



CI-V REFERENCE GUIDE

HF/50 MHz ALL BAND
1 kW LINEAR AMPLIFIER

IC-PW2

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REMOTE CONTROL

Remote control (CI-V) information

◇ CI-V connection

The linear amplifier's power ON/OFF, frequency band, antenna, RF input, and linear amplifier circuit can be remotely controlled using a PC.

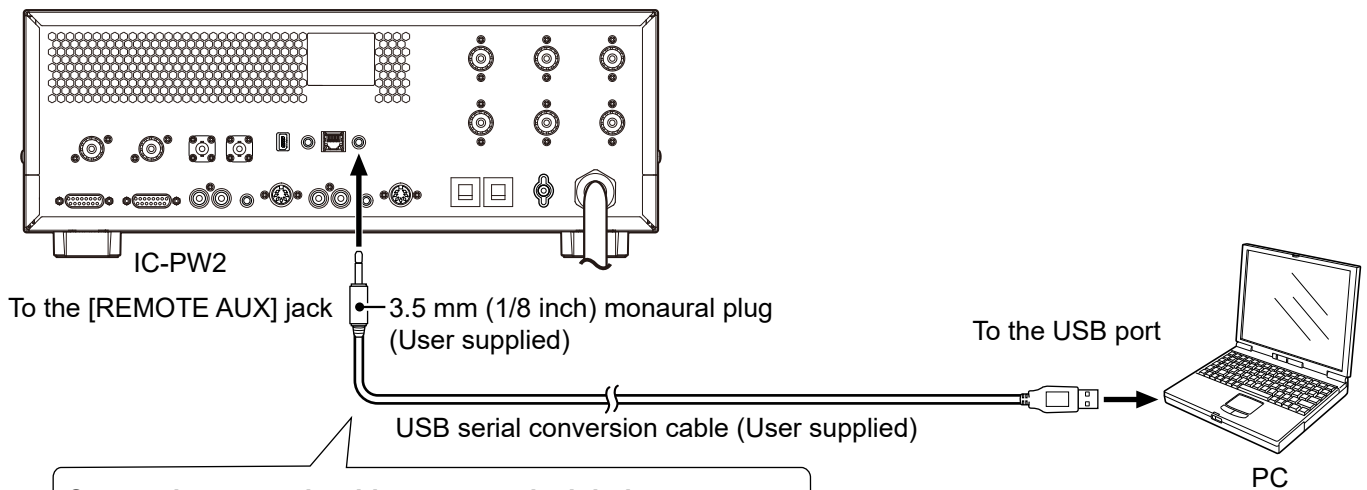
The Icom Communications Interface V (CI-V) controls the amplifier.

- ① Make the connection as short as possible. The amplifier may not be recognized by the PC, depending on the USB cable length.
- ① The values that can be set with each command differ, depending on the linear amplifier version.
See the amplifier's instruction manual for details.

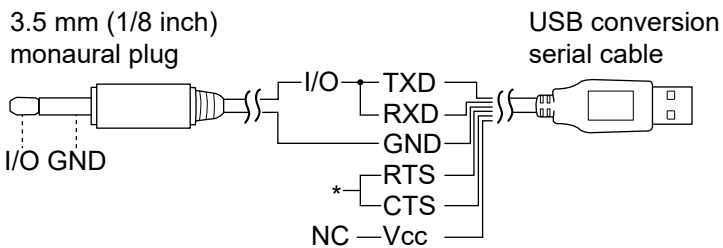
NOTE: To connect a device that remotely controls the amplifier, such as a PC, connect a USB serial conversion cable (User supplied) to the [REMOTE AUX] jack, as shown below.

① The [REMOTE 1]/[REMOTE 2] jacks are for connecting to an Icom exciter.

① See the USB serial conversion cable manual for downloading and installing the USB driver.



Connection example with a monaural mini-plug



* Connect RTS to CTS because communication is performed without flow control.

