# 6 REMOTE JACK (CI-V) INFORMATION

◇ CI-V connection example

The transceiver can be connected through an optional CT-17 CI-V LEVEL CONVERTER to a personal computer equipped with an RS-232C port. The Icom Communication interface-V (CI-V) controls the following functions of the transceiver.
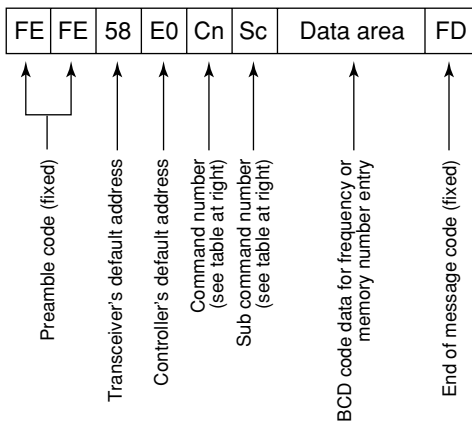
Up to four Icom CI-V transceivers or receivers can be connected to a personal computer equipped with an RS-232C port. for setting the CI-V condition using initial set mode.

9–15 V DC

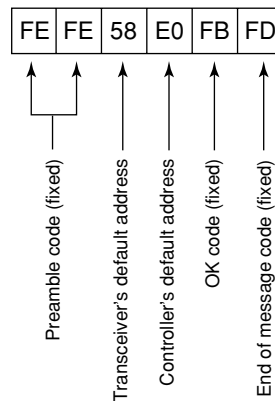CT-17

Personal computer
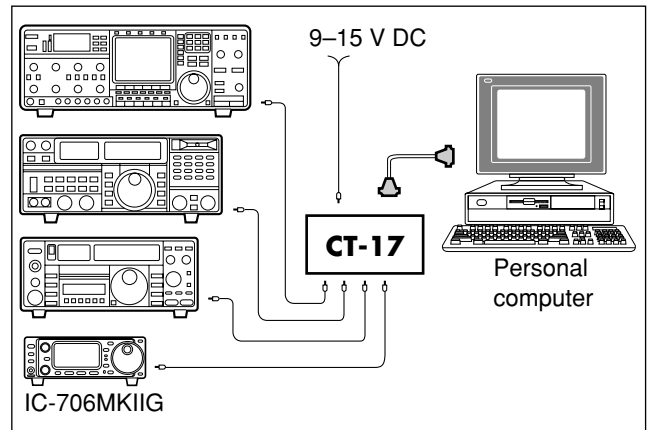
IC-706MKIIG

◇ Data format

The CI-V system can be operated using the following data formats. Data formats differ according to command numbers. A data area is added for some commands.
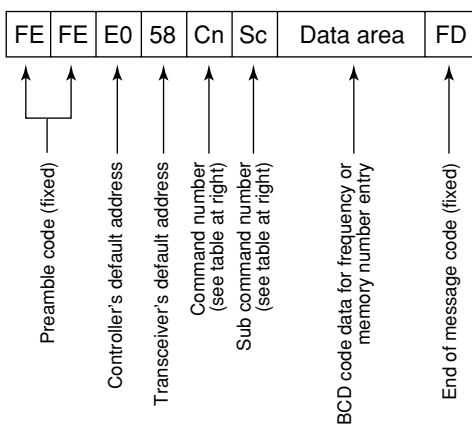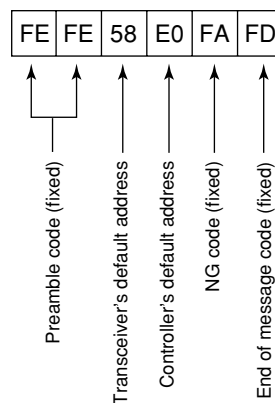
CONTROLLER TO IC-706MKIIG

FE	FE	58	E0	Cn	Sc	Data area	FD

- Preamble code (fixed)
- Transceiver's default address
- Controller's default address
- Command number (see table at right)
- Sub command number (see table at right)
- BCD code data for frequency or memory number entry
- End of message code (fixed)

OK MESSAGE TO CONTROLLER

FE	FE	58	E0	FB	FD

- Preamble code (fixed)
- Transceiver's default address
- Controller's default address
- OK code (fixed)
- End of message code (fixed)

