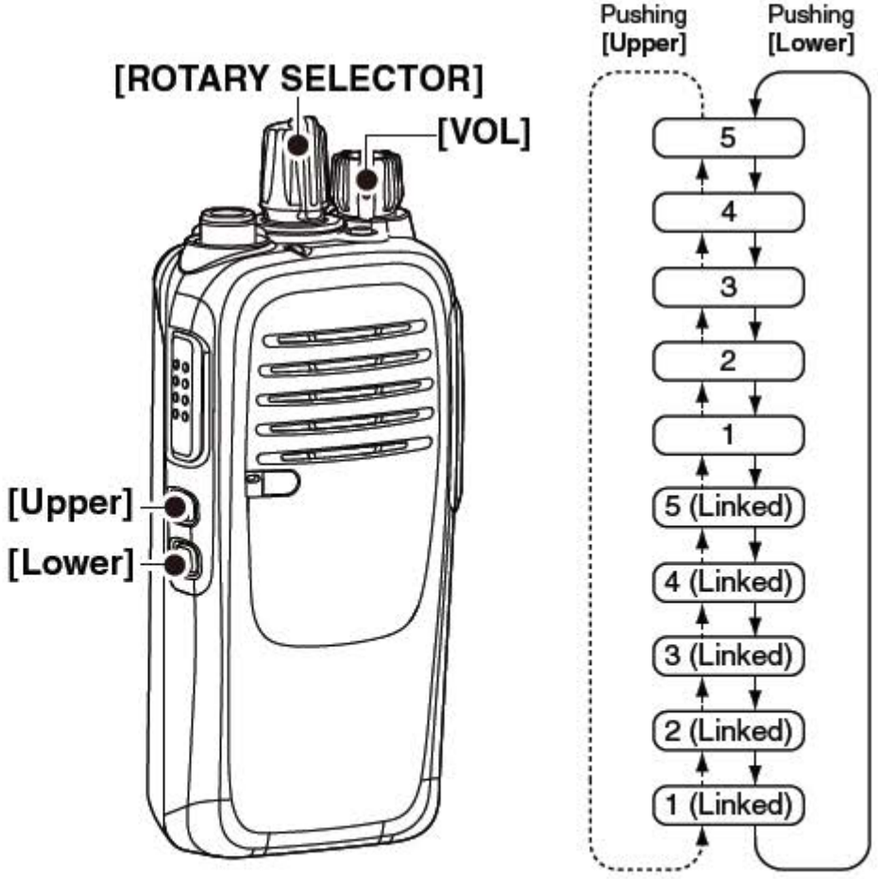
■ Setting the Ringer level

The Ringer level can be adjusted between 1 and 5, or 1 (Linked) and 5 (Linked). When a Linked option is selected, the ringer audio level is adjustable by rotating **[VOL]**.

①Rotate **[VOL]** to turn OFF the transceiver power.
②Set **[ROTARY SELECTOR]** to Channel 16.
③While holding down **[Lower]**, rotate **[VOL]** to turn ON the power and enter the Ringer level adjustment mode.
④Push **[Upper]** to increase, or push **[Lower]** to decrease the Ringer level.
- Repeatedly pushing **[Upper]** first selects 1 (lowest) to 5 (highest), and then selects the lowest linked level, 1 (Linked) to the highest, 5 (Linked). Repeatedly pushing **[Upper]** or **[Lower]** repeats the cycle. See the illustration on the right.
- The adjustable range is 1 to 5 or 1 (Linked) to 5 (Linked).
- A beep sounds after pushing **[Upper]**. Therefore, you can determine the current level setting by the increasing loudness of the beep that sounds.
- To determine if you have selected a linked level, set **[VOL]** to minimum, then push **[Upper]** up to 10 times, listening for the loudest beep (level 5). Pushing **[Upper]** once after the loudest beep will select 1 (Linked). Repeatedly push **[Upper]** or **[Lower]** to select the desired linked level.

⑤Rotate **[VOL]** to turn OFF the power to exit the Ringer level adjustment mode.

NOTE:
This operation may not be selectable, depending on the presetting. Ask your dealer for details.



■ Setting the microphone gain

Adjust the microphone gain.

①Rotate **[VOL]** to turn the transceiver power OFF.
②Set **[ROTARY SELECTOR]** to Channel 16.
③While holding down **[Upper]**, rotate **[VOL]** to turn ON the power and enter the microphone gain adjustment mode.
④Push **[Upper]** or to increase, or push **[Lower]** to decrease the microphone gain.
- The adjustable range is 1 (minimum) to 4 (maximum).
- A beep sounds after pushing **[Upper]** or **[Lower]**. An error beep sounds if you try to exceed the adjustable range.