REMOTE CONTROL

Remote control (CI-V) information

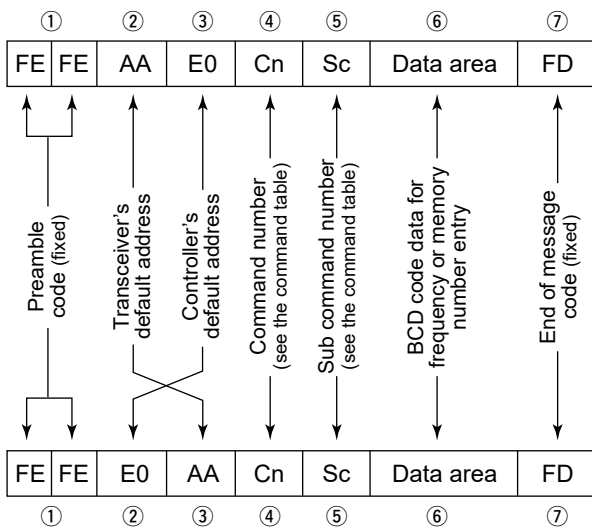
◇ Preparing

The Icom Communications Interface V (CI-V) is used for remote control. To control the linear amplifier, first set its address, data communication speed, and transceive function. These settings are set in the Set mode (Refer to the IC-PW2 instruction manual).

◇ About the data format

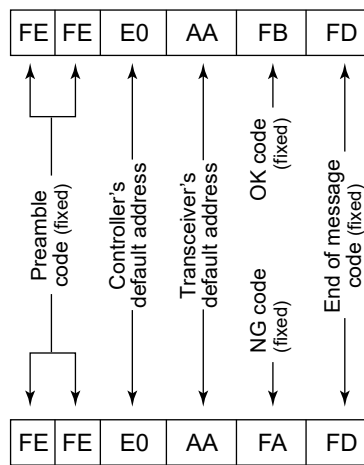
The CI-V system can be written using the following data formats. Data formats differ according to command numbers. A data area or sub command is added for some commands.

Controller (PC) to IC-PW2



IC-PW2 to controller (PC)

OK message to controller (PC)



NG message to controller (PC)

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

Cmd.	Sub cmd.	Data	Description	
00*1		See p. 8.	Set the frequency data of the TX/RX (Lights orange) side RF input connector ① The frequency data is output from the exciter connected to the TX/RX (Lights orange) side RF input connector to [REMOTE AUX]. ② The frequency of the linear amplifier cannot be set from the PC connected to [REMOTE AUX].	
03*1,2		See p. 8.	Read the frequency data for the TX/RX (Lights orange) side RF input connector ① The frequency data of the exciter connected to the TX/RX (Lights orange) side RF input connector will be sent from [REMOTE AUX].	
15*2	11	0000 ~ 0255	Read the Po meter level (0000=0W ~ 0161=500W ~ 0201=1kW)	
	12	0000 ~ 0255	Read SWR meter level (0000=SWR1.0, 0040=SWR1.5, 0080=SWR2.0, 0120=SWR3.0)	
	13	0000 ~ 0255	Read ALC meter level (0000=Minimum ~ 0120=Maximum)	
	15	0000 ~ 0255	Read Vd meter level (0000=0V ~ 0120=30V ~ 0241=60V)	
	16	0000 ~ 0255	Read Id meter level (0000=0A, 0048=10A, 0096=20A, 0144=30A, 0193=40A, 0241=50A)	
16*	50	00/01	Send/read the Lock function (00=OFF, 01=ON)	
18	00		Turn OFF the linear amplifier ① When 13.8 V DC is supplied from [ACC 1] or [ACC 2], the linear amplifier operates as an antenna selector.	
	01*3		Turn ON the linear amplifier	
19*2	00		Read the linear amplifier ID	
1A	00*	00/01	Set the RF input connector (00=[INPUT 1], 01=[INPUT 2])	
	01*	00/01	When 2 Icom exciters are connected to [INPUT 1] and [INPUT 2], set the RX side RF input connector's operation (00=OFF (No operation is performed), 01=ON (RX only))	
	02*2	See p. 8.	Read the operating frequency	
	03*	See p. 8.	Set the frequency band data	
	04*	See p. 8.	Set the automatic frequency band switching operation	
	05*	SET > Function		
		00 01	00 ~ 03	Send/read the Beep Level setting (00=Minimum ~ 03=Maximum)
	00 02	00/01	Send/read the Beep (Confirmation) setting (00=OFF, 01=ON)	
	00 03	00/01	Send/read the Keyboard Type setting (00=Ten-key, 01=Full Keyboard)	