IC-706MKIIG TO CONTROLLER

FE	FE	E0	58	Cn	Sc	Data area	FD

- Preamble code (fixed)
- Controller's default address
- Transceiver's default address
- Command number (see table at right)
- Sub command number (see table at right)
- BCD code data for frequency or memory number entry
- End of message code (fixed)

NG MESSAGE TO CONTROLLER

FE	FE	58	E0	FA	FD

- Preamble code (fixed)
- Transceiver's default address
- Controller's default address
- NG code (fixed)
- End of message code (fixed)

COMMAND TABLE

Cn	Sc	Description
00	—	Send frequency data
01	xx	Send mode data
02	—	Read band edge frequencies
03	—	Read display frequency
04	—	Read display mode
05	—	Set frequency data
06	00[*1]	Set LSB
	01[*1]	Set USB
	02[*1]	Set AM
	03[*1]	Set CW
	04[*1]	Set RTTY
	05[*1]	Set FM
	06[*1]	Set WFM
07	—	Set to VFO
	00	Set to VFO A
	01	Set to VFO B
	A0	VFO A=B
	B0	Switch VFO A and B
08	—	Set to memory mode
	mc[*2]	Mch
09	—	Memory write
0A	—	Memory to VFO
0B	—	Memory clear
0C	—	Read duplex offset frequency
0D	—	Set duplex offset frq d563412

Cn	Sc	Description
0E	00	Scan stop
	01	Scan start
0F	00	Split OFF
	01	Split ON
	10	Simplex mode
	11	Duplex − mode
	12	Duplex + mode
10	00	10 Hz TS
	01	100 Hz TS
	02	1 kHz TS
	03	5 kHz TS
	04	9 kHz TS
	05	10 kHz TS
	06	12.5 kHz TS
	07	20 kHz TS
	08	25 kHz TS
	09	100 kHz TS
11	xx	ATT ON/OFF; 00=OFF; 20=ON
15	01	Read squelch condition
	02	Read S-meter level
16	02	Preamp setting 01=on 00=off
	12	AGC setting 01=Fast 02=Norm
	22	NB setting 01=on 00=off
	42	TONE setting 01=on 00=off
	43	TSQL setting 01=on 00=off
	44	COMP setting 01=on 00=off
	46	VOX setting "
	47	BK-IN setting "
19	00	Read transceiver ID code

[*1]When wide or normal operation is available, add "00" for wide operation or "01" for normal operation; when normal or narrow operation is available, add "00" for normal operation or "01" for narrow operation; when wide, normal and narrow operation is available, add "00" for wide operation, "01" for normal operation and "02" for narrow operation.

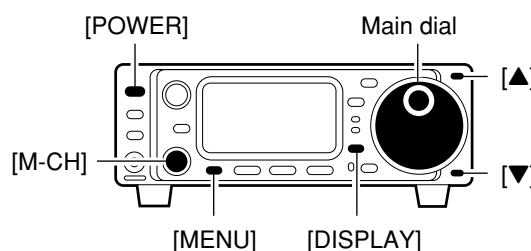[*2]Memory channel number 1A=0100/1b=0101, 2A=0102/2b=0103, 3A=0104/3b=0105, C1=0106, C2=0107.
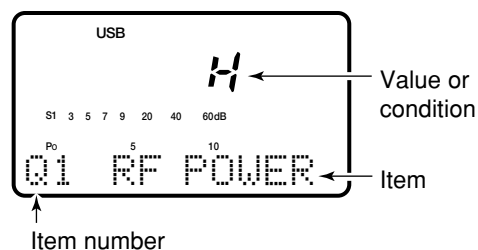
7 SET MODE

■ General

Set mode is used for programming infrequently changed values or conditions of functions. The IC-706MKIIG has 2 separate set modes: *quick set mode* and *initial set mode.*

◇ Quick set mode operation

① While power is ON, push [DISPLAY] for 2 sec.
  • Quick set mode is selected and one of its items appears.
  • Quick set mode items vary depending on the operating mode (SSB, FM, etc.) selected.
② Push [MENU] one or more times to select the desired item.
  • [M-CH] or [▲]/[▼] can also be used.
③ Rotate the main dial to set the values or conditions for the selected item.
④ Repeat steps ② and ③ to set other items.
⑤ To exit quick set mode, push [DISPLAY] momentarily.