⑤Rotate **[VOL]** to turn OFF the power to exit the microphone gain adjustment mode.

NOTE:
This operation may not be selectable, depending on the presetting. Ask your dealer for details.

■ Setting the squelch level

The squelch circuit mutes the received audio signal, depending on the signal strength.

①Rotate **[VOL]** to turn the transceiver power OFF.
②Set **[ROTARY SELECTOR]** to any channel other than Channel 16.
③While holding down **[Upper]**, rotate **[VOL]** to turn ON the power and enter the squelch level adjustment mode.
④Push **[Upper]** to increase the squelch level (tight squelch), or push **[Lower]** to decrease the squelch level (loose squelch).
- The adjustable range is 0 (loose squelch) to 9 (tight squelch).
- A beep sounds after pushing **[Upper]** or **[Lower]**. An error beep sounds if you try to exceed the adjustable range.

⑤Rotate **[VOL]** to turn OFF the power to exit the squelch level adjustment mode.

NOTE:
This operation may not be selectable, depending on the presetting. Ask your dealer for details.

■ Output power level selection

If the transceiver has [High/Low] assigned to it, the transmit output power level can be selected, depending on the presetting.

➥ Push [High/Low] to select the transmit output power level.
- One beep sounds when "Low 1" is selected.
- Two beeps sound when "Low 2" is selected.
- Three beeps sound when "High" is selected.

■ Priority A channel selection

When one of the following operations is performed, the transceiver automatically selects the Priority A channel.

- Turning the power ON
  The Priority A channel is selected each time the transceiver power is turned ON.
- Auto reset
  The Priority A channel is selected when the Auto Reset timer ends.

■ MDC 1200 system operation

The MDC 1200 signaling system enhances your transceiver's capabilities. You can receive or transmit PTT ID and Emergency calls. You can also receive Radio Check, Stun, and Revive calls.

An additional feature of the MDC 1200 system included in Icom transceivers is called aliasing. Each transceiver on the system has a unique ID number. Aliasing is a substitute for this ID number and you can give an alphanumeric name for each station ID.

■ Receiving a call

◇ Receiving a PTT ID

① When a PTT ID is received:
  • Beeps sound.
② Hold down **[PTT]** and speak into the microphone.
③ Release **[PTT]** to receive a response.

◇ Receiving an Emergency Call

①When an emergency call is received:
  • Beeps sound.
②Turn power OFF or change the channel to stop the beep.

◇ Receiving a Stun, Kill and Revive call

The dispatcher can send a 2 or 5-tone signal that will stun, kill or revive your transceiver.
When the Stun command is received, a beep sounds*, and the transceiver becomes unusable. Receiving a Revive command is necessary to operate the transceiver again in this case. When the Kill command is received, a beep sounds*, and the transceiver becomes unusable (the transceiver switches to the cloning required condition). Cloning the transceiver is necessary to operate the transceiver again in this case.
* Depending on the presetting. Ask your dealer for details.

■ Transmitting a call

◇ Transmitting a PTT ID

①Push **[PTT]** to make a call.
②Beeps sound, depending on the presetting.
③Your station ID will be transmitted when you push **[PTT]** (at the beginning of transmission) or release it (at the end of transmission), depending on the presetting.

◇ Transmitting an Emergency Call

When holding down **[Emergency]** for a set time period, the emergency signal is transmitted once or repeatedly* on the emergency channel. When no emergency channel is specified, the signal is transmitted on the operating channel.

* When the Repeat Cancel function is ON, the transceiver cancels repeating after receiving an acknowledgement.
When the Repeat Cancel function is OFF, the transceiver repeats calling according to the number of repeat cycles, even after receiving an acknowledgement.

If you want to cancel the emergency call, hold down the key again before transmitting the call.
You can transmit an emergency call without a beep emission, and the display indication, depending on the presetting. (Silent operation)
The transceiver can also be programmed to keep the microphone open during an emergency call, allowing monitoring the situation. Ask your dealer for details.

IMPORTANT: It is recommended to set an emergency channel individually to provide the certain emergency call operation.

4 IDAS OPERATION

■ IDAS operation

The IC-F1000D series and IC-F2000D series provide Icom Digital Advanced System (IDAS) that meets the 6.25 kHz emission mask requirements for narrow banding, and increases efficiency of channel allocation and use of spectrum.