Cmd.	Sub cmd.	Data	Description	
1A	05*	00 04	00 ~ 02	Send/read the Full Keyboard Layout setting (00=English, 01=German, 02=French)
		00 05	00/01	Send/read the Screen Capture [POWER] Switch setting (00=OFF, 01=ON)
		00 06	00/01	Send/read the Screen Capture File Type setting (00=PNG, 01=BMP)
	SET > Connectors			
		00 07	00 ~ 03	Selected BAND Output (BAND1) > Send/read the Output Type setting (00=INPUT1, 01=INPUT2, 02=TX Side, 03=RX Side)
		00 08	00/01	Selected BAND Output (BAND1) > Send/read the Output Level setting (00=ON: Low, OFF: Open, 01*=ON: 12V, OFF: Low) * When the linear amplifier is in the Antenna Selector mode, 01 will be "ON: Open, OFF: Low." ① "ON" indicates the terminal status of the band in operation, and "OFF" indicates the terminal status of the band that is not in operation.
		00 09	00 ~ 03	Selected BAND Output (BAND2) > Send/read the Output Type setting (00=INPUT1, 01=INPUT2, 02=TX Side, 03=RX Side)
		00 10	00/01	Selected BAND Output (BAND2) > Send/read the Output Level setting (00=ON: Low, OFF: Open, 01*=ON: 12V, OFF: Low) * When the linear amplifier is in the Antenna Selector mode, 01 will be "ON: Open, OFF: Low." ① "ON" indicates the terminal status of the band in operation, and "OFF" indicates the terminal status of the band that is not in operation.
		00 11	00 ~ 02	CI-V > Send/read the REMOTE AUX CI-V Output Select setting (00=INPUT1, 01=INPUT2, 02=INPUT1/2)
		00 12	00/01	CI-V > Send/read the REMOTE AUX CI-V Transceive setting (00=OFF, 01=ON)
		00 13	00/01	CI-V > Send/read the REMOTE AUX CI-V Output (for ANT) setting (00=OFF, 01=ON)
		00 14	00 ~ 03	Send/read the INPUT1/2 Selection Input setting (00=INPUT1:(1) Low, (2) Open INPUT2:(1) Open, (2) Low 01=INPUT1:(1) Open, (2) Low INPUT2:(1) Low, (2) Open 02=INPUT1:(1) Low INPUT2:(1) Open 03=INPUT1:(1) Open INPUT2:(1) Low

