



CI-V REFERENCE GUIDE

HF/VHF/UHF ALL MODE
TRANSCEIVER

IC-705

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REMOTE CONTROL

Remote control (CI-V) information

◆CI-V connection

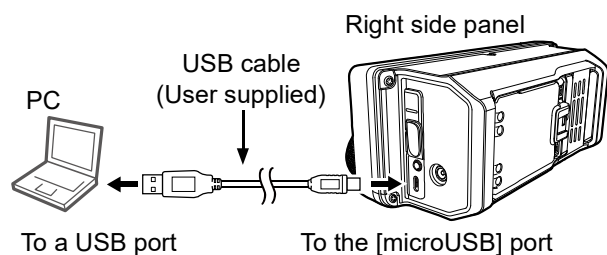
The transceiver's operating frequency, mode, VFO and memory selection, can be remotely controlled using a PC.

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

Connect the transceiver to a PC with a USB cable (User supplied).

① Make the connection as short as possible. The transceiver may not be recognized by the controller, depending on the USB cable length.

② When connecting to a USB port on your PC with the USB driver installed, USB (A) and USB (B) are named as "IC-705 Serial Port A (CI-V)" and "IC-705 Serial Port B."



The required USB driver and driver installation guide can be downloaded from the Icom web site. Go to "<https://www.icomjapan.com/support/>," and then click "Firmware / Software."

① The download procedure on the web page may be changed without notice.

◆Preparing

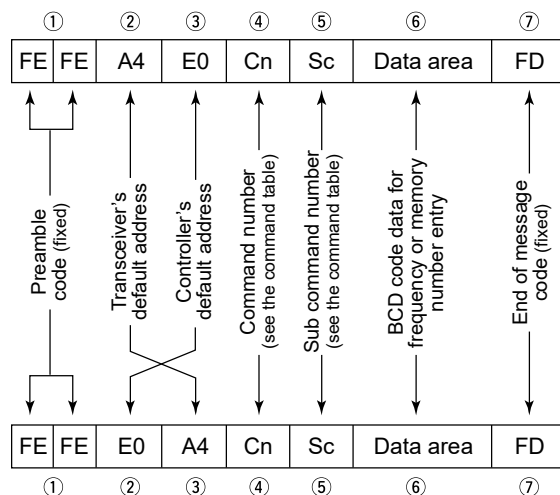
The Icom Communications Interface V (CI-V) is used for remote control.

To control the transceiver, first set its address, data communication speed, and transceive function. These settings are set in the Set mode (Refer to the IC-705 instruction manual).

◆About the data format

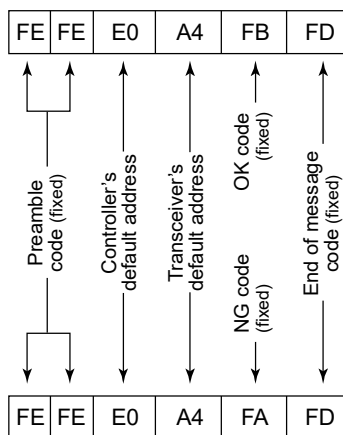
The CI-V system can be written using the following data formats. Data formats differ according to command numbers. A data area or sub command is added for some commands.

Controller to IC-705



IC-705 to controller

OK message to controller



NG message to controller

Remote control (CI-V) information

◆ Command table

| Cmd. | Sub cmd. | Data | Description |
|------------------|-------------------------------|-------------|--|
| 00 | | See p. 16. | Send the frequency data (transceive) |
| 01 | | See p. 16. | Send the mode data (transceive) |
| 02* ¹ | | See p. 16. | Read the band edge frequencies |
| 03* ¹ | | See p. 16. | Read the operating frequency |
| 04* ¹ | | See p. 16. | Read the operating mode |
| 05* ² | | See p. 16. | Set the operating frequency |
| 06* ² | | See p. 16. | Set the operating mode |
| 07 | | | Select the VFO mode |
| | 00 | | Select VFO A |
| | 01 | | Select VFO B |
| | A0 | | Equalize VFO A and VFO B ① When the split frequency operation is OFF in the Memory mode or the Call channel mode, "FA" (NG) is returned. |
| | B0 | | Exchange VFO A and VFO B. ① When the split frequency operation is OFF in the Memory mode or the Call channel mode, "FA" (NG) is returned. |
| 08* ² | | | Select the Memory mode |
| | | 0000 ~ 0099 | Select the Memory channel (Memory channel: 0000 ~ 0099 Call channel: 0000 (144C1), 0001 (144C2), 0002 (430C1), 0003 (430C2)) |
| | A0 | 0000 ~ 0100 | Select the Memory group (Memory channel group: 0000 ~ 0099 Call channel group: 0100) |
| 09 | | | Memory write |
| 0A | | | Memory copy to VFO |
| 0B | | | Memory clear |
| 0C* ¹ | | See p. 16. | Read frequency offset |
| 0D* ² | | See p. 16. | Send frequency offset |
| 0E | 00 | | Cancel the scan |
| | 01 | | Start a Programmed/memory scan |
| | 02 | | Start a Programmed scan |
| | 03 | | Start a Δ F scan |
| | 12 | | Start a Fine programmed scan |
| | 13 | | Start a Fine Δ F scan |
| | 22 | | Start a Memory scan |
| | 23 | | Start a Select memory scan |
| | 24 | | Start a Mode Select scan |
| | Ax* ² (x=1 ~ 7) | | Select Δ F scan span (x=1 (\pm 5kHz), x=2 (\pm 10kHz), x=3 (\pm 20kHz), x=4 (\pm 50kHz), x=5 (\pm 100kHz), x=6 (\pm 500kHz), x=7 (\pm 1MHz)) |
| | B0* ² | | Clear the Select channel setting |

| Cmd. | Sub cmd. | Data | Description |
|------|------------------|------------------|--|
| 0E | B1* ² | | Set as select channel ① The previously set number by CI-V is set after turning power ON, or "1" is selected if no selection is performed. |
| | | 01 ~ 03 | Set the channel as a Select channel (01=SEL1, 02=SEL2, 03=SEL3) |
| | B2* ² | 00 ~ 03 | Set the Select memory scan channel (00=ALL, 01=SEL1, 02=SEL2, 03=SEL3) |
| | D0* ² | | Set Scan resume OFF |
| | D3* ² | | Set Scan resume ON (Close&Delay) |
| 0F | | 00* ¹ | Read Split OFF setting |
| | | 01* ¹ | Read Split ON setting |
| | | 11* ¹ | Read DUP- operation |
| | | 12* ¹ | Read DUP+ operation |
| | | 00* ² | Set Split function OFF |
| | | 01* ² | Set Split function ON |
| | | 10* ² | Set the simplex operation |
| | | 11* ² | Set DUP- operation |
| | | 12* ² | Set DUP+ operation |
| | 10* | 00 ~ 13 | Send/read the tuning step (00=OFF (10Hz or 1Hz) 01=100Hz 02=500Hz 03=1kHz 04=5kHz 05=6.25kHz 06=8.33kHz 07=9kHz 08=10kHz 09=12.5kHz 10=20kHz 11=25kHz 12=50kHz 13=100kHz) |
| 11* | | 00 | Send/read attenuator OFF setting |
| | | 20 | Send/read 20 dB attenuator setting ① You can set in the HF and 50 MHz bands. |
| 13 | 00 | | Speech all data by voice synthesizer (S meter level, frequency, and mode) |
| | 01 | | Speech the operating frequency and S meter level by voice synthesizer |
| | 02 | | Speech the operating mode by voice synthesizer ① The mode is announced after the ongoing speech. |
| 14* | 01 | 0000 ~ 0255 | Send/read the AF level (0000=Minimum ~ 0255=Maximum) |
| | 02 | 0000 ~ 0255 | Send/read the RF gain level (0000=Minimum ~ 0255=Maximum) |
| | 03 | 0000 ~ 0255 | Send/read the squelch level (0000=Minimum ~ 0255=Maximum) |
| | 06 | 0000 ~ 0255 | Send/read the NR level (0000=0% ~ 0255=100%) |
| | 07 | 0000 ~ 0255 | Send/read [TWIN PBT] (PBT1) position (0000=max. Counter Clockwise ~ 0128=center ~ 0255=max. Clockwise) |
| | 08 | 0000 ~ 0255 | Send/read [TWIN PBT] (PBT2) position (0000=max. Counter Clockwise ~ 0128=center ~ 0255=max. Clockwise) |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------------------|----------|-------------|--|
| 14* | 09 | 0000 ~ 0255 | Send/read CW pitch (5 Hz steps) (0000=300 Hz ~ 0128=600 Hz ~ 0255=900 Hz) |
| | 0A | 0000 ~ 0255 | Send/read the selected band's RF power (0000=Minimum ~ 0255=Maximum) |
| | 0B | 0000 ~ 0255 | Send/read MIC gain (0000=Minimum ~ 0255=Maximum) |
| | 0C | 0000 ~ 0255 | Send/read keying speed (0000=6 WPM ~ 0255=48 WPM) |
| | 0D | 0000 ~ 0255 | Send/read Notch filter setting (0000=max. Counter Clockwise ~ 0128=center ~ 0255=max. Clockwise) |
| | 0E | 0000 ~ 0255 | Send/read the COMP level (0000=0 ~ 0255=10) |
| | 0F | 0000 ~ 0255 | Send/read the Break-IN Delay setting (0000=2.0d ~ 0255=13.0d) |
| | 12 | 0000 ~ 0255 | Send/read NB level (0000=0% ~ 0255=100%) |
| | 15 | 0000 ~ 0255 | Send/read Monitor audio [MONI] level (0000=0% ~ 0255=100%) |
| | 16 | 0000 ~ 0255 | Send/read the VOX gain (0000=0% ~ 0255=100%) |
| | 17 | 0000 ~ 0255 | Send/read the Anti VOX gain (0000=0% ~ 0255=100%) |
| | 19 | 0000 ~ 0255 | Send/read LCD backlight brightness (0000=0% ~ 0255=100%) |
| 15* ¹ | 01 | 00/01 | Read noise or S-meter squelch status (00=Close, 01=Open) |
| | 02 | 0000 ~ 0255 | Read S-meter level (0000=S0, 0120=S9, 0241=S9+60 dB) |
| | 05 | 00/01 | Read various squelch (tone squelch, and so on) status (00=Close, 01=Open) |
| | 07 | 00/01 | Read the OVF status (00=OVF indicator is OFF, 01=OVF indicator is ON) |
| | 11 | 0000 ~ 0255 | Read the Po meter level (0000=0% ~ 0143=50% ~ 0213=100%) |
| | 12 | 0000 ~ 0255 | Read SWR meter level (0000=SWR1.0, 0048=SWR1.5, 0080=SWR2.0, 0120=SWR3.0) |
| | 13 | 0000 ~ 0255 | Read ALC meter level (0000=Minimum ~ 0120=Maximum) |
| | 14 | 0000 ~ 0255 | Read COMP meter level (0000=0 dB ~ 0130=15 dB ~ 0210=25.5 dB) |
| | 15 | 0000 ~ 0255 | Read Vd meter level (0000=0 V ~ 0075=5 V ~ 0241=16 V) |
| 16* | 02 | 00 ~ 02 | Send/read the Preamp (00=OFF, 01=P.AMP1, 02=P.AMP2) (In the 144 or 430 MHz bands, 00=OFF, 01=ON) |
| | 12 | 01 ~ 03 | Send/read the AGC time constant (01=FAST, 02=MID, 03=SLOW) |