NOTE: During IDAS operation, BIIS 1200 and MDC 1200 system operations are not available.

■ IDAS-Trunk operation

The IDAS-Trunk system enables further effective channel management by sharing a minimum of channels with a large number of users.
Rotate [ROTARY SELECTOR] to select the memory channel that is programmed in the IDAS-Trunk zone.

NOTE: During IDAS-Trunk operation, you can receive and transmit digital calls in the same way with the following IDAS operation.

■ Receiving a call

◇ Receiving a Call Alert

① When a Call Alert is received;
- The transceiver will automatically transmit the acknowledgement.
- The LED indicator blinks orange.
- Beeps sound.

② Hold down [PTT], then speak into the microphone.
③ Release [PTT] to receive a response.

NOTE: The LED indicator or Beeps may differ, depending on the presetting. Ask your dealer for details.

◇ Receiving a Stun, Kill or Revive

If an individual call with Stun or Kill command is received (RAN code matching is not necessary depending on the presetting), the transceiver will automatically transmit the acknowledgement, and then you cannot receive* or transmit.
* Depending on the received Stun command setting.

➥ When a Stun command is received;
- The transceiver cannot be operated until the individual call with Revive command is received (RAN code matching is not necessary depending on the presetting) or until the data cloning is performed.
- Even if [ROTARY SELECTOR] is changed, the transceiver will keep the same channel as the Stun command is received.

➥ When a Kill command is received;
- The LED indicator alternately blinks red and green.
- The transceiver cannot be operated until the data cloning is performed. Ask your dealer for details.

NOTE: Depending on the presetting, the transceiver ignores the Stun, Revive and Kill commands, which are from a non-specified station.

◇ Receiving a Remote Monitor or Radio Check Call

If an individual call with Remote monitor or Radio check command is received (RAN code matching is not necessary depending on the presetting), the transceiver will automatically transmit.

➥ When a Remote monitor command is received;
- The transceiver will automatically transmit the acknowledgement, and then it transmits the microphone audio for the set time period.

➥ When a Radio check command is received;
- The transceiver will automatically transmit the acknowledgement.

■ Transmitting a call

IDAS operation allows you to make a call to a specific station (Individual call) or to a particular group (Talkgroup call). Other digital mode transceivers on the channel will not receive a call that does not match their individual or talkgroup ID and/or RAN (Radio Access Number) code.

◇ Transmitting an Emergency Call

When [Emergency] is held down for the specified time period, the emergency signal (digital command) is transmitted once or repeatedly* on the specified emergency channel. When no emergency channel is specified, the signal is transmitted on the operating channel.

* When the Repeat Cancel function is ON, the transceiver cancels repeating after receiving an acknowledgement.
  When the Repeat Cancel function is OFF, the transceiver repeats calling according to the number of repeat cycles, even after receiving an acknowledgement.

Individual or Talkgroup call types of emergency calls can be pre-fixed. If the call type is not pre-fixed, the default or selected call type is used.

If you want to cancel the emergency call, hold down [Emergency] again before transmitting the call.

If your transceiver is programmed for Silent operation, you can transmit an Emergency call without the beep sounding and the LED indicator lighting.

The transceiver can also be programmed to keep the microphone open during an emergency call, allowing monitoring of the situation.

Ask your dealer for details.

IMPORTANT: It is recommended to set an emergency channel individually to provide the certain emergency call operation.

NOTE: The Digital Request Ack function is activated, the transceiver transmits the emergency call with the request to send back an acknowledgment.

■ Position data transmission

When an optional HM-171GPW or any other GPS receiver is connected to the transceiver, the position (longitude and latitude) data can be transmitted automatically when;

- After sending a Status Call
  - Set the 'Send with Status Call' item as 'Enable.'
- After sending an Emergency Call
  - Set the 'Send with Emergency' item as 'Enable.'
- After sending a Voice Call
  - Set the 'Send with Voice Call' item as 'Enable.'

Ask your dealer or system operator for connection details.

■ Status message transmission

The status message can be transmitted automatically.
The status message is transmitted when the transceiver is turned ON or OFF.

- Select a status message to be transmitted in 'Power ON Status' or 'Power OFF Status' item, respectively.
- Select a target station ID in 'Power Status ID'.

■ Encryption function

The encryption function enables voice scrambling, which provides private digital communication between stations.

Push [Encryption] to turn the encryption function ON or OFF.

Count on us!

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