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

Cmd.	Sub cmd.	Data	Description	
1A	05*	SET > Display		
		00 15	0000 ~ 0255 Send/read the LCD Backlight setting (0000=0% ~ 0255=100%)	
		00 16	0000 ~ 0255 Send/read the LCD Bright setting (0000=0% ~ 0255=100%)	
		00 17	00 ~ 02 Send/read the Meter Response setting (00=Slow, 01=Mid, 02=Fast)	
		00 18	00/01 Send/read the Meter Peak Hold setting (00=OFF, 01=ON)	
		00 19	00 ~ 03 Send/read the Screen Saver setting (00=OFF, 01=15min, 02=30min, 03=60min)	
		00 20	00/01 Send/read the Opening Message setting (00=OFF, 01=ON)	
		00 21	See p. 8. Send/read the My Call setting	
		00 22	00/01 Send/read the Temperature setting (00=°C, 01=°F)	
		00 23	00/01 Send/read the Display Language setting (00=English, 01=Japanese)	
		00 24	00/01 Send/read the System Language setting (00=English, 01=Japanese)	
	SET > Time Set			
	00 25	20200101 ~ 20991231 Date/Time > Send/read the Date setting (20200101=2020/1/1 ~ 20991231=2099/12/31)		
	00 26	0000 ~ 2359 Date/Time > Send/read the Time setting (0000=00:00 ~ 2359=23:59)		
	00 27	00/01 Date/Time > Send/read the NTP Function setting (00=OFF, 01=ON)		
	00 28	See p. 8. Date/Time > Send/read the NTP Server Address setting (Up to 64 characters)		
	00 29	See p. 9. Send/read the UTC Offset setting		
	00 30	00/01 Send/read the CLOCK2 function setting (00=OFF, 01=ON)		
	00 31	See p. 9. Send/read the CLOCK2 UTC Offset setting		
	00 32	See p. 8. Send/read the CLOCK2 Name setting		
	ANT			
	00 33	00 ~ 05 Send/read the Antenna Memory (1.8 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)		
	00 34	00 ~ 05 Send/read the Antenna Memory (3.5 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)		

Cmd.	Sub cmd.	Data	Description
1A	05*	00 35	00 ~ 05 Send/read the Antenna Memory (7 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)
		00 36	00 ~ 05 Send/read the Antenna Memory (10 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)
		00 37	00 ~ 05 Send/read the Antenna Memory (14 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)
		00 38	00 ~ 05 Send/read the Antenna Memory (18 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)
		00 39	00 ~ 05 Send/read the Antenna Memory (21 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)
		00 40	00 ~ 05 Send/read the Antenna Memory (24 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)
		00 41	00 ~ 05 Send/read the Antenna Memory (28 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)
		00 42	00 ~ 05 Send/read the Antenna Memory (50 MHz) setting (00=ANT1, 01=ANT2, 02=ANT3, 03=ANT4, 04=ANT5, 05=ANT6)
		00 43	00/01 Send/read the Temporary Memory setting (00=OFF, 01=ON)
		00 44	00/01 Send/read the RX-I/O Usable Band (1.8 MHz) setting (00=OFF, 01=ON)
		00 45	00/01 Send/read the RX-I/O Usable Band (3.5 MHz) setting (00=OFF, 01=ON)
		00 46	00/01 Send/read the RX-I/O Usable Band (7 MHz) setting (00=OFF, 01=ON)
		00 47	00/01 Send/read the RX-I/O Usable Band (10 MHz) setting (00=OFF, 01=ON)
		00 48	00/01 Send/read the RX-I/O Usable Band (14 MHz) setting (00=OFF, 01=ON)
		00 49	00/01 Send/read the RX-I/O Usable Band (18 MHz) setting (00=OFF, 01=ON)
		00 50	00/01 Send/read the RX-I/O Usable Band (21 MHz) setting (00=OFF, 01=ON)
		00 51	00/01 Send/read the RX-I/O Usable Band (24 MHz) setting (00=OFF, 01=ON)
		00 52	00/01 Send/read the RX-I/O Usable Band (28 MHz) setting (00=OFF, 01=ON)