| Cmd. | Sub cmd. | Data | Description |
|------|------------------|------------------|---|
| 16* | 22 | 00/01 | Send/read the Noise blanker (00=OFF, 01=ON) |
| | 40 | 00/01 | Send/read the Noise reduction (00=OFF, 01=ON) |
| | 41 | 00/01 | Send/read the Auto Notch function (00=OFF, 01=ON) |
| | 42 | 00/01 | Send/read the Repeater tone (00=OFF, 01=ON) |
| | 43 | 00/01 | Send/read the Tone squelch (00=OFF, 01=ON) |
| | 44 | 00/01 | Send/read the Speech compressor (00=OFF, 01=ON) |
| | 45 | 00/01 | Send/read the Monitor [MONI] function (00=OFF, 01=ON) |
| | 46 | 00/01 | Send/read the VOX function (00=OFF, 01=ON) |
| | 47 | 00 ~ 02 | Send/read the BK-IN function (00=BK-IN OFF, 01=Semi BK-IN ON, 02=Full BK-IN ON) |
| | 48 | 00/01 | Send/read the Manual Notch function (00=OFF, 01=ON) |
| | 4B | 00/01 | Send/read the DTCS function (00=OFF, 01=ON) |
| | 4F | 00/01 | Send/read the Twin peak filter (00=OFF, 01=ON) (Can be turned ON only when Mark and Shift are set to 2125 Hz and 170 Hz, respectively) |
| | 50 | 00/01 | Send/read the Dial lock function (00=OFF, 01=ON) |
| | 56 | 00/01 | Send/read DSP IF filter type in the operating band (00=SHARP, 01=SOFT) |
| | 57 | 00 ~ 02 | Send/read the Manual Notch width (00=WIDE, 01=MID, 02=NAR) |
| | 58 | 00 ~ 02 | Send/read SSB transmit bandwidth (00=WIDE, 01=MID, 02=NAR) (One of following values is applied, depending on the "COMP" status (ON or OFF): WIDE (Command: 1A 05 0017), MID (Command: 1A 05 0018), or NAR (Command: 1A 05 0019)) |
| | 5B | 00 ~ 02 | Send/read the DSQL (Digital Call Sign squelch)/CSQL (Digital Code squelch) setting (DV mode only) (00=OFF, 01=DSQL, 02=CSQL) |
| | 5C | 00 ~ 02 | Send/read the GPS TX mode (00=OFF, 01=D-PRS, 02=NMEA) |
| | 5D | 00 ~ 03, 06 ~ 09 | Send/read the Tone squelch function (00=OFF, 01=TONE, 02=TSQL, 03=DTCS, 06=DTCS (T), 07=TONE (T)/DTCS (R), 08=DTCS (T)/TSQL (R), 09=TONE (T)/TSQL (R)) |
| | 17* ³ | See p. 16. | Send CW messages |
| 18 | 00 | | Turn OFF the transceiver |
| | 01* ⁴ | | Turn ON the transceiver |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|----------------------------------|---|
| 19*1 | 00 | | Read the transceiver ID |
| 1A* | 00 | See pp. 17 and 18. | Send/read memory contents |
| | 01 | See p. 18. | Send/read band stacking register contents |
| | 02*5 | See p. 19. | Send/read memory keyer contents |
| | 03 | See p. 19. | Send/read the selected IF filter width |
| | 04 | See p. 19. | Send/read the selected AGC time constant |
| | 05 | SET > Tone Control/TBW | |
| | 0001 | See p. 19. | RX > SSB > Send/read RX HPF/LPF settings |
| | 0002 | 00 ~ 10 | RX > SSB > Send/read RX Tone (Bass) level (00=-5 ~ 10=+5) |
| | 0003 | 00 ~ 10 | RX > SSB > Send/read RX Tone (Treble) level (00=-5 ~ 10=+5) |
| | 0004 | See p. 19. | RX > AM > Send/read RX HPF/LPF settings |
| | 0005 | 00 ~ 10 | RX > AM > Send/read RX Tone (Bass) level (00=-5 ~ 10=+5) |
| | 0006 | 00 ~ 10 | RX > AM > Send/read RX Tone (Treble) level (00=-5 ~ 10=+5) |
| | 0007 | See p. 19. | RX > FM > Send/read RX HPF/LPF settings |
| | 0008 | 00 ~ 10 | RX > FM > Send/read RX Tone (Bass) level (00=-5 ~ 10=+5) |
| | 0009 | 00 ~ 10 | RX > FM > Send/read RX Tone (Treble) level (00=-5 ~ 10=+5) |
| | 0010 | See p. 19. | RX > DV > Send/read RX HPF/LPF settings |
| | 0011 | 00 ~ 10 | RX > DV > Send/read RX Tone (Bass) level (00=-5 ~ 10=+5) |
| | 0012 | 00 ~ 10 | RX > DV > Send/read RX Tone (Treble) level (00=-5 ~ 10=+5) |
| | 0013 | 00 ~ 10 | RX > WFM > Send/read RX Tone (Bass) level (00=-5 ~ 10=+5) |
| | 0014 | 00 ~ 10 | RX > WFM > Send/read RX Tone (Treble) level (00=-5 ~ 10=+5) |
| | 0015 | See p. 19. | RX > CW > Send/read RX HPF/LPF settings |
| | 0016 | See p. 19. | RX > RTTY > Send/read RX HPF/LPF settings |
| | 0017 | 00 ~ 10 | TX > SSB > Send/read TX Tone (Bass) level (00=-5 ~ 10=+5) |
| | 0018 | 00 ~ 10 | TX > SSB > Send/read TX Tone (Treble) level (00=-5 ~ 10=+5) |
| | 0019 | See p. 19. | TX > SSB > Send/read TX bandwidth for wide |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|----------------------------------|--|
| 1A* | 05 | SET > Tone Control/TBW | |
| | 0020 | See p. 19. | TX > SSB > Send/read TX bandwidth for mid |
| | 0021 | See p. 19. | TX > SSB > Send/read TX bandwidth for narrow |
| | 0022 | See p. 19. | TX > SSB-D > Send/read TX bandwidth |
| | 0023 | 00 ~ 10 | TX > AM > Send/read TX Tone (Bass) level (00=-5 ~ 10=+5) |
| | 0024 | 00 ~ 10 | TX > AM > Send/read TX Tone (Treble) level (00=-5 ~ 10=+5) |
| | 0025 | 00 ~ 10 | TX > FM > Send/read TX Tone (Bass) level (00=-5 ~ 10=+5) |
| | 0026 | 00 ~ 10 | TX > FM > Send/read TX Tone (Treble) level (00=-5 ~ 10=+5) |
| | 0027 | 00 ~ 10 | TX > DV > Send/read TX Tone (Bass) level (00=-5 ~ 10=+5) |
| | 0028 | 00 ~ 10 | TX > DV > Send/read TX Tone (Treble) level (00=-5 ~ 10=+5) |
| | | SET > Function | |
| | 0029 | 0000 ~ 0255 | Send/read the Beep Level setting (0000=Minimum ~ 0255=Maximum) |
| | 0030 | 00/01 | Send/read the Beep Level Limit setting (00=OFF, 01=ON) |
| | 0031 | 00/01 | Send/read the Beep (Confirmation) setting (00=OFF, 01=ON) |
| | 0032 | 00/01 | Send/read the Home CH Beep setting (00=OFF, 01=ON) |
| | 0033 | 00 ~ 03 | Send/read the Band Edge Beep setting (00=OFF, 01=ON (Default), 02=ON (User), 03=ON (User) & TX Limit) |
| | 0034 | 00 ~ 04 | Send/read the Auto Power OFF setting (00=OFF, 01=30 min, 02=60 min, 03=90 min, 04=120 min) |
| | 0035 | 00 ~ 03 | Send/read the Power Save setting (00=OFF, 01=Auto (Short), 02=Auto (Middle), 03=Auto (Long)) |
| | 0036 | 00 ~ 03 | Send/read the Max TX Power (Battery Pack) setting (00=0.5 W, 01=1 W, 02=2.5 W, 03=5 W) |
| | 0037 | 00 ~ 04 | Send/read the Max TX Power (DC 13.8V) setting (00=0.5 W, 01=1 W, 02=2.5 W, 03=5 W, 04=10 W) |
| | 0038 | 00 ~ 05 | Send/read the TX Delay (HF) setting (00=OFF, 01=10 ms, 02=15 ms, 03=20 ms, 04=25 ms, 05=30 ms) |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|--------------------------|--|
| 1A* | 05 | SET > Function | |
| | 0039 | 00 ~ 05 | Send/read the TX Delay (50 MHz) setting (00=OFF, 01=10 ms, 02=15 ms, 03=20 ms, 04=25 ms, 05=30 ms) |
| | 0041 | 00 ~ 05 | Send/read the TX Delay (144 MHz) setting (00=OFF, 01=10 ms, 02=15 ms, 03=20 ms, 04=25 ms, 05=30 ms) |
| | 0042 | 00 ~ 05 | Send/read the TX Delay (430 MHz) setting (00=OFF, 01=10 ms, 02=15 ms, 03=20 ms, 04=25 ms, 05=30 ms) |
| | 0043 | 00 ~ 05 | Send/read the Time-Out Timer setting (00=OFF, 01=3 min, 02=5 min, 03=10 min, 04=20 min, 05=30 min) |
| | 0044 | 00/01 | Send/read the PTT Lock setting (00=OFF, 01=ON) |
| | 0045 | 00/01 | SPLIT > Send/read the Quick SPLIT setting (00=OFF, 01=ON) |
| | 0046 | See p. 19. | SPLIT > Send/read the SPLIT Offset setting |
| | 0047 | 00/01 | SPLIT > Send/read the SPLIT LOCK setting (00=OFF, 01=ON) |
| | 0048 | 00/01 | Send/read the Tuner (PTT Start) setting (00=OFF, 01=ON) |
| | 0049 | 00 ~ 02 | Send/read the Auto Repeater setting (00=OFF, 01=ON (DUP), 02=ON (DUP,TONE)) |
| | 0050 | 00 ~ 02 | Send/read the RTTY Mark Frequency setting (00=1275 Hz, 01=1615 Hz, 02=2125 Hz) |
| | 0051 | 00 ~ 02 | Send/read the RTTY Shift Width setting (00=170 Hz, 01=200 Hz, 02=425 Hz) |
| | 0052 | 00/01 | Send/read the RTTY Keying Polarity setting (00=Normal, 01=Reverse) |
| | 0053 | 00/01 | SPEECH > Send/read the SPEECH Language setting (00=Japanese, 01=English) |
| | 0054 | 00/01 | SPEECH > Send/read the Alphabet setting (00=Normal, 01=Phonetic Code) |
| | 0055 | 00/01 | SPEECH > Send/read the SPEECH Speed setting (00=Slow, 01=Fast) |
| | 0056 | 00 ~ 02 | SPEECH > Send/read the RX Call Sign SPEECH setting (00=OFF, 01=ON (Kerchunk), 02=ON (All)) |