[POWER]   Main dial
                                    [▲]
[M-CH]
                                    [▼]
          [MENU]   [DISPLAY]

[DISPLAY EXAMPLE: QUICK SET MODE]

USB
                    H ← Value or
                         condition
S1 3 5 7 9 20 40 60dB
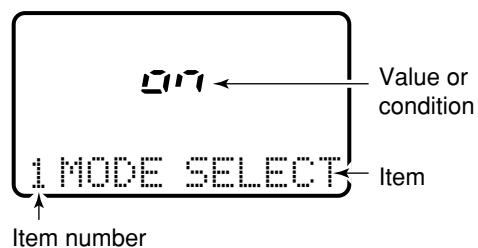Po   5   10
Q1 RF POWER ← Item

Item number

◇ Initial set mode operation

① Push [POWER] for 2 sec. to turn power OFF.
② While pushing [LOCK] push [POWER] to turn power ON.
  • Initial set mode is selected and one of its items appears.
③ Push [MENU] one or more times to select the desired item.
  • [M-CH] or [▲]/[▼] can also be used.
④ Rotate the main dial to set the values or conditions for the selected item.
⑤ Repeat steps ③ and ④ to set other items.
⑥ To exit initial set mode, push [POWER] for 2 sec. to turn power OFF.
⑦ Push [POWER] to turn power ON again.
  • The conditions selected in initial set mode are now effective.

[POWER]   Main dial
                                    [▲]
[M-CH]
                                    [▼]
          [MENU]   [LOCK]
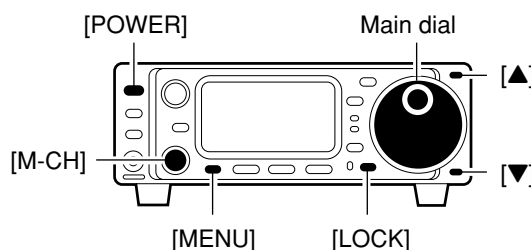
[DISPLAY EXAMPLE: INITIAL SET MODE]

                on ← Value or
                         condition

1 MODE SELECT ← Item

Item number

■ Quick set mode items

Q1 RF POWER (all modes)

This item adjusts the RF output power. The RF output power can be adjusted from L, 1 to 9 and H for indication, however, it can be adjusted continuously.

H

The default is H (maximum power). Note that while adjusting the output power, the power meter is displayed automatically.

Q2 MIC GAIN (SSB/AM/FM only)

This item adjusts microphone gain from 1 to 10 for indication, however, it can be adjusted continuously.

5

The default is 5. Note that while adjusting mic gain, the ALC meter is displayed automatically.

Q2 CW PITCH (CW only)

This item adjusts the CW pitch. CW pitch is adjustable from 300 to 900 Hz in 10 Hz steps.

CW
600

The default is 600 Hz.

Q2 RTTY TONE (RTTY only)

This item selects the RTTY tone. RTTY tone is toggled between 1275, 1615 and 2125 Hz.

RTTY
2125

The default is 2125 Hz.

Q3 VOX DELAY (SSB/AM/FM only)

This item adjusts the VOX (Voice-activated Transmit) delay time. The delay time can be adjusted from 0 to 2 sec. in 0.1 sec. units.

USB
1.0

The default is 1.0 seconds.

Q3 BK-IN DELAY (CW only)

This item adjusts break-in delay time for CW semi break-in operation. The delay time is selectable from 2.0 to 13.0 (dots).

CW
7.5

The default is 7.5 dots.

Q3 RTTY SHIFT (RTTY only)

This item adjusts the RTTY shift. There are 3 selectable values: 170, 200 and 425 Hz.

RTTY
170

The default is 170 Hz.

Q4 VOX GAIN (SSB/AM/FM only)

This item adjusts the VOX gain for the VOX (voice activated transmit) function.

USB
5

The default is 5.

Q4 RTTY KEYING (RTTY only)

This item adjusts the RTTY keying. Normal or reverse keying can be selected.

RTTY
n

The default is "n," normal.
Normal : key open=mark
Reverse : key open=space

Q4 CW PADDLE (CW only)

This item adjusts the CW paddle type. Four selections are available.
- n : normal (for electronic keyer use)
- r : reverse (for electronic keyer use)
- buG : When using the electronic key, key down produces a "dash," releasing the key automatically produces a "dot(s)."
- oFF : Turns OFF the electronic keyer (for straight key use)
- ud : For using the microphone's [UP]/[DN] keys instead of the CW paddle.

CW
n
The default is "n," normal.