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

Cmd.	Sub cmd.	Data	Description
1A	05*	00 53 00/01	Send/read the RX-I/O Usable Band (50 MHz) setting (00=OFF, 01=ON)
		00 54 00/01	Send/read the [ANT] Switch (Short Push) setting (00=Displays the ANTENNA SELECT (INPUT1/INPUT2) screen, 01=Change the antenna connector sequentially between ANT 1 and ANT 6)
		00 55 00 ~ 06	Send/read the [ANT] Switch (Hold Down) setting (00=OFF, 01=ANT1, 02=ANT2, 03=ANT3, 04=ANT4, 05=ANT5, 06=ANT6)
		00 56 00/01	Send/read the Antenna Popup setting (00=OFF, 01=ON)
		00 57 00/01	Send/read the RX Side ANT in the Same Band TX setting (00=OFF (Disconnect the RX side antenna), 01=ON (The RX side antenna is not disconnected))
		00 58 00/01	Send/read the ANT1 Connector setting (00=OFF, 01=ON)
		00 59 See p. 8.	Send/read the ANT1 Name setting (Up to 16 characters)
		00 60 00 ~ 11	Send/read the ANT1 Icon setting (00=No Icon, 01=Yagi 1, 02=Yagi 2, 03=Vertical 1, 04=Vertical 2, 05=Dipole 1, 06=Dipole 2, 07= Wire Dipole 1, 08=Wire Dipole 2, 09=Wire, 10=Quad, 11=Dummy Load)
		00 61 00/01	Send/read the ANT2 Connector setting (00=OFF, 01=ON)
		00 62 See p. 8.	Send/read the ANT2 Name setting (Up to 16 characters)
		00 63 00 ~ 11	Send/read the ANT2 Icon setting (00=No Icon, 01=Yagi 1, 02=Yagi 2, 03=Vertical 1, 04=Vertical 2, 05=Dipole 1, 06=Dipole 2, 07= Wire Dipole 1, 08=Wire Dipole 2, 09=Wire, 10=Quad, 11=Dummy Load)
		00 64 00/01	Send/read the ANT3 Connector setting (00=OFF, 01=ON)
		00 65 See p. 8.	Send/read the ANT3 Name setting (Up to 16 characters)
		00 66 00 ~ 11	Send/read the ANT3 Icon setting (00=No Icon, 01=Yagi 1, 02=Yagi 2, 03=Vertical 1, 04=Vertical 2, 05=Dipole 1, 06=Dipole 2, 07= Wire Dipole 1, 08=Wire Dipole 2, 09=Wire, 10=Quad, 11=Dummy Load)
		00 67 00/01	Send/read the ANT4 Connector setting (00=OFF, 01=ON)

Cmd.	Sub cmd.	Data	Description		
1A	05*	00 68 See p. 8.	Send/read the ANT4 Name setting (Up to 16 characters)		
		00 69 00 ~ 11	Send/read the ANT4 Icon setting (00=No Icon, 01=Yagi 1, 02=Yagi 2, 03=Vertical 1, 04=Vertical 2, 05=Dipole 1, 06=Dipole 2, 07= Wire Dipole 1, 08=Wire Dipole 2, 09=Wire, 10=Quad, 11=Dummy Load)		
		00 70 00/01	Send/read the ANT5 Connector setting (00=OFF, 01=ON)		
		00 71 See p. 8.	Send/read the ANT5 Name setting (Up to 16 characters)		
		00 72 00 ~ 11	Send/read the ANT5 Icon setting (00=No Icon, 01=Yagi 1, 02=Yagi 2, 03=Vertical 1, 04=Vertical 2, 05=Dipole 1, 06=Dipole 2, 07= Wire Dipole 1, 08=Wire Dipole 2, 09=Wire, 10=Quad, 11=Dummy Load)		
		00 73 00/01	Send/read the ANT6 Connector setting (00=OFF, 01=ON)		
		00 74 See p. 8.	Send/read the ANT6 Name setting (Up to 16 characters)		
		00 75 00 ~ 11	Send/read the ANT6 Icon setting (00=No Icon, 01=Yagi 1, 02=Yagi 2, 03=Vertical 1, 04=Vertical 2, 05=Dipole 1, 06=Dipole 2, 07= Wire Dipole 1, 08=Wire Dipole 2, 09=Wire, 10=Quad, 11=Dummy Load)		
		Exciter			
		00 76 00 ~ 03	Send/read the Exciter Connection setting (00=Connect Only INPUT1, 01=Connect Only INPUT2, 02=Connect Two Exciters to INPUT1 & 2, 03=Connect an Exciter to INPUT1 & 2)		
		00 77 00/01	Send/read the INPUT1/2 Displayed Layout setting (00=INPUT1/INPUT2, 01=INPUT2/INPUT1)		
		00 78 00 ~ 03	INPUT1 > Send/read the CI-V Baud Rate setting (00=4800, 01=9600, 02=19200, 03=Auto)		
		00 79 0002 ~ 0223	INPUT1 > Send/read the CI-V Address setting (0002=02h ~ 0223=DFh)		
		00 80 00 ~ 03	INPUT2 > Send/read the CI-V Baud Rate setting (00=4800, 01=9600, 02=19200, 03=Auto)		
		00 81 0002 ~ 0223	INPUT2 > Send/read the CI-V Address setting (0002=02h ~ 0223=DFh)		
00 82 00/01	Send/Read the Power ON/OFF Control (Link to Exciter) setting (00=OFF, 01=ON)				