| Cmd. | Sub cmd. | Data | Description |
|------|--|--------------------------|---|
| 1A* | 05 | SET > Function | |
| | 0057 | 00/01 | SPEECH > Send/read the RX>CS SPEECH setting (00=OFF, 01=ON) |
| | 0058 | 00/01 | SPEECH > Send/read the MIC Up/Down SPEECH setting (00=OFF, 01=ON) |
| | 0059 | 00/01 | SPEECH > Send/read the S-Level SPEECH setting (00=OFF, 01=ON) |
| | 0060 | 00/01 | SPEECH > Send/read the MODE SPEECH setting (00=OFF, 01=ON) |
| | 0061 | 0000 ~ 0255 | SPEECH > Send/read the SPEECH Level setting (0000=0% ~ 0255=100%) |
| | 0062 | 00/01 | Send/read the [SPEECH/LOCK] Switch setting (00=SPEECH/LOCK, 01=LOCK/SPEECH) |
| | 0063 | 00/01 | Send/read the Lock Function setting (00=MAIN DIAL, 01=PANEL) |
| | 0064 | 00/01 | Send/read the Memo Pad Quantity setting (00=5 ch, 01=10 ch) |
| | 0065 | 00 ~ 02 | Send/read the MAIN DIAL Auto TS setting (00=OFF, 01=Low, 02=High) |
| | 0066 | 00/01 | Send/read the MIC Up/Down Speed setting (00=Slow, 01=Fast) |
| | 0067 | 00 ~ 02 | Send/read the [NOTCH] Switch (SSB) setting (00=Auto, 01=Manual, 02=Auto/Manual) |
| | 0068 | 00 ~ 02 | Send/read the [NOTCH] Switch (AM) setting (00=Auto, 01=Manual, 02=Auto/Manual) |
| | 0069 | 00/01 | Send/read the SSB/CW Synchronous Tuning setting (00=OFF, 01=ON) |
| | 0070 | 00/01 | Send/read the CW Normal Side setting (00=LSB, 01=USB) |
| | 0071 | 00/01 | Send/read the Charging (Power ON) setting (00=OFF, 01=ON) |
| | 0072 | 00/01 | Send/read the USB Power Input (Phone, Tablet, PC) setting (00=OFF, 01=ON) |
| | 0073 | 00/01 | Send/read the Power OFF Setting (for Remote Control) setting (00=Shutdown only, 01=Standby/Shutdown) |
| | SET > Function > Remote MIC Key | | |
| | 0074 | See p. 20. | Send/read the [A] setting |
| | 0075 | See p. 20. | Send/read the [B] setting |
| | 0076 | See p. 20. | Send/read the [△] setting |
| | 0077 | See p. 20. | Send/read the [▽] setting |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|--|---|
| 1A* | 05 | SET > Function > Remote MIC Key | |
| | | 0078 00/01 | Send/read the Mode Select (SSB) setting (00=OFF, 01=ON) |
| | | 0079 00/01 | Send/read the Mode Select (CW) setting (00=OFF, 01=ON) |
| | | 0080 00/01 | Send/read the Mode Select (RTTY) setting (00=OFF, 01=ON) |
| | | 0081 00/01 | Send/read the Mode Select (AM) setting (00=OFF, 01=ON) |
| | | 0082 00/01 | Send/read the Mode Select (FM) setting (00=OFF, 01=ON) |
| | | 0083 00/01 | Send/read the Mode Select (DV) setting (00=OFF, 01=ON) |
| | | 0084 00/01 | Send/read the Mode Select (WFM) setting (00=OFF, 01=ON) |
| | | SET > Function | |
| | | 0085 00/01 | Send/read the Keyboard Type setting (00=Ten-key, 01=Full Keyboard) |
| | | 0086 00 ~ 02 | Send/read the Full Keyboard Layout setting (00=English, 01=German, 02=French) |
| | | 0087 00/01 | Send/read the Screen Capture [POWER] Switch setting (00=OFF, 01=ON) |
| | | 0088 00/01 | Send/read the Screen Capture File Type setting (00=PNG, 01=BMP) |
| | | 0089 0000 ~ 0255 | Send/read the REF Adjust setting (0000=0% ~ 0255=100%) |
| | | SET > DV Set | |
| | | 0090 00 ~ 03 | Send/read the Standby Beep setting (00=OFF, 01=ON, 02=ON (to me:High Tone), 03=ON (to me:Alarm/High Tone)) |
| | | 0091 00 ~ 03 | Send/read the Auto Reply setting (00=OFF, 01=ON, 02=Voice, 03=Position) |
| | | 0092 00/01 | Send/read the DV Data TX setting (00=PTT, 01=Auto) |
| | | 0093 00/01 | DV Fast Data > Send/read the Fast Data setting (00=OFF, 01=ON) |
| | | 0094 00/01 | DV Fast Data > Send/read the GPS Data Speed setting (00=Slow, 01=Fast) |
| | | 0095 00 ~ 10 | DV Fast Data > Send/read the TX Delay (PTT) setting (00=OFF, 01=1sec ~ 10=10sec) |
| | | 0096 00 ~ 02 | Send/read the Digital Monitor setting (00=Auto, 01=Digital, 02=Analog) |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|----------------------------|---|
| 1A* | 05 | SET > DV Set | |
| | | 0097 00/01 | Send/read the Digital Repeater Set setting (00=OFF, 01=ON) |
| | | 0098 00/01 | Send/read the DV Auto Detect setting (00=OFF, 01=ON) |
| | | 0099 00/01 | Send/read the RX Record (RPT) setting (00=ALL, 01=Latest Only) |
| | | 0100 00/01 | Send/read the BK setting (00=OFF, 01=ON) |
| | | 0101 00/01 | Send/read the EMR setting (00=OFF, 01=ON) |
| | | 0102 0000 ~ 0255 | Send/read the EMR AF Level setting (0000=0% ~ 0255=100%) |
| | | SET > QSO/RX Log | |
| | | 0103 00/01 | Send/read the QSO Log setting (00=OFF, 01=ON) |
| | | 0104 00/01 | Send/read the RX History Log setting (00=OFF, 01=ON) |
| | | 0105 00 ~ 02 | CSV Format > Send/read the Separator/Decimal setting (00=Separator is " , " and Decimal is " . , " 01=Separator is " ; " and Decimal is " . , " 02=Separator is " ; " and Decimal is " , ") |
| | | 0106 00 ~ 02 | CSV Format > Send/read the Date setting (00="yyyy/mm/dd," 01="mm/dd/yyyy," 02="dd/mm/yyyy") |
| | | SET > Connectors | |
| | | 0107 00 ~ 02 | Send/read the SP Jack Function setting (00=Speaker, 01=Phone, 02=Phone (L+R)) |
| | | 0108 00 ~ 30 | Send/read the Phones Level setting (00=-15 ~ 30=+15) |
| | | 0109 00/01 | USB AF/IF Output > Send/read the Output Select setting (00=AF, 01=IF) |
| | | 0110 0000 ~ 0255 | USB AF/IF Output > Send/read the AF Output Level setting (0000=0% ~ 0255=100%) |
| | | 0111 00/01 | USB AF/IF Output > Send/read the AF SQL setting (00=OFF (Open), 01=ON) |
| | | 0112 00/01 | USB AF/IF Output > Send/read the AF Beep/Speech... Output setting (00=OFF, 01=ON) |
| | | 0113 0000 ~ 0255 | USB AF/IF Output > Send/read the IF Output Level setting (0000=0% ~ 0255=100%) |
| | | 0114 00/01 | WLAN AF/IF Output > Send/read the Output Select setting (00=AF, 01=IF) |
| | | 0115 00/01 | WLAN AF/IF Output > Send/read the AF SQL setting (00=OFF (Open), 01=ON) |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|----------------------------|--|
| 1A* | 05 | SET > Connectors | |
| | | 0116 | 0000 ~ 0255 MOD Input > Send/read the USB MOD Level setting (0000=0% ~ 0255=100%) |
| | | 0117 | 0000 ~ 0255 MOD Input > Send/read the WLAN MOD Level setting (0000=0% ~ 0255=100%) |
| | | 0118 | 00 ~ 03 MOD Input > Send/read the DATA OFF MOD setting (00=MIC, 01=USB, 02=MIC, USB, 03=WLAN) |
| | | 0119 | 00 ~ 03 MOD Input > Send/read the DATA MOD setting (00=MIC, 01=USB, 02=MIC, USB, 03=WLAN) |
| | | 0120 | 00/01 SEND Output > Send/read the HF setting (00=OFF, 01=ON) |
| | | 0121 | 00/01 SEND Output > Send/read the 50M setting (00=OFF, 01=ON) |
| | | 0123 | 00/01 SEND Output > Send/read the 144M setting (00=OFF, 01=ON) |
| | | 0124 | 00/01 SEND Output > Send/read the 430M setting (00=OFF, 01=ON) |
| | | 0125 | 00 ~ 04 USB SEND/Keying > Send/read the USB SEND setting (00=OFF, 01=USB (A) DTR, 02=USB (A) RTS, 03=USB (B) DTR, 04=USB (B) RTS) ① You cannot select the terminal which is already selected in the "USB Keying (CW)" or "USB Keying (RTTY)" item. |
| | | 0126 | 00 ~ 04 USB SEND/Keying > Send/read the USB Keying (CW) setting (00=OFF, 01=USB (A) DTR, 02=USB (A) RTS, 03=USB (B) DTR, 04=USB (B) RTS) ① You cannot select the terminal which is already selected in the "USB SEND" or "USB Keying (RTTY)" item. |
| | | 0127 | 00 ~ 04 USB SEND/Keying > Send/read the USB Keying (RTTY) setting (00=OFF, 01=USB (A) DTR, 02=USB (A) RTS, 03=USB (B) DTR, 04=USB (B) RTS) ① You cannot select the terminal which is already selected in the "USB SEND" or "USB Keying (CW)" item. |
| | | 0128 | 00/01 External Keypad > Send/read the VOICE setting (00=OFF, 01=ON) |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|----------------------------|--|
| 1A* | 05 | SET > Connectors | |
| | | 0129 | 00/01 External Keypad > Send/read the KEYSER setting (00=OFF, 01=ON) |
| | | 0130 | 00/01 External Keypad > Send/read the RTTY setting (00=OFF, 01=ON) |
| | | 0131 | 00/01 CI-V > Send/read the CI-V Transceive setting (00=OFF, 01=ON) |
| | | 0132 | 00/01 CI-V > Send/read the CI-V USB Echo Back setting (00=OFF, 01=ON) |
| | | 0133 | 00 ~ 03 USB (B) Function > Send/read the USB (B) Function setting (00=OFF, 01=RTTY Decode, 02=DV Data, 03=Weather) |
| | | 0134 | 00/01 USB (B) Function > Send/read the GPS Out setting (00=OFF, 01=ON) ① It is valid when "USB (B) Function" is set to "OFF" or "DV Data." |
| | | 0135 | 00/01 Send/read the MIC Jack 8V Output setting (00=OFF, 01=ON) |
| | | SET > Display | |
| | | 0136 | 0000 ~ 0255 Send/read the LCD Backlight setting (0000=0% ~ 0255=100%) |
| | | 0137 | 00/01 Send/read the LCD Backlight Auto Adjust setting (00=OFF, 01=ON) |
| | | 0138 | 00 ~ 06 Send/read the Screen Saver (Battery Pack) setting (00=OFF, 01=1min, 02=2min, 03=5min, 04=15min, 05=30min, 06=60min) |
| | | 0139 | 00 ~ 06 Send/read the Screen Saver (DC 13.8 V) setting (00=OFF, 01=1min, 02=2min, 03=5min, 04=15min, 05=30min, 06=60min) |
| | | 0140 | 00/01 Send/read the Screen OFF [POWER] Switch setting (00=OFF, 01=ON) |
| | | 0141 | 00/01 Send/read the RX LED setting (00=OFF, 01=ON) |
| | | 0142 | 00/01 Send/read the Meter Peak Hold setting (00=OFF, 01=ON) |
| | | 0143 | 00/01 Send/read the Memory Name setting (00=OFF, 01=ON) |
| | | 0144 | 00/01 Send/read the Group Name Popup setting (00=OFF, 01=ON) |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|-------------------------|---|
| 1A* | 05 | SET > Display | |
| | 0145 | 00 ~ 03 | Send/read the RX Call Sign Display setting (00=OFF, 01=Normal, 02=RX Hold, 03=Hold) |
| | 0146 | 00/01 | Send/read the RX Position Indicator setting (00=OFF, 01=ON) |
| | 0147 | 00/01 | Send/read the RX Position Display setting (00=OFF, 01=ON) |
| | 0148 | 00 ~ 04 | Send/read the RX Position Display Timer setting (00=5sec, 01=10sec, 02=15sec, 03=30sec, 04=Hold) |
| | 0149 | 00/01 | Send/read the Reply Position Display setting (00=OFF, 01=ON) |
| | 0150 | 00/01 | Send/read the RX Picture Indicator setting (00=OFF, 01=ON) |
| | 0151 | 00/01 | Send/read the DV RX Backlight setting (00=OFF, 01=ON) |
| | 0152 | 00 ~ 02 | Send/read the TX Call Sign Display setting (00=OFF, 01=Your Call Sign, 02=My Call Sign) |
| | 0153 | 00/01 | Send/read the Scroll Speed setting (00=Slow, 01=Fast) |
| | 0154 | 00/01 | Send/read the Opening Message setting (00=OFF, 01=ON) |
| | 0155 | 00/01 | Send/read the Power ON Check setting (00=OFF, 01=ON) |
| | 0156 | 00/01 | Display Unit > Send/read the Latitude/Longitude setting (00=ddd°mm.mm', 01=ddd°mm'ss") |
| | 0157 | 00/01 | Display Unit > Send/read the Altitude/Distance setting (00=m, 01=ft/mi) |
| | 0158 | 00 ~ 02 | Display Unit > Send/read the Speed setting (00=km/h, 01=mph, 02=knots) |
| | 0159 | 00/01 | Display Unit > Send/read the Temperature setting (00=°C, 01=°F) |
| | 0160 | 00 ~ 03 | Display Unit > Send/read the Barometric setting (00=hPa, 01=mb, 02=mmHg, 03=inHg) |
| | 0161 | 00/01 | Display Unit > Send/read the Rainfall setting (00=mm, 01=inch) |
| | 0162 | 00 ~ 03 | Display Unit > Send/read the Wind Speed setting (00=m/s, 01=km/h, 02=mph, 03=knots) |
| | 0163 | 00/01 | Send/read the Display Language setting (00=English, 01=Japanese) |
| | 0164 | 00/01 | Send/read the System Language setting (00=English, 01=Japanese) |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|-----------------------------|--|
| 1A* | 05 | SET > Time Set | |
| | 0165 | 20000101 ~ 20991231 | Date/Time > Send/read the Date setting (20000101=2000/1/1 ~ 20991231=2099/12/31) |
| | 0166 | 0000 ~ 2359 | Date/Time > Send/read the Time setting (0000=00:00 ~ 2359=23:59) |
| | 0167 | 00/01 | Date/Time > Send/read the NTP Function setting (00=OFF, 01=ON) |
| | 0168 | See p. 18. | Date/Time > Send/read the NTP Server Address setting (Up to 64 characters) |
| | 0169 | 00/01 | Date/Time > Send/read the GPS Time Correct setting (00=OFF, 01=Auto) |
| | 0170 | See p. 20. | Send/read the UTC Offset setting |
| | | SET > SD Card | |
| | 0171 | 00 ~ 02 | Import/Export > CSV Format > Send/read the Separator/Decimal setting (00=Separator is " , " and Decimal is " . , " 01=Separator is " ; " and Decimal is " . , " 02=Separator is " ; " and Decimal is " , ") |
| | 0172 | 00 ~ 02 | Import/Export > CSV Format > Send/read the Date setting (00="yyyy/mm/dd," 01="mm/dd/yyyy," 02="dd/mm/yyyy") |
| | | SCOPE > SCOPE SET | |
| | 0173 | 00/01 | Send/read the Scope during Tx (CENTER Type) setting (00=OFF, 01=ON) |
| | 0174 | 00 ~ 02 | Send/read the Max Hold setting (00=OFF, 01=10s Hold, 02=ON) |
| | 0175 | 00 ~ 02 | Send/read the CENTER Type Display setting (00=Filter Center, 01=Carrier Point Center, 02=Carrier Point Center (Abs. Freq.)) |
| | 0176 | 00/01 | Send/read the Marker Position (FIX Type) setting (00=Filter Center, 01=Carrier Point) |
| | 0177 | 00/01 | Send/read the VBW setting (00=Narrow, 01=Wide) |
| | 0178 | 00 ~ 03 | Send/read the Averaging setting (00=OFF, 01=2, 02=3, 03=4) |
| | 0179 | 00/01 | Send/read the Waveform Type setting (00=Fill, 01=Fill+Line) |
| | 0180 | See p. 20. | Send/read the Waveform Color (Current) setting |
| | 0181 | See p. 20. | Send/read the Waveform Color (Line) setting |
| | 0182 | See p. 20. | Send/read the Waveform Color (Max Hold) setting |
| | 0183 | 00/01 | Send/read the Waterfall Display setting (00=OFF, 01=ON) |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|-------------------|---|
| 1A* | 05 | SCOPE > SCOPE SET | |
| | 0184 | 00 ~ 02 | Send/read the Waterfall Speed setting (00=Slow, 01=Mid, 02=Fast) |
| | 0185 | 00 ~ 02 | Send/read the Waterfall Size (Expand Screen) setting (00=Small, 01=Mid, 02=Large) |
| | 0186 | 00 ~ 07 | Send/read the Waterfall Peak Color Level setting (00=Grid1 ~ 07=Grid8) |
| | 0187 | 00/01 | Send/read the Waterfall Marker Auto-hide setting (00=OFF, 01=ON) |
| | 0188 | See p. 20. | FIX Edges > 0.03 - 1.60 > Send/read the No.1 setting |
| | 0189 | See p. 20. | FIX Edges > 0.03 - 1.60 > Send/read the No.2 setting |
| | 0190 | See p. 20. | FIX Edges > 0.03 - 1.60 > Send/read the No.3 setting |
| | 0191 | See p. 20. | FIX Edges > 1.60 - 2.00 > Send/read the No.1 setting |
| | 0192 | See p. 20. | FIX Edges > 1.60 - 2.00 > Send/read the No.2 setting |
| | 0193 | See p. 20. | FIX Edges > 1.60 - 2.00 > Send/read the No.3 setting |
| | 0194 | See p. 20. | FIX Edges > 2.00 - 6.00 > Send/read the No.1 setting |
| | 0195 | See p. 20. | FIX Edges > 2.00 - 6.00 > Send/read the No.2 setting |