Q5 ANTI VOX (SSB/AM/FM only)

This item adjusts the ANTI-VOX gain for the VOX (voice activated transmit) function.

USB
5
The default is 5.

Q5 KEY SPEED (CW only)

This item adjusts the CW key speed. The key speed can be selected from 6 to 60 wpm.

CW
20
The default is 20 wpm.

Q6 CARRIER Frq (SSB only)

This item adjusts the carrier frequency (BFO frequency), allowing you to change the audio characteristics. Selectable values are –200 to +200 Hz in 10 Hz steps.

USB
0
The default is 0 Hz.

Q6 RATIO (CW only)

This item adjusts the CW key ratio (or weight). The ratio can be selected from 2.8 to 4.5.

CW
3.0
The default is 3.0.

Q6 RPTR TONE (FM only)

This item selects a subaudible tone for FM-T mode operation to access a repeater. There are 50 tones available from 67.0 Hz to 254.1 Hz (see table at right).

FM
88.5
The default is 88.5 Hz.

• Available subaudible tones   Unit: Hz

67.0	79.9	94.8	110.9	131.8	156.7	171.3	186.2	203.5	229.1
69.3	82.5	97.4	114.8	136.5	159.8	173.8	189.9	206.5	233.6
71.9	85.4	100.0	118.8	141.3	162.2	177.3	192.8	210.7	241.8
74.4	88.5	103.5	123.0	146.2	165.5	179.9	196.6	218.1	250.3
77.0	91.5	107.2	127.3	151.4	167.9	183.5	199.5	225.7	254.1

Q7 TONE SQL (FM only)

This item adjusts sets a subaudible tone for tone squelch use. (the same subaudible tone frequencies as for repeater operation are available—see above).
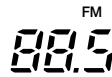
FM
88.5
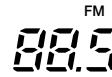The default is 88.5 Hz.

Q8 RPTR-T SCN (repeater tone scan)

During repeater operation, you can detect the tone frequency necessary to open a repeater (see p. 30).

FM
`88.5`

The default is 88.5 Hz.

Q8 T-SQL SCN (tone squelch tone scan)

During tone squelch operation, you can detect the tone frequency necessary to communicate using tone squelch (see p. 31).

FM
`88.5`

The default is 88.5 Hz.

■Initial set mode items

1 MODE SELECT (all modes)

This item is available in all modes, and allows you to simplify operation by inhibiting the selection of unneeded operating modes during normal operation. For example if you are operating mobile and only plan on using FM and AM modes, use "MODE SELECT" to inhibit access to all other modes (SSB, CW, RTTY, WFM), thereby making selection of AM or FM quick and easy.

`on`

The default is on for all operating modes. To toggle an operating mode on or off, push (or push and hold) [MODE] one or more times until the desired mode is displayed, then rotate the main dial to set on or off.

2 BEEP (confirmation beep)

A beep sounds each time a switch is pushed to confirm it. This function can be turned OFF for silent operation.
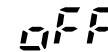
`on`

Confirmation beep ON (default)

`oFF`
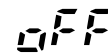
Confirmation beep OFF

3 BAND BEEP (band beep)

A beep sounds when an operating frequency enters or exits a transmit frequency range. This functions independent of the confirmation beep setting (above).

`on`

Band beep ON (default)

`oFF`

Band beep OFF

4 BACK LIGHT (display backlighting)

The function display backlighting can be set to high, low or OFF to suit ambient lighting.

`HI`

Display backlighting set to high (default).

`Lo`

Display backlighting set to low.

5 KEY LIGHT (key/switch backlighting)

The key/switch backlighting can be set to high, low or OFF to suit ambient lighting.

`HI`

Display backlighting set to high (default).

`Lo`

Display backlighting set to low.

6 AUTO OFF (auto power OFF)

The auto power OFF function can be used to automatically turn the transceiver OFF after a specified time of operation. This item can be set to 30 min., 60 min., 90 min., 120 min., or OFF.

oFF

Auto power OFF deactivates. (default)

20

Auto power OFF set to 20 min.

7 RF/SQL (SQL/AUTO/RF•SQL)

The [RF/SQL] control can be set as the squelch control (default), the RF/squelch control (USA version default) or automatic (acts as squelch in FM/WFM/AM modes; as RF in SSB/CW/RTTY modes). (See p. 22)

rF

The [RF/SQL] control functions as RF gain control only.