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

Cmd.	Sub cmd.	Data	Description
1A	06*	See p. 9.	Send/read the Antenna Switching setting
	07*	See p. 9.	Temporarily switch to the antenna connector set in "[ANT] Switch (Hold Down)"
	08*	00/01	Send/read the RX-I/O setting (00=OFF, 01=ON)
	09*	00/01	Send/read the AMP setting (00=OFF, 01=ON)
	0A*	00/01	Send/read the Max Power setting (00=500 W, 01=1 kW) ① This command can be set when the amplifier is connected to a 180 ~ 264 V AC power source.
	0B* ²	00/01	Read the interlocking state of the Icom exciter's DPD function (00=OFF (Including when the DPD function is working alone in the exciter), 01=ON (The DPD function is interlocked with the amplifier))
	0C* ²	00 ~ 05	Read the Protection function (00=No protection, 01=TEMP, 02=ALC, 03=POWER, 04=BAND, 05=POWER SUPPLY)
	0D		Deactivate the protection
	0E* ²	See p. 9.	Read the Temperature information
	0F* ²	0000 ~ 0099	Read the Humidity information (0000=0% ~ 0099=99%)
	10*	00/01	Send/read the NTP Update (00=Stop, 01=Start)
11* ²	00 ~ 02	Read the NTP Result (00=Updating or not updated after the amplifier is turned ON, 01=Update successful, 02=Update failed)	
1C	00* ²	00/01	Read the TX status setting (00=OFF (Receiving), 01=ON (Transmitting)) ① When a command is sent from the PC connected to [REMOTE AUX], "NG (FA)" is sent. ② When the value of the 1C 00 command is changed, the TX status is output to the PC.
	01*	00 ~ 02	Send/read the Tuner setting (00=OFF, 01=ON, 02=Tune)
	03* ^{1,2}	See p. 8.	Read the transmit frequency ① When "REMOTE AUX CI-V Output (for ANT)" (Command: 1C 04) is set to "ON," the transmit frequency is automatically output from the exciter connected to the TX/RX side RF input connector to [REMOTE AUX] when the frequency is changed.
	04*	00/01	SET > Connectors > CI-V Send/read the REMOTE AUX CI-V Output (for ANT) setting (00=OFF, 01=ON)

*(Asterisk) Send/read data

*¹ The transmit frequency sent from the exciter connected to the TX/RX side RF input connector is output to the [REMOTE AUX] jack.

*² The following commands cannot be sent:

03, 15, 19 00, 1A 02, 1A 0B, 1A 0C, 1A 0E, 1A 0F, 1A 11, 1C 00, 1C 03

*³ The power ON command (18 01) works when the linear amplifier is turned OFF, including in the Antenna Selector mode.

When the amplifier is not connected to an AC power source, the command does not work.