| | 0196 | See p. 20. | FIX Edges > 2.00 - 6.00 > Send/read the No.3 setting |
| | 0197 | See p. 20. | FIX Edges > 6.00 - 8.00 > Send/read the No.1 setting |
| | 0198 | See p. 20. | FIX Edges > 6.00 - 8.00 > Send/read the No.2 setting |
| | 0199 | See p. 20. | FIX Edges > 6.00 - 8.00 > Send/read the No.3 setting |
| | 0200 | See p. 20. | FIX Edges > 8.00 - 11.00 > Send/read the No.1 setting |
| | 0201 | See p. 20. | FIX Edges > 8.00 - 11.00 > Send/read the No.2 setting |
| | 0202 | See p. 20. | FIX Edges > 8.00 - 11.00 > Send/read the No.3 setting |
| | 0203 | See p. 20. | FIX Edges > 11.00 - 15.00 > Send/read the No.1 setting |
| | 0204 | See p. 20. | FIX Edges > 11.00 - 15.00 > Send/read the No.2 setting |
| | 0205 | See p. 20. | FIX Edges > 11.00 - 15.00 > Send/read the No.3 setting |
| | 0206 | See p. 20. | FIX Edges > 15.00 - 20.00 > Send/read the No.1 setting |
| | 0207 | See p. 20. | FIX Edges > 15.00 - 20.00 > Send/read the No.2 setting |
| | 0208 | See p. 20. | FIX Edges > 15.00 - 20.00 > Send/read the No.3 setting |
| | 0209 | See p. 20. | FIX Edges > 20.00 - 22.00 > Send/read the No.1 setting |
| | 0210 | See p. 20. | FIX Edges > 20.00 - 22.00 > Send/read the No.2 setting |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|-------------------|--|
| 1A* | 05 | SCOPE > SCOPE SET | |
| | 0211 | See p. 20. | FIX Edges > 20.00 - 22.00 > Send/read the No.3 setting |
| | 0212 | See p. 20. | FIX Edges > 22.00 - 26.00 > Send/read the No.1 setting |
| | 0213 | See p. 20. | FIX Edges > 22.00 - 26.00 > Send/read the No.2 setting |
| | 0214 | See p. 20. | FIX Edges > 22.00 - 26.00 > Send/read the No.3 setting |
| | 0215 | See p. 20. | FIX Edges > 26.00 - 30.00 > Send/read the No.1 setting |
| | 0216 | See p. 20. | FIX Edges > 26.00 - 30.00 > Send/read the No.2 setting |
| | 0217 | See p. 20. | FIX Edges > 26.00 - 30.00 > Send/read the No.3 setting |
| | 0218 | See p. 20. | FIX Edges > 30.00 - 45.00 > Send/read the No.1 setting |
| | 0219 | See p. 20. | FIX Edges > 30.00 - 45.00 > Send/read the No.2 setting |
| | 0220 | See p. 20. | FIX Edges > 30.00 - 45.00 > Send/read the No.3 setting |
| | 0221 | See p. 20. | FIX Edges > 45.00 - 60.00 > Send/read the No.1 setting |
| | 0222 | See p. 20. | FIX Edges > 45.00 - 60.00 > Send/read the No.2 setting |
| | 0223 | See p. 20. | FIX Edges > 45.00 - 60.00 > Send/read the No.3 setting |
| | 0224 | See p. 20. | FIX Edges > 60.00 - 74.80 > Send/read the No.1 setting |
| | 0225 | See p. 20. | FIX Edges > 60.00 - 74.80 > Send/read the No.2 setting |
| | 0226 | See p. 20. | FIX Edges > 60.00 - 74.80 > Send/read the No.3 setting |
| | 0227 | See p. 20. | FIX Edges > 74.80 - 108.00 > Send/read the No.1 setting |
| | 0228 | See p. 20. | FIX Edges > 74.80 - 108.00 > Send/read the No.2 setting |
| | 0229 | See p. 20. | FIX Edges > 74.80 - 108.00 > Send/read the No.3 setting |
| | 0230 | See p. 20. | FIX Edges > 108.00 - 137.00 > Send/read the No.1 setting |
| | 0231 | See p. 20. | FIX Edges > 108.00 - 137.00 > Send/read the No.2 setting |
| | 0232 | See p. 20. | FIX Edges > 108.00 - 137.00 > Send/read the No.3 setting |
| | 0233 | See p. 20. | FIX Edges > 137.00 - 200.00 > Send/read the No.1 setting |
| | 0234 | See p. 20. | FIX Edges > 137.00 - 200.00 > Send/read the No.2 setting |
| | 0235 | See p. 20. | FIX Edges > 137.00 - 200.00 > Send/read the No.3 setting |
| | 0236 | See p. 20. | FIX Edges > 400.00 - 470.00 > Send/read the No.1 setting |
| | 0237 | See p. 20. | FIX Edges > 400.00 - 470.00 > Send/read the No.2 setting |
| | 0238 | See p. 20. | FIX Edges > 400.00 - 470.00 > Send/read the No.3 setting |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|------------------------------------|--|
| 1A* | 05 | AUDIO > AUDIO SCOPE SET | |
| | | 0239 00/01 | Send/read the FFT Scope Waveform Type setting (00=Line, 01=Fill) |
| | | 0240 See p. 20. | Send/read the FFT Scope Waveform Color setting |
| | | 0241 00/01 | Send/read the FFT Scope Waterfall Display setting (00=OFF, 01=ON) |
| | | 0242 See p. 20. | Send/read the Oscilloscope Waveform Color setting |
| | | VOICE | |
| | | 0243 0000 ~ 0255 | Send/read the TX LEVEL setting (0000=0% ~ 0255=100%) |
| | | 0244 00/01 | VOICE TX SET > Send/read the Auto Monitor setting (00=OFF, 01=ON) |
| | | 0245 01 ~ 15 | VOICE TX SET > Send/read the Repeat Time setting (01=1sec ~ 15=15sec) |
| | | KEYER > KEYER 001 | |
| | | 0246 00 ~ 04 | Send/read the Number Style setting (00=Normal, 01=190→ANO, 02=190→ANT, 03=90→NO, 04=90→NT) |
| | | 0247 01 ~ 08 | Send/read the Count Up Trigger setting (01=M1 ~ 08=M8) |
| | | 0248 0001 ~ 9999 | Send/read Present Number setting (0001=1 ~ 9999=9999) |
| | | KEYER > CW-KEY SET | |
| | | 0249 0000 ~ 0255 | Send/read Side Tone Level setting (0000=0% ~ 0255=100%) |
| | | 0250 00/01 | Send/read Side Tone Level Limit setting (00=OFF, 01=ON) |
| | | 0251 01 ~ 60 | Send/read Keyer Repeat Time setting (01=1sec ~ 60=60sec) |
| | | 0252 28 ~ 45 | Send/read Dot/Dash Ratio setting (28=1:1:2.8 ~ 45=1:1:4.5 in 0.1 steps) |
| | | 0253 00 ~ 03 | Send/read Rise Time setting (00=2ms, 01=4ms, 02=6ms, 03=8ms) |
| | | 0254 00/01 | Send/read Paddle Polarity setting (00=Normal, 01=Reverse) |
| | | 0255 00 ~ 02 | Send/read Key Type setting (00=Straight, 01=Bug, 02=Paddle) |
| | | 0256 00 ~ 02 | Send/read MIC Up/Down Keyer setting (00=OFF, 01=ON (UP/DOWN), 02=ON (A/B)) |
| | | DECODE > RTTY DECODE SET | |
| | | 0257 00 ~ 03 | Send/read the FFT Scope Averaging setting (00=OFF, 01=2, 02=3, 03=4) |
| | | 0258 See p. 20. | Send/read the FFT Scope Waveform Color setting |
| | | 0259 00/01 | Send/read the Decode USOS setting (00=OFF, 01=ON) |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|------------------------------------|--|
| 1A* | 05 | DECODE > RTTY DECODE SET | |
| | | 0260 00/01 | Send/read the Decode New Line Code setting (00=CR,LF,CR+LF, 01=CR+LF) |
| | | 0261 00/01 | Send/read the TX USOS setting (00=OFF, 01=ON) |
| | | 0262 See p. 20. | Send/read the Font Color (Receive) setting |
| | | 0263 See p. 20. | Send/read the Font Color (Transmit) setting |
| | | DECODE > RTTY DECODE LOG | |
| | | 0264 00/01 | Send/read the Decode Log setting (00=OFF, 01=ON) |
| | | 0265 00/01 | Log Set > Send/read the File Type setting (00=Text, 01=HTML) |
| | | 0266 00/01 | Log Set > Send/read the Time Stamp setting (00=OFF, 01=ON) |
| | | 0267 00/01 | Log Set > Send/read the Time Stamp (Time) setting (00=Local, 01=UTC) |
| | | 0268 00/01 | Log Set > Send/read the Time Stamp (Frequency) setting (00=OFF, 01=ON) |
| | | RECORD > Recorder Set | |
| | | 0269 00/01 | Send/read the TX REC Audio setting (00=Direct, 01= Monitor) |
| | | 0270 00/01 | Send/read the RX REC Condition setting (00=Always, 01=Squelch Auto) |
| | | 0271 00/01 | Send/read the File Split setting (00=OFF, 01=ON) |
| | | 0272 00/01 | Send/read the PTT Auto REC setting (00=OFF, 01=ON) |
| | | 0273 00 ~ 03 | Send/read the PRE-REC for PTT Auto REC setting (00=OFF, 01=5sec, 02=10sec, 03=15sec) |
| | | RECORD > Player Set | |
| | | 0274 00 ~ 03 | Send/read the Skip Time setting (00=3sec, 01=5sec, 02=10sec, 03=30sec) |
| | | SCAN > SCAN SET | |
| | | 0275 00/01 | Send/read the SCAN Speed setting (00=Slow, 01=Fast) |
| | | 0276 00/01 | Send/read the SCAN Resume setting (00=OFF, 01=ON) |
| | | 0277 00 ~ 10 | Send/read the Pause Timer setting (00=2sec ~ 09=20sec in 2 seconds, 10=HOLD) |
| | | 0278 00 ~ 06 | Send/read the Resume Timer setting (00=0sec ~ 05=5sec, 06=HOLD) |
| | | 0279 00 ~ 04 | Send/read the Temporary Skip Timer setting (00=5min, 01=10min, 02=15min, 03=While Scanning, 04=While Powered ON) |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|---|--|
| 1A* | 05 | SCAN > SCAN SET | |
| | | 0280 00/01 | Send/read the MAIN DIAL Operation (SCAN) setting (00=OFF, 01=Up/Down) |
| | | GPS | |
| | | 0281 00 ~ 02 | GPS Set > Send/read the GPS Select setting (00=OFF, 01=ON, 02=Manual) |
| | | 0282 00/01 | GPS Set > GPS Option > Send/read the SBAS setting (00=OFF, 01=ON) |
| | | 0283 00/01 | GPS Set > GPS Option > Send/read the GLONASS setting (00=OFF, 01=ON) |
| | | 0284 00 ~ 05 | GPS Set > GPS Option > Send/read the Power Save setting (00=OFF, 01=1min, 02=2min, 03=4min, 04=8min, 05=Auto) |
| | | 0285 00/01 | GPS Set > GPS Option > Send/read the Satellite Information Out setting (00=GPS/QZSS/GLONASS, 01=GPS Only) |
| | | 0286 See p. 21. | GPS Set > Send/read the Manual Position setting |
| | | 0287 00 ~ 02 | Send/read the GPS TX Mode setting (00=OFF, 01=D-PRS, 02=NMEA) |
| | | GPS > GPS TX Mode > D-PRS | |
| | | 0288 See p. 18. | Send/read the Unproto Address setting (Up to 56 characters) |
| | | 0289 00 ~ 03 | Send/read the TX Format setting (00=Position, 01=Object, 02=Item, 03=Weather) |
| | | GPS > GPS TX Mode > D-PRS > TX Format > Position | |
| | | 0290 00 ~ 03 | Send/read the Symbol setting (00=No.1, 01=No.2, 02=No.3, 03=No.4) |
| | | 0291 See pp. 18 and 21. | Send/read the Symbol No.1 setting (2 characters) |
| | | 0292 See pp. 18 and 21. | Send/read the Symbol No.2 setting (2 characters) |
| | | 0293 See pp. 18 and 21. | Send/read the Symbol No.3 setting (2 characters) |
| | | 0294 See pp. 18 and 21. | Send/read the Symbol No.4 setting (2 characters) |
| | | 0295 00 ~ 42 | Send/read the SSID setting (00= - - -, 01=(- 0), 02= -1 ~ 16= -15, 17= -A ~ 42= -Z) |
| | | 0296 00 ~ 03 | Send/read the Comment setting (00=No.1, 01=No.2, 02=No.3, 03=No.4) |
| | | 0297 See p. 18. | Send/read the Comment No.1 setting (Up to 43 characters) |
| | | 0298 See p. 18. | Send/read the Comment No.2 setting (Up to 43 characters) |
| | | 0299 See p. 18. | Send/read the Comment No.3 setting (Up to 43 characters) |
| | | 0300 See p. 18. | Send/read the Comment No.4 setting (Up to 43 characters) |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|---|--|
| 1A* | 05 | GPS > GPS TX Mode > D-PRS > TX Format > Position | |
| | | 0301 00 ~ 02 | Send/read the Time Stamp setting (00=OFF, 01=DHM, 02=HMS) |
| | | 0302 00/01 | Send/read the Altitude setting (00=OFF, 01=ON) |
| | | 0303 00 ~ 02 | Send/read the Data Extension setting (00=OFF, 01=Course/Speed, 02=Power/Height/Gain/Directivity) |
| | | 0304 00 ~ 09 | Send/read the Power setting (00=0W, 01=1W, 02=4W, 03=9W, 04=16W, 05=25W, 06=36W, 07=49W, 08=64W, 09=81W) |
| | | 0305 00 ~ 09 | Send/read the Height setting (00=3m, 01=6m, 02=12m, 03=24m, 04=49m, 05=98m, 06=195m, 07=390m, 08=780m, 09=1561m) |
| | | 0306 00 ~ 09 | Send/read the Gain setting (00=0dB ~ 09=9dB) |
| | | 0307 00 ~ 08 | Send/read the Directivity setting (00=Omni, 01=45°NE, 02=90°E, 03=135°SE, 04=180°S, 05=225°SW, 06=270°W, 07=315°NW, 08=360°N) |
| | | GPS > GPS TX Mode > D-PRS > TX Format > Object | |
| | | 0308 See p. 18. | Send/read the Object Name setting (Up to 9 characters) |
| | | 0309 00/01 | Send/read the Data Type setting (00=Live Object, 01=Kill Object) |
| | | 0310 See pp. 18 and 21. | Send/read the Symbol setting (2 characters) |
| | | 0311 See p. 18. | Send/read the Comment setting (Up to 43 characters) |
| | | 0312 See p. 21. | Send/read the Position setting |
| | | 0313 00 ~ 02 | Send/read the Data Extension setting (00=OFF, 01=Course/Speed, 02=Power/Height/Gain/Directivity) |
| | | 0314 000 ~ 360 | Send/read the Course setting (000=0° ~ 360=360°) |
| | | 0315 0000 ~ 1850 | Send/read the Speed setting (0000=0km/h ~ 1850=1850km/h) |
| | | 0316 00 ~ 09 | Send/read the Power setting (00=0W, 01=1W, 02=4W, 03=9W, 04=16W, 05=25W, 06=36W, 07=49W, 08=64W, 09=81W) |
| | | 0317 00 ~ 09 | Send/read the Height setting (00=3m, 01=6m, 02=12m, 03=24m, 04=49m, 05=98m, 06=195m, 07=390m, 08=780m, 09=1561m) |
| | | 0318 00 ~ 09 | Send/read the Gain setting (00=0dB ~ 09=9dB) |
| | | 0319 00 ~ 08 | Send/read the Directivity setting (00=Omni, 01=45°NE, 02=90°E, 03=135°SE, 04=180°S, 05=225°SW, 06=270°W, 07=315°NW, 08=360°N) |
| | | 0320 00 ~ 42 | Send/read the SSID setting (00= - - -, 01=(- 0), 02= -1 ~ 16= -15, 17= -A ~ 42= -Z) |
| | | 0321 00/01 | Send/read the Time Stamp setting (00=DHM, 01=HMS) |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|--|---|---|
| 1A* | 05 | GPS > GPS TX Mode > D-PRS > TX Format > Item | |
| | 0322 | See p. 18. | Send/read the Item Name setting (Up to 9 characters) |
| | 0323 | 00/01 | Send/read the Data Type setting (00=Live Item, 01=Killed Item) |
| | 0324 | See pp. 18 and 21. | Send/read the Symbol setting (2 characters) |
| | 0325 | See p. 18. | Send/read the Comment setting (Up to 43 characters) |
| | 0326 | See p. 21. | Send/read the Position setting |
| | 0327 | 00 ~ 02 | Send/read the Data Extension setting (00=OFF, 01=Course/Speed, 02=Power/Height/Gain/Directivity) |
| | 0328 | 000 ~ 360 | Send/read the Course setting (000 ~ 360=0° ~ 360°) |
| | 0329 | 0000 ~ 1850 | Send/read the Speed setting (0000=0km/h ~ 1850=1850km/h) |
| | 0330 | 00 ~ 09 | Send/read the Power setting (00=0W, 01=1W, 02=4W, 03=9W, 04=16W, 05=25W, 06=36W, 07=49W, 08=64W, 09=81W) |
| | 0331 | 00 ~ 09 | Send/read the Height setting (00=3m, 01=6m, 02=12m, 03=24m, 04=49m, 05=98m, 06=195m, 07=390m, 08=780m, 09=1561m) |
| | 0332 | 00 ~ 09 | Send/read the Gain setting (00=0dB ~ 09=9dB) |
| | 0333 | 00 ~ 08 | Send/read the Directivity setting (00=Omni, 01=45°NE, 02=90°E, 03=135°SE, 04=180°S, 05=225°SW, 06=270°W, 07=315°NW, 08=360°N) |
| | 0334 | 00 ~ 42 | Send/read the SSID setting (00= - - -, 01=(- 0), 02= -1 ~ 16= -15, 17= -A ~ 42= -Z) |
| | GPS > GPS TX Mode > D-PRS > TX Format > Weather | | |
| | 0335 | See pp. 18 and 21. | Send/read the Symbol setting (2 characters) |
| | 0336 | 00 ~ 42 | Send/read the SSID setting (00= - - -, 01=(- 0), 02= -1 ~ 16= -15, 17= -A ~ 42= -Z) |
| | 0337 | See p. 18. | Send/read the Comment setting (Up to 43 characters) |
| | 0338 | 00 ~ 02 | Send/read the Time Stamp setting (00=OFF, 01=DHM, 02=HMS) |
| | GPS > GPS TX Mode > NMEA | | |
| | 0339*6 | 00/01 | GPS Sentence > Send/read the RMC setting (00=OFF, 01=ON) |
| | 0340*6 | 00/01 | GPS Sentence > Send/read the GGA setting (00=OFF, 01=ON) |
| | 0341*6 | 00/01 | GPS Sentence > Send/read the GLL setting (00=OFF, 01=ON) |