SQL

The [RF/SQL] control functions as squelch control only.

8 SUBDIAL (Subdial function)

When this item is set to "rit," pushing [RIT/SUB] turns the RIT function ON (lights red)—rotating [M-CH] changes the RIT frequency; when this item is set to "Freq," pushing [RIT/SUB] turns the sub dial function ON (lights green)—rotating [M-CH] changes the operating frequency. Note that in FM, WFM and AM modes, pushing [RIT/SUB] always selects the sub dial function (lights green), regardless of this setting.

rit

Pushing [RIT/SUB] selects the RIT function (default).

FrEq

Pushing [RIT/SUB] selects the sub dial function.

9 OPT. FIL 1 (optional filter)

When an optional filter is installed, this selection is necessary, otherwise the filters cannot be selected. Selections available are FL-100, FL-101, FL-103, FL-223, FL-232 and none (default). See p. 22 for usable filters for each mode and see p. 60 for filter installation.

no

No filters are selected (default).

FL-223

FL-223 (for LSB/USB mode) is selected.

10 OPT. FIL 2 (optional filter)

When an optional filter is installed, this selection is necessary, otherwise the filters cannot be selected. Selections available are FL-100, FL-101, FL-103, FL-223, FL-232 and none (default). See p. 22 for usable filters for each mode and see p. 60 for filter installation.

no

No filters are selected (default).

FL-223

FL-223 (for LSB/USB mode) is selected.

11 PEAK HOLD (peak hold)

When the peak hold function is ON, the highest activated segment of the meter remains visible for 0.5 sec.; when OFF, the meter functions normally.

on

Peak hold ON (default)

oFF

Peak hold OFF

12 QUICK SPLIT (quick split function)

When this item is set to ON, pushing [SPL] for 2 sec. sets the undisplayed VFO frequency to the displayed VFO frequency plus the split offset or duplex offset, and activates split operation.

on — Quick split function ON (default).

oFF — Quick split function OFF.

13 SPLIT LOCK (split lock)

When this item is ON the main dial can be used to adjust the transmit frequency (XFC) even while the lock function is activated.

oFF — Split lock function OFF (default)

on — Split lock function ON

14 SPL OFFSET (split offset)

This item sets the offset (difference between transmit and receive frequencies) for the quick split function. Note that this setting is not valid in FM/WFM modes.

0.000 — Default is 0.100 MHz.

15 DUP HF (duplex offset)

This item sets the offset for the duplex function when operating on the HF bands.

0.100 — Default is 0.100 MHz.

16 DUP 50M (duplex offset)

This item sets the offset for the duplex function when operating on the 50 MHz band.

0.500 — Default is 0.500 MHz.

17 DUP 144M (duplex offset)

This item sets the offset for the duplex function when operating on the 144 MHz band.

0.600 — Default is 0.600 MHz.

18 DUP 430M (duplex offset)

This item sets the offset for the duplex function when operating on the 430 MHz band.

5.000 — Default is 5.000 MHz.

19 1TOUCH RPTR (one touch repeater)

This item sets the offset direction when using the one-touch repeater function. +duplex or –duplex can be selected.

DUP-- Duplex direction is set to –duplex.

DUP+ Duplex direction is set to +duplex.

20 AUTO RPTR (auto repeater)

When this item is set to "on 1", the tone encoder is not set when the auto repeater is activated; when set to "on 2" the auto repeater function also sets the tone encoder on.

oFF

Auto repeater function OFF (default).

on 1

Auto repeater function ON, tone encoder OFF.

21 SCAN RESUME (scan resume)

This item sets the scan resume function ON or OFF. *ON*: scan resumes 10 sec. after stopping on a signal (or 2 sec. after a signal disappears); *OFF*: scan does not resume after stopping on a signal. For the priority watch, setting to OFF pauses the watch until signal disappears and scan resumes.

on

Scan resume function is turned ON (default).

oFF

Scan resume function is turned OFF.

22 SCAN SPEED (scan speed)

This item sets the rate at which channels or frequencies are scanned during scan operations. High or low can be selected.

HI

Scan speed is set to high (default).

Lo

Scan speed is set to low.

23 U/D SPEED (up/down speed)

This item sets the rate at which frequencies are scanned through when the [UP]/[DN] switches are pushed and held. High or low can be selected.

HI

Up/down speed is set to high (default).

Lo

Up/down speed is set to low.