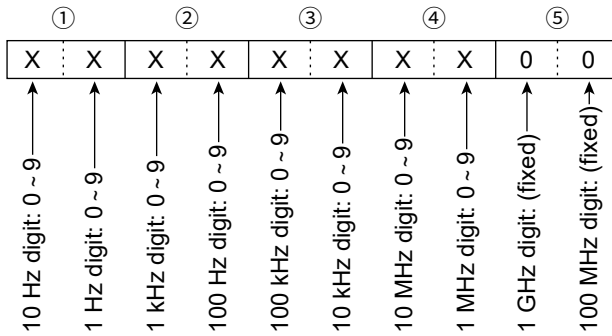
REMOTE CONTROL

Remote control (CI-V) information

◇ Command formats

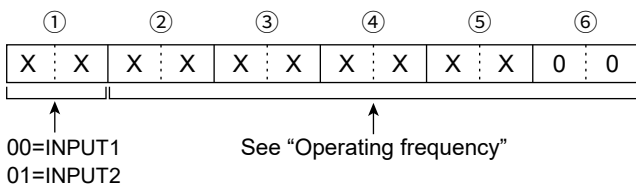
• Operating frequency

Command: 00, 03, 1C 03



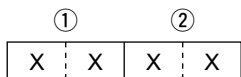
• Reading the operating frequency

Command: 1A 02



• Frequency band data

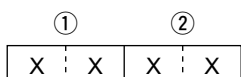
Command: 1A 03



①RF input connector	②Frequency band (MHz)	
00:INPUT1	00:1.8	05:18
01:INPUT2	01:3.5	06:21
	02:7	07:24
	03:10	08:28
	04:14	09:50

• Automatic frequency band switching operation

Command: 1A 04



①RF input connector	②AUTO (Band)
00:INPUT1	00:OFF
01:INPUT2	01:ON

• Codes for character entries

Command: 1A 05 0021, 0028, 0032, 0059, 0062, 0065, 0068, 0071, 0074

- Character codes— Letters and Numbers

Character	ASCII code	Character	ASCII code
A ~ Z	41 ~ 5A	a ~ z	61 ~ 7A
0 ~ 9	30 ~ 39		

- Character codes— Symbols

Character	ASCII code	Character	ASCII code
!	21	#	23
\$	24	%	25
&	26	\	5C
?	3F	"	22
'	27	`	60
^	5E	+	2B
-	2D	*	2A
/	2F	.	2E
,	2C	:	3A
;	3B	=	3D
<	3C	>	3E
(28)	29
[5B]	5D
{	7B	}	7D
	7C	_	5F
~	7E	@	40
		Space	20

Cmd.	Sub cmd.	Set item/selectable characters
1A	05	00 21 My Call setting A ~ Z, 0 ~ 9, (space), / @ - .
		00 28 NTP Server Address setting A ~ Z, a ~ z, 0 ~ 9, ., -
		00 32 CLOCK2 Name setting*
		00 59 ANT1 Name setting*
		00 62 ANT2 Name setting*
		00 65 ANT3 Name setting*
		00 68 ANT4 Name setting*
		00 71 ANT5 Name setting*
		00 74 ANT6 Name setting*

* Usable characters: A to Z, a to z, 0 to 9, (space), ! " # \$ % & ' () * +, - . / : ; < = > ? @ [\] ^ _ ` { | } ~

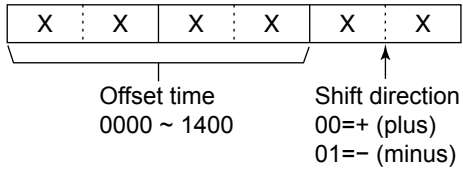
REMOTE CONTROL

Remote control (CI-V) information

◇ Command formats

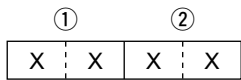
• **UTC Offset setting**

Command: 1A 05 0029, 1A 05 0031



• **Antenna Switching setting**

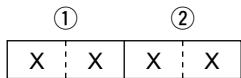
Command: 1A 06



①RF input connector	②Antenna number	
00:INPUT1	00:ANT1	03:ANT4
01:INPUT2	01:ANT2	04:ANT5
	02:ANT3	05:ANT6

• **Temporarily switch to the antenna connector set in “[ANT] Switch (Hold Down)”**

Command: 1A 07



①RF input connector	②Temporarily Switching the antenna connector
00:INPUT1	00:OFF
01:INPUT2	01:ON

• **TEMPERATURE information**

Command: 1A 0E