| Cmd. | Sub cmd. | Data | Description |
|------|---------------------------|---------------------------------|--|
| 1A* | 05 | GPS > GPS TX Mode > NMEA | |
| | 0342*6 | 00/01 | GPS Sentence > Send/read the GSA setting (00=OFF, 01=ON) |
| | 0343*6 | 00/01 | GPS Sentence > Send/read the VTG setting (00=OFF, 01=ON) |
| | 0344*6 | 00/01 | GPS Sentence > Send/read the GSV setting (00=OFF, 01=ON) |
| | 0345 | See p. 18. | Send/read the GPS Message setting (Up to 20 characters) |
| | GPS > GPS Alarm | | |
| | 0346 | See p. 21. | Send/read the Alarm Area (Group) setting |
| | 0347 | 00 ~ 02 | Send/read the Alarm Area (RX/Memory) setting (00=Limited, 01=Extended, 02=Both) |
| | GPS > GPS Logger | | |
| | 0348 | 00/01 | Send/read the GPS Logger setting (00=OFF, 01=ON) |
| | 0349 | 00 ~ 06 | Send/read the Record Interval setting (00=1sec, 01=5sec, 02=10sec, 03=30sec, 04=1min, 05=5min, 06=10min) |
| | 0350 | 00/01 | Record Sentence > Send/read the RMC setting (00=OFF, 01=ON) |
| | 0351 | 00/01 | Record Sentence > Send/read the GGA setting (00=OFF, 01=ON) |
| | 0352 | 00/01 | Record Sentence > Send/read the VTG setting (00=OFF, 01=ON) |
| | 0353 | 00/01 | Record Sentence > Send/read the GSA setting (00=OFF, 01=ON) |
| | GPS | | |
| | 0354 | 00 ~ 06 | Send/read the GPS Auto TX setting (00=OFF, 01=30sec, 02=1min, 03=3min, 04=5min, 05=10min, 06=30min) |
| | DTMF > DTMF SET | | |
| | 0355 | 00 ~ 03 | Send/read the DTMF Speed setting (00=100ms, 01=200ms, 02=300ms, 03=500ms) |
| | NB | | |
| | 0356 | 0000 ~ 0255 | Send/read the NB LEVEL setting (0000=0% ~ 0255=100%) |
| | 0357 | 00 ~ 09 | Send/read the NB DEPTH setting (00=1 ~ 09=10) |
| | 0358 | 0000 ~ 0255 | Send/read the NB WIDTH setting (0000=1 ~ 0255=100) |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|---------------------|--|
| 1A* | 05 | VOX | |
| | 0359 | 00 ~ 20 | Send/read the VOX DELAY setting (00=0.0s ~ 20=2.0s in 0.1s steps) |
| | 0360 | 00 ~ 03 | Send/read the VOICE DELAY setting (00=OFF, 01=SHORT, 02=MID, 03=LONG) |
| | | CD | |
| | 0361 | 00/01 | Send/read the Call Sign Display/ Name Display setting (00=Call Sign Display, 01=Name Display) |
| | | GPS Position | |
| | 0362 | 00 ~ 02 | Send/read the Compass Direction setting (00=Heading Up, 01=North Up, 02=South Up) |
| | 06 | See p. 21. | Send/read the DATA mode setting |
| | 07 | 00/01 | Send/read the NTP server access (00=Terminate, 01=Initiate) |
| | 08*1 | 00 ~ 02 | Read NTP server access result (00=Accessing, or have not accessed after Power ON, 01=Succeeded, 02=Failed) |
| | 09*1 | 00/01 | Read the OVF indicator status (00=OFF, 01=ON) |
| | 0A | 00 ~ 02 | Send/read the Share Pictures function status (00=OFF, 01=ON, 02=ON (Repeat)) ① While transmitting the picture using the DV Fast Data function, sends ON even if the status is set to OFF. |
| 1B* | 00 | See p. 21. | Send/read the Repeater tone frequency |
| | 01 | See p. 21. | Send/read the TSQL tone frequency |
| | 02 | See p. 21. | Send/read the DTCS code and polarity |
| | 07 | See p. 22. | Send/read the CSQL code (DV mode) |
| 1C | 00* | 00/01 | Send/read the transceiver's status (00=RX, 01=TX) |
| | 01* | 00 ~ 02 | Send/read the Antenna tuner's status (00=OFF, 01=ON, 02=Tune) |
| | 02* | 00/01 | Send/read the Transmit frequency monitor (XFC) (00=OFF, 01=ON) |
| | 03*1 | See p. 16. | Read the transmit frequency |
| 1E | 00*1 | | Read number of available TX frequency band |
| | 01*1 | See p. 16. | Read TX band edge frequencies |
| | 02*1 | | Read number of user-set TX frequency band |
| | 03* | See p. 16. | Send/read the user-set TX band edge frequencies |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|------------|--|
| 1F* | 00 | See p. 22. | SET > My Station > Send/read the My Call Sign setting |
| | 01 | See p. 22. | CS > Send/read the UR, R1, R2 setting |
| | 02 | See p. 22. | SET > My Station > Send/read the TX Message setting |
| 20 | 00 | 00* | 00/01*7 Send/read the Auto DV RX Call signs output (00=OFF, 01=ON) |
| | | 01 | See p. 22. Output DV RX Call signs for transceive |
| | | 02*1 | See p. 22. Read Auto DV RX Call signs |
| | 01 | 00* | 00/01*7 Send/read the Auto DV RX message output (00=OFF, 01=ON) |
| | | 01 | See p. 23. Output DV RX message for transceive |
| | | 02*1 | See p. 23. Read Auto DV RX message |
| | 02 | 00* | 00/01*7 Send/read the Auto DV RX status output (00=OFF, 01=ON) |
| | | 01 | See p. 23. Output DV RX status for transceive |
| | | 02*1 | See p. 23. Read Auto DV RX status |
| | | 03 | 00* 00/01 Send/read the Auto DV RX GPS/D-PRS data output (00=OFF, 01=ON) |
| | | | 0100 See p. 23. Output DV RX GPS/D-PRS Position for transceive |
| | | | 0101 See p. 24. Output DV RX D-PRS Object status for transceive |
| | | | 0102 See p. 24. Output DV RX D-PRS Item status for transceive |
| | | | 0103 See p. 25. Output DV RX D-PRS Weather status for transceive |
| | | | 0200*1 See p. 23. Read Auto DV RX GPS/D-PRS Position status |
| 21* | 03 | 0201*1 | See p. 24. Read Auto DV RX D-PRS Object status |
| | | 0202*1 | See p. 24. Read Auto DV RX D-PRS Item status |
| | | 0203*1 | See p. 25. Read Auto DV RX D-PRS Weather status |
| | 04 | 00* | 00/01 Send/read Auto DV RX GPS/D-PRS message output (00=OFF, 01=ON) |
| | | 01 | See p. 25. Output DV RX D-PRS message for transceive |
| | | 02*1 | See p. 25. Read Auto DV RX D-PRS message status |
| | 00 | See p. 25. | Send/read the RIT frequency |
| | | 01 | 00/01 Send/read the RIT setting (00=OFF, 01=ON) |
| | | 02 | 00/01 Send/read the ΔTX setting (00=OFF, 01=ON) |