24 AM NB (Noise blanker in AM mode)

When this item is set to ON, the noise blanker function is available in AM mode. This is useful when communicating in AM mode (the noise blanker function should not be used when listening to regular AM broadcasts as it may degrade the received audio).

on

Noise blanker available (default)

oFF

Noise blanker not available

25 PAD CH (available memo pads)

This item sets the number of memo pad channels available. 5 or 10 memo pads can be set.

5

5 memo pads are available (default).

10

10 memo pads are available.

26 PWR ON CHK (Power on check)

When this item is set to "on," the set output power is briefly displayed when turning power ON (RIT and auto power off settings are also displayed if activated); when turned "oFF," the display goes directly to frequency indication at power ON.

on

Power on check ON (default)

oFF

Power on check OFF

27 A-TUNE STRT **(auto tuner start)**

The optional AT-180 ANTENNA TUNER has an automatic start capability which starts tuning if the SWR is higher than 1.5–3.

When "oFF" is selected, the tuner remains OFF even when the SWR is poor (1.5–3).

When "on" is selected, automatic tune starts even when the tuner is turned OFF.

oFF

Auto tune function OFF (default).

on

Auto tune function ON.

Note: Even when "on" is selected, automatic tune does not start for the 50 MHz band.

28 PTT TUNE **(PTT tune function)**

When an optional AH-4 ANTENNA TUNER is connected, tuning can be started automatically at the moment the PTT is pushed.

oFF

Tuning starts only when [TUNER] is pushed (default).

on

Tuning starts when pushing [PTT] on a new frequency.

29 9600 MODE **(Data socket speed)**

This is used to change the communications speed packet operation. The data socket can be set to 1200 or 9600 baud.

9600

Default is 9600 baud.

30 VSEND SEL **(ACC socket output)**

"on": VSEND is for 144/430 MHz; HSEND is for the HF/50 MHz
"U only": VSEND is for 430 MHz; HSEND is for HF/50/144 MHz
"oFF": VSEND is not used; HSEND is for all bands.

on

The default is VSEND is for the 144/430 MHz band; HSEND is for the HF/50 MHz band.

31 SPEECH LANG **(voice synthesizer language)**

When the optional UT-102 VOICE SYNTHESIZER UNIT is installed, you can select between English and Japanese as the language.

EnG

Voice synthesizer functions in English (default).

JPn

Voice synthesizer functions in Japanese.

32 SPEECH SPD **(voice synthesizer speed)**

When the optional UT-102 VOICE SYNTHESIZER UNIT is installed, you can select between faster or slower synthesizer output.

HI

Voice synthesizer output is faster (default).

Lo

Voice synthesizer output is slower.

33 S-LVL SPCH (S-level speech)

When an optional UT-102 SPEECH SYNTHESIZER UNIT is installed, the synthesizer can be set to read out the frequency/mode only, or both the frequency/mode and S-meter level.

on
Voice synthesizer reads out both the frequency/mode and S-meter level (default).

oFF
Voice synthesizer reads out the frequency/mode only.

34 CI-V ADDRES (CI-V address)

To distinguish equipment, each CI-V transceiver has its own Icom standard address in hexadecimal code. The IC-706MKIIG's address is 4EH.

When 2 or more IC-706MKIIG's are connected to an optional CT-17 CI-V LEVEL CONVERTER, rotate the main dial to select a different address for each IC-706MKIIG in the range 01H to 7FH.

58H
Address set to 58H (default).

7FH
Address set to 7FH.

35 CI-V BAUD (CI-V data rate)

This item sets the data transfer rate. When "Auto" is selected, the baud rate is automatically set according to the connected controller or remote controller.

Auto
Auto baud rate (default)

19200
19200 bps

36 CI-V TRN (CI-V transceive)

Transceive operation is possible with the IC-706MKIIG connected to other Icom HF transceivers or receivers. When "on" is selected, changing the frequency, operating mode, etc. on the IC-706MKIIG automatically changes those of connected transceivers (or receivers) and vice versa.

on
Transceive ON (default)

oFF
Transceive OFF

37 CI-V 731 (CI-V operating frequency data length)

When connecting the IC-706MKIIG to the IC-735 for transceive operation, you must change the operating frequency data length to 4 bytes.

•This item MUST be set to "on" only when operating transceiver with the IC-735.

oFF
Frequency data set to 5 bytes (default).

on
Frequency data set to 4 bytes.