REMOTE CONTROL

Remote control (CI-V) information

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|------------------|-------------|--|
| 22 | 00 | See p. 25. | Set the DV TX data (Up to 30 byte) |
| | 01 | 00* | Set the Auto DV RX data output (00=OFF, 01=ON) |
| | | 01 | See p. 25. Set the DV RX data for transceive |
| | 02* | 00/01 | SET > DV Set > Send/read the DV Data TX setting (00=PTT, 01=Auto) |
| | 03* | 00/01 | SET > DV Set > DV Fast Data > Send/read the Fast Data setting (00=OFF, 01=ON) |
| | 04* | 00/01 | SET > DV Set > DV Fast Data > Send/read the GPS Data Speed setting (00=Slow, 01=Fast) |
| | 05* | 00 ~ 10 | SET > DV Set > DV Fast Data > Send/read the TX Delay (PTT) setting (00=OFF, 01=1sec ~ 10=10sec) |
| 23 | 00* ¹ | See p. 25. | Read the position status |
| | 01* | 00/01/03 | GPS > GPS Set > Send/read the GPS Select setting (00=OFF, 01=ON, 03=Manual) |
| | 02* | See p. 21. | GPS > GPS Set > Send/read the Manual Position setting |
| 24 | 00 | 00* | Send/read TX output power setting (00=OFF, 01=ON) |
| | | 01 | Set the TX output power for transceive (00=OFF, 01=ON) |
| 25* | | See p. 26. | Send/read the selected or unselected VFO frequency |
| 26* | | See p. 26. | Send/read the selected or unselected VFO's operating mode and filter |
| 27* | 00 | See p. 26. | Read the Scope waveform data (Only when "Scope ON/OFF status" (Command: 27 10) and "Scope data output" (Command: 27 11) are set to "ON," outputs the waveform data to the controller.) |
| | 10 | 00/01 | Send/read the Scope ON/OFF status (00=OFF, 01=ON) |
| | 11 | 00/01 | Send/read the Scope wave data output (00=OFF, 01=ON) |
| | 12 | 00 | Send/read the Main or Sub scope setting (00=Main (fixed)) |
| | 13 | 00 | Send/read the Single/Dual scope setting (00=Single (fixed)) |
| | 14 | 0000/0001 | Send/read the Scope Center mode or Fixed mode setting (0000=CENTER mode, 0001=FIX mode) |
| | 15 | See p. 27. | Send/read the Span setting in the Center mode Scope |
| | 16 | 0001 ~ 0003 | Send/read the Edge number setting in the Fixed mode Scope |
| | 17 | 0000/0001 | Send/read the Scope hold function ON/OFF status (0000=OFF, 0001=ON) |
| | 19 | See p. 27. | Send/read the Scope Reference level setting |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|-------------|---|
| 27* | 1A | 0000 ~ 0002 | Send/read the Sweep speed setting (0000=FAST, 0001=MID, 0002=SLOW) |
| | 1B | 00/01 | SCOPE > SCOPE SET > Send/read the Scope during Tx (CENTER TYPE) setting (00=OFF, 01=ON) |
| | 1C | 00 ~ 02 | SCOPE > SCOPE SET > Send/read the CENTER Type Display setting (00=Filter Center, 01=Carrier Point Center, 02=Carrier Point Center (Abs. Freq.)) |
| | 1D | 0000/0001 | Send/read the Scope VBW setting (0000=NAR, 0001=WIDE) |
| | 1E | See p. 27. | Send/read the Scope Fixed edge frequencies |
| 28 | 00 | 00 ~ 08 | Transmit the Voice TX Memory (00=Stop, 01=T1 ~ 08=T8) |

*(Asterisk) Send/read data

*¹ Read only data

*² Send only data

*³ In the CW mode, if the [PTT] or an external TX switch is ON, or the Break-in function is ON, a message will be transmitted as CW code when you send it from your PC.

*⁴ Sending the power ON command (18 01) turns ON the transceiver when the transceiver is OFF (Standby/Shutdown).

*⁵ To insert a counter, first clear the other channel's counter.

*⁶ Set at least 1 GPS sentence to ON.
Up to 4 GPS sentences can be set to ON at the same time.

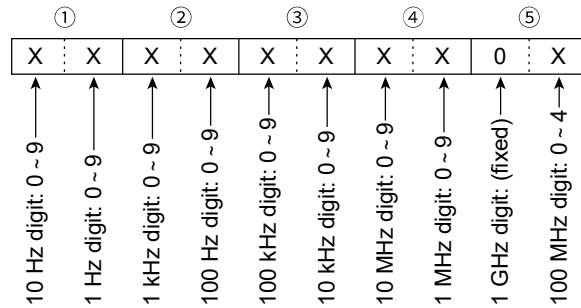
*⁷ Output setting is automatically set to OFF after turning OFF the transceiver.

Remote control (CI-V) information

◆ Command formats

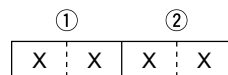
• Operating frequency

Command: 00, 03, 05, 1C 03



• Operating mode

Command: 01, 04, 06

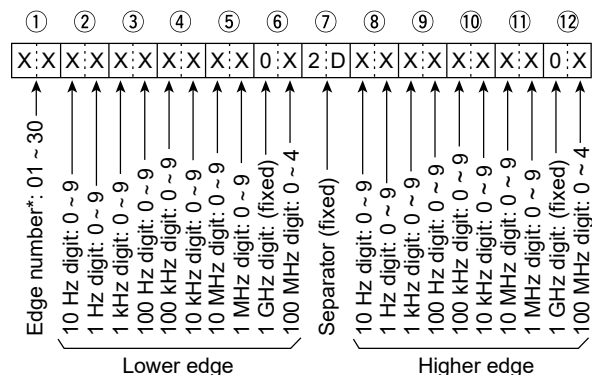


| ① Operating mode | | ② Filter setting |
|------------------|------------|------------------|
| 00: LSB | 05: FM | 01: FIL1 |
| 01: USB | 06: WFM | 02: FIL2 |
| 02: AM | 07: CW-R | 03: FIL3 |
| 03: CW | 08: RTTY-R | — |
| 04: RTTY | 17: DV | — |

① Filter setting, (②) can be skipped with command 01 and 06. In that case, "FIL1" is selected with command 01 and the default filter setting of the operating mode is automatically selected with command 06.

• Band edge frequency settings

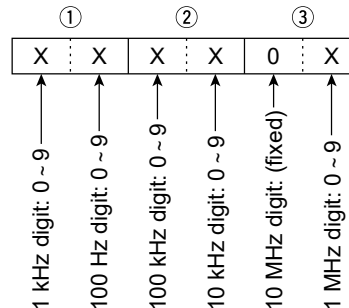
Command: 02*, 1E 01, 1E 03



* When obtaining the edge number (by command "02"), the edge number (①) is not returned.

• Duplex Offset frequency setting

Command: 0C, 0D



• Codes for CW message contents

Command: 17 (Up to 30 characters)
To send CW messages, use the following character codes.

| Character | ASCII code | Character | ASCII code |
|-----------|------------|-----------|------------|
| 0 ~ 9 | 30 ~ 39 | ' | 27 |
| A ~ Z | 41 ~ 5A | (| 28 |
| a ~ z | 61 ~ 7A |) | 29 |
| / | 2F | = | 3D |
| ? | 3F | + | 2B |
| . | 2E | " | 22 |
| - | 2D | @ | 40 |
| , | 2C | Space | 20 |
| : | 3A | | |

① "FF" stops sending CW messages.

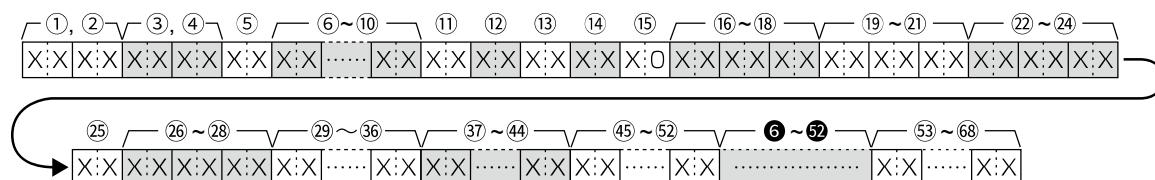
② "A" is used to transmit a string of characters with no inter-character space.

Remote control (CI-V) information

◇ Command formats

• Memory content

Command: 1A 00

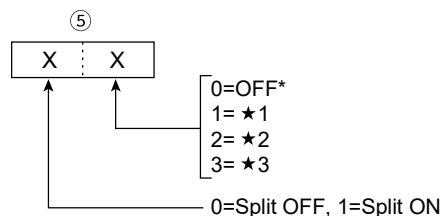


①, ②: Memory group number
0000 ~ 0099: Memory channel group
0100: Call channel group

③, ④: Memory channel numbers

- When Memory channel group is selected, 0000 ~ 0099: 00 ~ 99
- When Call channel group is selected, 0000, 0001: 144 C1, C2
0002, 0003: 430 C1, C2

⑤: Split and Select memory setting



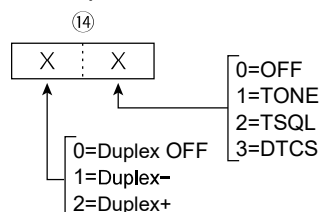
* Set 0 for Call channel.

⑥~⑩: Operating frequency setting
① See "Operating frequency." (p. 16)

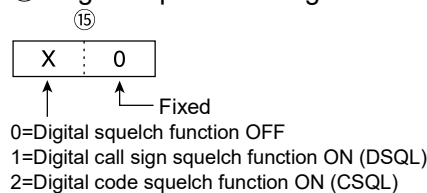
⑪, ⑫: Operating mode setting
① See "Operating mode." (p. 16)

⑬: Data mode setting
1 byte data (XX)
00: Data mode OFF
01: Data mode ON

⑭: Duplex and Tone settings



⑮: Digital squelch setting



⑯~⑰: Repeater tone frequency setting

⑱~⑲: Repeater tone frequency setting

① See "Repeater tone/tone squelch frequency setting." (p. 21)

⑳~㉔: DTCS code setting

① See "DTCS code and polarity setting." (p. 21)

㉕: DV Digital code squelch setting

① See "DV Digital code squelch setting." (p. 22)

㉖~㉘: Duplex offset frequency setting

① See "Duplex Offset frequency setting." (p. 16)

㉙~㉛: UR (Destination) call sign setting
(8 characters, fixed)

㉜~㉞: R1 (Access repeater) call sign setting
(8 characters, fixed)

㉟~㉡: R2 (Gateway/Link repeater) call sign setting
(8 characters, fixed)

① See "DV TX call signs setting." (p. 22)

㉢~㉧: Memory name setting (16 characters, fixed)
① See "Codes for character entries." (p. 18)

To clear the memory channel contents on 1A 00:

②, ③: Memory channel (0001~0099)

④: "FF," ⑤ ~ : None

NOTE:

- The same data as ⑥ ~ ⑤② are stored in ⑥ ~ ⑤②.
- When the Split function is ON, the data of ⑥ ~ ⑤② is used for transmit.
- Even if the Split function is OFF, enter the data into ⑥ ~ ⑤② to match your transceiver. We recommend that you set the same data as ⑥ ~ ⑤②.

Remote control (CI-V) information

◇ Command formats

• Codes for character entries

Command: 1A 00,
 1A 05 0168, 0288, 0308, 0310,
 0311, 0322, 0325, 0337,
 0345,
 1A 05 0291 ~ 1A 05 0294,
 1A 05 0297 ~ 1A 05 0300

- 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 |

| Cmd. | Sub cmd. | Set item/selectable characters |
|------|----------|---|
| 1A | 00 | Memory name All characters are usable. |
| | 05 0168 | NTP Server Address A ~ Z, a ~ z, 0 ~ 9, .. - |

• Band stacking register

Command: 1A 01

| | |
|---|---|
| ① | ② |
| X | X |
| X | X |

NOTE: When sending the contents, the codes, such as operating frequency and operating mode*, should be added after the frequency band code and the register code, as shown below.

* See ⑥ ~ ⑫ on “Memory content.” (p. 17)

①: Frequency band codes

| Code | Freq. band | Frequency range (unit: MHz) |
|------|------------|-----------------------------|
| 01 | 1.9 | 1.800000 ~ 1.999999 |
| 02 | 3.5 | 3.400000 ~ 4.099999 |
| 03 | 7 | 6.900000 ~ 7.499999 |
| 04 | 10 | 9.900000 ~ 10.499999 |
| 05 | 14 | 13.900000 ~ 14.499999 |
| 06 | 18 | 17.900000 ~ 18.499999 |
| 07 | 21 | 20.900000 ~ 21.499999 |
| 08 | 24 | 24.400000 ~ 25.099999 |
| 09 | 28 | 28.000000 ~ 29.999999 |
| 10 | 50 | 50.000000 ~ 54.000000 |
| 11 | WFM | 74.800000 ~ 107.999999 |
| 12 | Air | 108.000000 ~ 136.999999 |
| 13 | 144 | 144.000000 ~ 148.000000 |
| 14 | 430 | 420.000000 ~ 450.000000 |
| 15 | GENE | Other than above |

②: Register codes

| Code | Registered number |
|------|---------------------------|
| 01 | 1 (Display on left side) |
| 02 | 2 (Display in center) |
| 03 | 3 (Display on Right side) |

To read the contents, the register code should be added after the frequency band code, as shown below.

Example: When reading the frequency displayed in the center of the display in the 21 MHz band, use code “0703.”

Remote control (CI-V) information

◇ Command formats

• Keyer memory character entries

Command: 1A 02

- Character codes

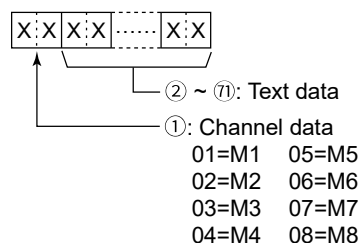
| Character | ASCII code | Description |
|-----------|------------|---|
| 0 ~ 9 | 30 ~ 39 | Numbers |
| A ~ Z | 41 ~ 5A | Letters |
| Space | 20 | Word space |
| / | 2F | Symbol |
| ? | 3F | Symbol |
| , | 2C | Symbol |
| . | 2E | Symbol |
| @ | 40 | Symbol |
| ^ | 5E | Example: to send BT, enter ^4254 |
| * | 2A | Inserts the contest number (can be used for 1 channel only) |

① Information

- “FA” (NG) is returned if you insert the content number in more than 1 channel.
- Spaces after the end of the sentence are not necessary.
- To clear the Keyer memory contents, send one or more spaces.

• Keyer memory content

Command: 1A 02



• IF filter width settings

Command: 1A 03

| Mode | Data | Steps |
|-------------|---------|----------------------------|
| SSB/CW/RTTY | 0 ~ 9 | 50 ~ 500 Hz (50 Hz) |
| SSB/CW | 10 ~ 40 | 600 Hz ~ 3.6 kHz (100 Hz) |
| RTTY | 10 ~ 31 | 600 ~ 2.7 kHz (100 Hz) |
| AM | 0 ~ 49 | 200 Hz ~ 10.0 kHz (200 Hz) |

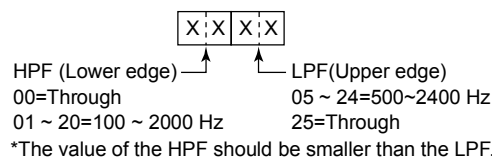
• AGC time constant settings

Command: 1A 04

| Data | AGC time constant (sec.) | |
|------|--------------------------|-----|
| | SSB/CW/RTTY | AM |
| 00 | OFF | OFF |
| 01 | 0.1 | 0.3 |
| 02 | 0.2 | 0.5 |
| 03 | 0.3 | 0.8 |
| 04 | 0.5 | 1.2 |
| 05 | 0.8 | 1.6 |
| 06 | 1.2 | 2.0 |
| 07 | 1.6 | 2.5 |
| 08 | 2.0 | 3.0 |
| 09 | 2.5 | 4.0 |
| 10 | 3.0 | 5.0 |
| 11 | 4.0 | 6.0 |
| 12 | 5.0 | 7.0 |
| 13 | 6.0 | 8.0 |

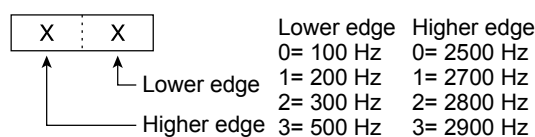
• RX HPF/LPF setting for each operating mode

Command: 1A 05 0001, 0004, 0007, 0010, 0015, 0016



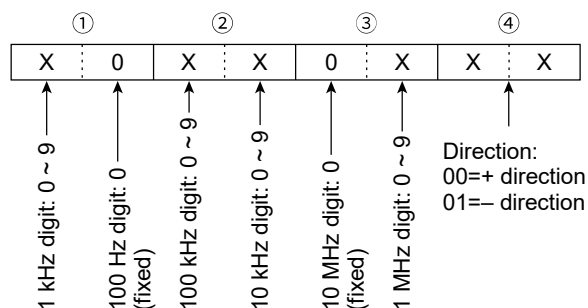
• SSB/SSB-DATA transmission passband width settings

Command: 1A 05 0019 ~ 0022



• Split offset frequency setting

Command: 1A 05 0046



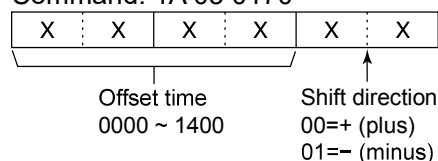
REMOTE CONTROL

Remote control (CI-V) information

◇ Command formats

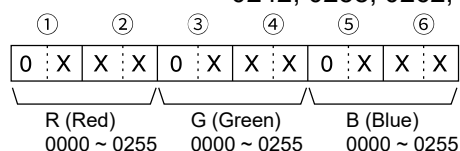
• UTC Offset setting

Command: 1A 05 0170



• Color settings

Command: 1A 05 0180, 0181, 0182, 0240,
0242, 0258, 0262, 0263



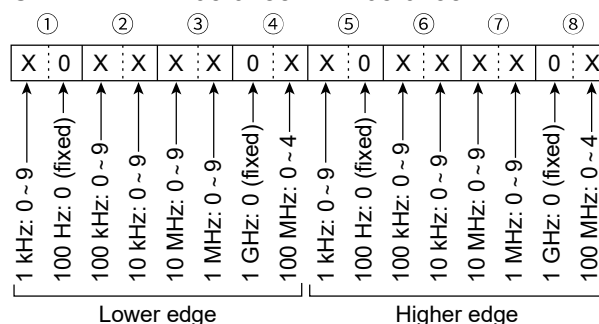
• Remote MIC Key setting

Command: 1A 05 0074 ~ 0077

| Data | Function |
|------|-------------------|
| 00 | No function |
| 01 | UP |
| 02 | DOWN |
| 03 | UP (VFO: kHz) |
| 04 | DOWN (VFO: kHz) |
| 05 | VOL UP |
| 06 | VOL DOWN |
| 07 | XFC |
| 08 | CALL |
| 09 | VFO/MEMO |
| 10 | DR |
| 11 | FROM/TO (DR) |
| 12 | Home CH |
| 13 | BAND/GROUP UP |
| 14 | BAND/GROUP DOWN |
| 15 | SCAN |
| 16 | Temporary Skip |
| 17 | SPEECH |
| 18 | MODE |
| 19 | RF Power |
| 20 | Voice TX (T1) |
| 21 | Voice TX (T2) |
| 22 | Keyer Memory (M1) |
| 23 | Keyer Memory (M2) |
| 24 | T-CALL * |
| 25 | RX>CS |
| 26 | TS |
| 27 | MPAD |
| 28 | SPLIT |
| 29 | A/B |

• Bandscope edge frequency settings

Command: 1A 05 0188 ~ 1A 05 0238



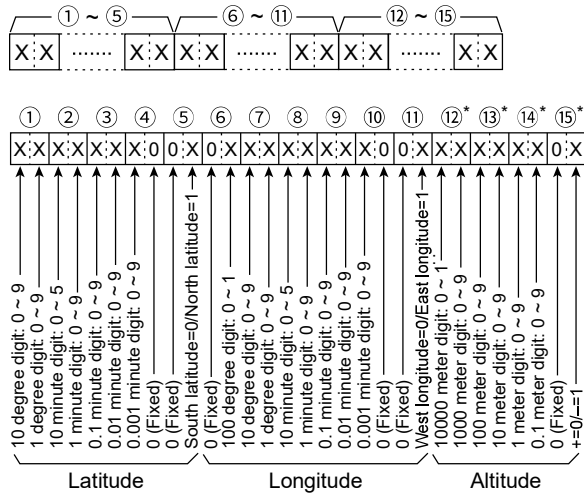
* Only for European version.

Remote control (CI-V) information

◇ Command formats

• Manually entered position data

Command: 1A 05 0286, 0312, 0326,
23 02



• D-PRS Symbol setting

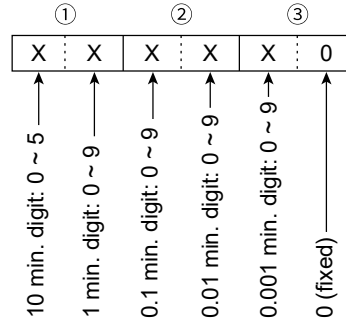
Command: 1A 05 0291 ~ 1A 05 0294,
1A 05 0310, 0324, 0335



- /, \, 0 to 9, A to Z can be used for the first digit character.
- See "Codes for character entries" for the second digit character. (p. 18)

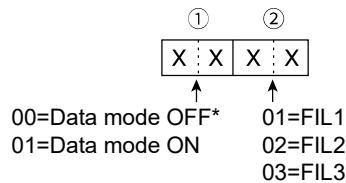
• Alarm area (Group) setting

Command: 1A 05 0346



• Data mode with filter width settings

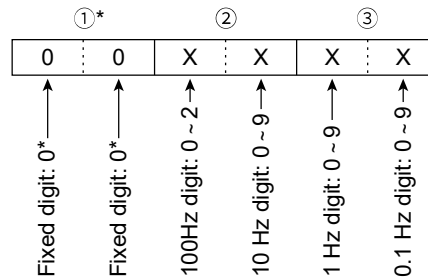
Command: 1A 06



*When 00 is set, also set 00 to ②.

• Repeater tone/tone squelch frequency settings

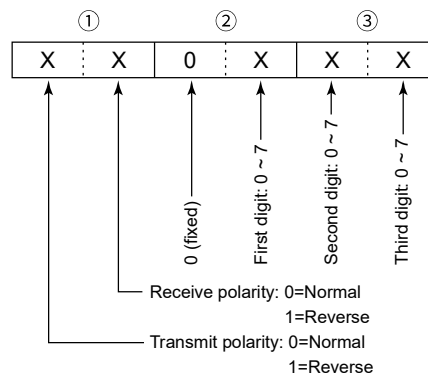
Command: 1B 00, 1B 01



*Not necessary when setting a frequency.

• DTCS code and polarity setting

Command: 1B 02

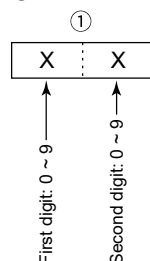


Remote control (CI-V) information

◇ Command formats

• DV Digital code squelch setting

Command: 1B 07



• DV MY call sign setting

Command: 1F 00

Set your own call sign and note of up to 12 characters.

See “Character’s code of the call sign.”



① ~ ⑧: Your own call sign setting (8 characters)

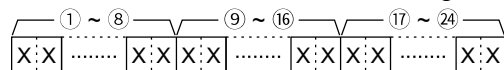
⑨ ~ ⑫: Note setting (4 characters)

• DV TX call signs setting (24 characters)

Command: 1F 01

Set “UR,” “R1,” and “R2” call signs of 8 characters (fixed).

See “Character’s code of the call sign.”



① ~ ⑧: UR (Destination) call sign setting (8 characters)

⑨ ~ ⑯: R1 (Access/Area repeater) call sign setting (8 characters)

⑰ ~ ⑳: R2 (Link/Gateway repeater) call sign setting (8 characters)

Character’s code of the call sign

| Character | ASCII code |
|-----------|------------|
| 0 ~ 9 | 30 ~ 39 |
| A ~ Z | 41 ~ 5A |
| (Space) | 20 |
| / | 2F |

• DV TX message setting

Command: 1F 02

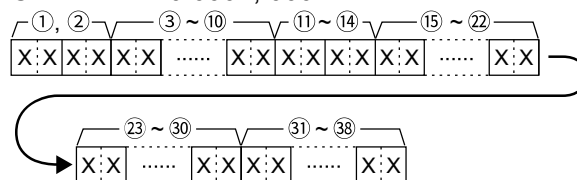
Set the transmit message of up to 20 characters.

See “Codes for character entries.” (p. 18)

“FF” stops sending or reading messages.

• DV RX call sign data

Command: 20 0001, 0002



①: Header flag data (First byte)

| Data | Description |
|-----------------|------------------------------|
| bit7 (0: Fixed) | — |
| bit6 (0: Fixed) | — |
| bit5 (0: Fixed) | — |
| bit4 0/1 | 0=Voice, 1=Data |
| bit3 0/1 | 0=Direct, 1=Through repeater |
| bit2 0/1 | 0=No Break-in, 1=Break-in |
| bit1 0/1 | 0=Data, 1=Control |
| bit0 0/1 | 0=Normal, 1=EMR |

②: Header flag data (Second byte)

| Data | Description |
|----------------|------------------------|
| bit2 bit1 bit0 | |
| 1 1 1 | Repeater control |
| 1 1 0 | Send auto acknowledge |
| 1 0 1 | (Not used) |
| 1 0 0 | Request to re-transmit |
| 0 1 1 | Send acknowledge |
| 0 1 0 | Receive no reply |
| 0 0 1 | Repeater disabled |
| 0 0 0 | NULL |

③ ~ ⑩: Call sign of the caller station (8 characters, fixed)

⑪ ~ ⑭: Note of the caller station (4 characters, fixed)

⑮ ~ ⑳: Call sign of the called station (8 characters, fixed)

㉓ ~ ㉖: Call sign of the access/area repeater (R1) (8 characters, fixed)

㉗ ~ ㉚: Call sign of the link/gateway repeater (R2) (8 characters, fixed)

See “Codes for character entries.” (p. 18)

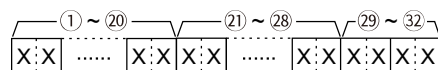
①FF: When no call sign is received since the transceiver power was turned ON.

Remote control (CI-V) information

◇ Command formats

• DV RX message

Command: 20 0101, 0102



① ~ ②⑩: Message (20 characters)

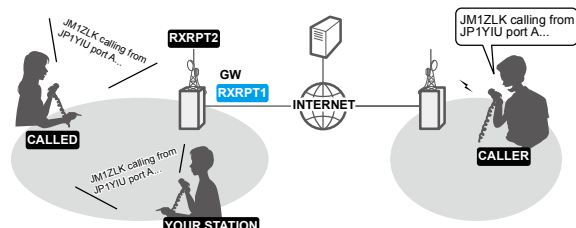
②① ~ ②⑧: Call sign of the caller station (8 characters)

②⑨ ~ ③②: Note of the caller station (4 characters)

See "Codes for character entries." (p. 18)

①FF: When no call sign is received since the transceiver power was turned ON.

Example: When a Gateway call is received



CALLER: Caller's call sign

CALLED: Called station call sign

RXRPT1: Call sign of the repeater that was accessed by the caller station

① If it was a call through a gateway and the internet, this item displays the gateway call sign of the repeater you received the call from.

RXRPT2: Call sign of the repeater you received the call from

• DV RX Status setting

Command: 20 0201, 0202

| Data | Function | Description |
|----------|----------------------------------|---|
| bit7 0 | (Fixed) | — |
| bit6 0/1 | Receiving a voice call | While receiving a digital voice signal, select "1." (Regardless of DSQ and CSQ setting) |
| bit5 0/1 | Last call finisher | When the last call was finished by you, select "1." |
| bit4 0/1 | Receiving a signal | When the audio tone can be heard, select "1." |
| bit3 0/1 | Receiving a BK call | While receiving a BK call, select "1." |
| bit2 0/1 | Receiving a EMR call | While receiving a EMR call, select "1." |
| bit1 0/1 | Receiving a signal other than DV | When "DV" and "FM" are blinking, select "1." |
| bit0 0/1 | Packet loss status | While displaying packet loss, "1" is returned. |

• GPS/D-PRS data

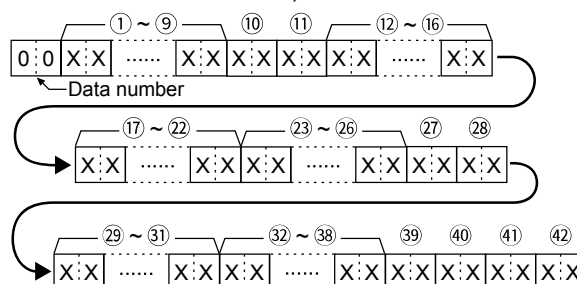
Command: 20 03 0100, 0101, 0102, 0103, 0200, 0201, 0202, 0203

Data number and description

| Data number | Description |
|-------------|------------------|
| 00 | D-PRS — Position |
| 01 | D-PRS — Object |
| 02 | D-PRS — Item |
| 03 | D-PRS — Weather |

Position

Command: 20 03 0100, 0200



① ~ ⑨: Call sign/SSID

(9 ASCII characters (A ~ Z, 0 ~ 9, /, -, space))

⑩, ⑪: Symbol (2 ASCII characters (00h ~ EFh))

⑫ ~ ⑯: Latitude (dd°mm.mmm format)

⑰ ~ ⑳: Longitude (ddd°mm.mmm format)

㉓ ~ ㉖: Altitude (0.1 meter steps)

㉗, ㉘: Course (1 degree steps)

㉙ ~ ㉛: Speed (0.1 km/h steps)

㉜ ~ ㉝: Date (UTC: yyyyymmddHHMMSS)

(y: Year, m: Month, d: Day,

H: Hour, M: Minute, S: Second)

㉞ ~ ㉟: See the table below.

| | ㉞ Power | ㉟ Height | ㊱ Gain | ㊲ Directivity |
|------|---------|-----------|--------|----------------|
| Data | (W) | (m/ft) | (dB) | (deg) |
| 0 | 0 | 3/10 | 0 | Omni-direction |
| 1 | 1 | 6/20 | 1 | 45° NE |
| 2 | 4 | 12/40 | 2 | 90° E |
| 3 | 9 | 24/80 | 3 | 135° SE |
| 4 | 16 | 49/160 | 4 | 180° S |
| 5 | 25 | 98/320 | 5 | 225° SW |
| 6 | 36 | 195/640 | 6 | 270° W |
| 7 | 49 | 390/1280 | 7 | 315° NW |
| 8 | 64 | 780/2560 | 8 | 360° N |
| 9 | 81 | 1561/5120 | 9 | — |

① The item, that is not contained the received data, is filled with "FF."

① FF: No signal has been received since the power was turned ON.

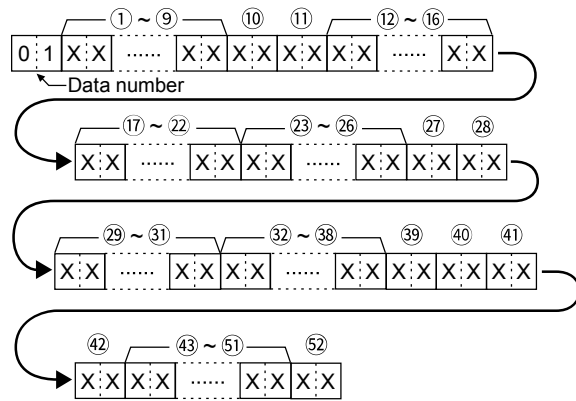
Remote control (CI-V) information

◇ Command formats

• GPS/D-PRS data (Continued)

Object

Command: 20 03 0101, 0201



- ① ~ ⑨: Call sign/SSID
(9 ASCII characters (A ~ Z, 0 ~ 9, /, -, space))
- ⑩, ⑪: Symbol (2 ASCII characters (00h ~ EFh))
- ⑫ ~ ⑯: Latitude (dd°mm.mmm format)
- ⑰ ~ ⑳: Longitude (ddd°mm.mmm format)
- ㉓ ~ ㉖: Altitude (0.1 meter steps)
- ㉗, ㉘: Course (1 degree steps)
- ㉙ ~ ㉛: Speed (0.1 km/h steps)
- ㉜ ~ ㉟: Date (UTC: yyyyymmddHHMMSS)
(y: Year, m: Month, d: Day,
H: Hour, M: Minute, S: Second)
- ㊸ ~ ㊺: See the table below.

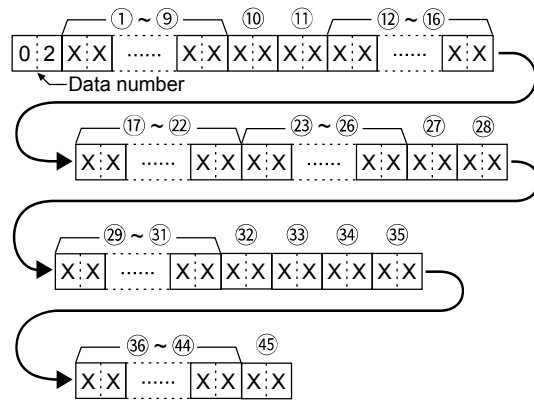
| | ㊸ Power | ㊹ Height | ㊺ Gain | ㊻ Directivity |
|------|---------|-----------|--------|----------------|
| Data | (W) | (m/ft) | (dB) | (deg) |
| 0 | 0 | 3/10 | 0 | Omni-direction |
| 1 | 1 | 6/20 | 1 | 45° NE |
| 2 | 4 | 12/40 | 2 | 90° E |
| 3 | 9 | 24/80 | 3 | 135° SE |
| 4 | 16 | 49/160 | 4 | 180° S |
| 5 | 25 | 98/320 | 5 | 225° SW |
| 6 | 36 | 195/640 | 6 | 270° W |
| 7 | 49 | 390/1280 | 7 | 315° NW |
| 8 | 64 | 780/2560 | 8 | 360° N |
| 9 | 81 | 1561/5120 | 9 | — |

- ㊼ ~ ㊾: Name
(9 ASCII characters (00h ~ EFh))
- ㊿: Type (1= Live, 0= Killed)

- ① The item, that is not contained the received data, is filled with "FF."
- ② FF: No signal has been received since the power was turned ON.

Item

Command: 20 03 0102, 0202



- ① ~ ⑨: Call sign/SSID
(9 ASCII characters (A ~ Z, 0 ~ 9, /, -, space))
- ⑩, ⑪: Symbol (2 ASCII characters (00h ~ EFh))
- ⑫ ~ ⑯: Latitude (dd°mm.mmm format)
- ⑰ ~ ⑳: Longitude (ddd°mm.mmm format)
- ㉓ ~ ㉖: Altitude (0.1 meter steps)
- ㉗, ㉘: Course (1 degree steps)
- ㉙ ~ ㉛: Speed (0.1 km/h steps)
- ㉜ ~ ㉟: See the table below.

| | ㉜ Power | ㉝ Height | ㉞ Gain | ㉟ Directivity |
|------|---------|-----------|--------|----------------|
| Data | (W) | (m/ft) | (dB) | (deg) |
| 0 | 0 | 3/10 | 0 | Omni-direction |
| 1 | 1 | 6/20 | 1 | 45° NE |
| 2 | 4 | 12/40 | 2 | 90° E |
| 3 | 9 | 24/80 | 3 | 135° SE |
| 4 | 16 | 49/160 | 4 | 180° S |
| 5 | 25 | 98/320 | 5 | 225° SW |
| 6 | 36 | 195/640 | 6 | 270° W |
| 7 | 49 | 390/1280 | 7 | 315° NW |
| 8 | 64 | 780/2560 | 8 | 360° N |
| 9 | 81 | 1561/5120 | 9 | — |

- ㊼ ~ ㊾: Name
(9 ASCII characters (00h ~ EFh))
- ㊿: Type (1= Live, 0= Killed)

- ① The item, that is not contained the received data, is filled with "FF."
- ② FF: No signal has been received since the power was turned ON.

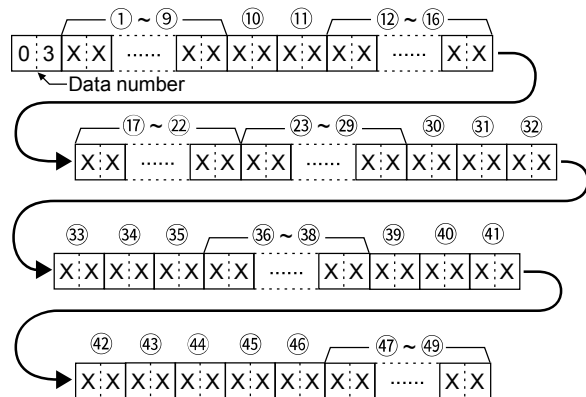
Remote control (CI-V) information

◇ Command formats

• GPS/D-PRS data (Continued)

Weather

Command: 20 03 0103, 0203

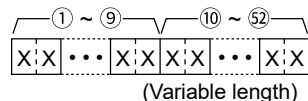


- ① ~ ⑨: Call sign/SSID
(9 ASCII characters (A ~ Z, 0 ~ 9, /, -, space))
- ⑩, ⑪: Symbol (2 ASCII characters (00h ~ EFh))
- ⑫ ~ ⑯: Latitude (dd°mm.mmm format)
- ⑰ ~ ⑳: Longitude (ddd°mm.mmm format)
- ㉓ ~ ㉙: Date (UTC: yyyyymmddHHMMSS)
(y: Year, m: Month, d: Day,
H: Hour, M: Minute, S: Second)
- ㉚, ㉛: Wind direction (1 degree steps)
- ㉜, ㉝: Wind speed (0.1 m/s steps)
- ㉞, ㉟: Gust speed (0.1 m/s steps)
- ㊱ ~ ㊲: Temperature (0.1°C steps)
- ㊳: Temperature (0= + degree, 1= - degree)
- ㊴, ㊵: Rainfall (0.1 mm steps)
- ㊶, ㊷: Rainfall (24 hours) (0.1 mm steps)
- ㊸, ㊹: Rainfall (Midnight) (0.1 mm steps)
- ㊺, ㊻: Humidity (1% steps)
- ㊼ ~ ㊾: Barometric pressure (0.1 hPa steps)

- ① The item, that is not contained the received data, is filled with "FF."
- ① FF: No signal has been received since the power was turned ON.

• GPS/D-PRS message

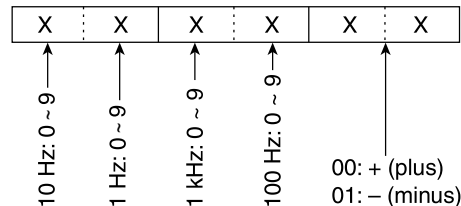
Command: 20 0401, 0402



- ① ~ ⑨: Call sign/SSID
(9 ASCII characters (A ~ Z, 0 ~ 9, /, -, space))
- ⑩ ~ ⑫: Message
(Up to 43 ASCII characters (00h ~ EFh))
- ① FF: No signal has been received since the power was turned ON.

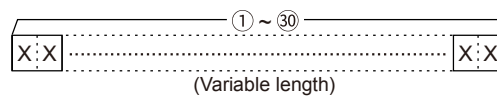
• RIT frequency settings

Command: 21 00



• DV TX data

Command: 22 00



- ① ~ ⑫: TX data (Up to 30 Byte)
- ① "FA" to "FF" are entered after converted to "FF 0A" to "FF 0F" automatically. Up to 60 Byte data can be entered in this case.

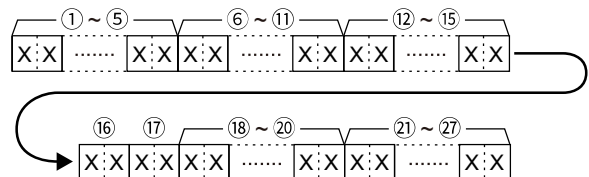
• DV RX data (transceiver)

Command: 22 0101

- ① ~ ⑫: RX data (Up to 30 Byte)
- ① "FA" to "FF" are entered after converted to "FF 0A" to "FF 0F" automatically. Up to 60 Byte data can be entered in this case.

• MY position data

Command: 23 00



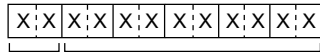
- ① ~ ⑫: Latitude (dd°mm.mmm format)
- ⑬ ~ ⑰: Longitude (ddd°mm.mmm format)
- ⑱ ~ ㉓: Altitude (0.1 meter steps)
- ⑱, ㉔: Course (1 degree steps)
- ⑲ ~ ㉖: Speed (0.1 km/h steps)
- ㉗ ~ ㉛: Date (UTC: yyyyymmddHHMMSS)
(y: Year, m: Month, d: Day,
H: Hour, M: Minute, S: Second)

Remote control (CI-V) information

◇ Command formats

• Selected or unselected VFO frequency settings

Command: 25



00=Selected VFO
01=Unselected VFO

Operating frequency
See "Operating frequency." (p. 16)

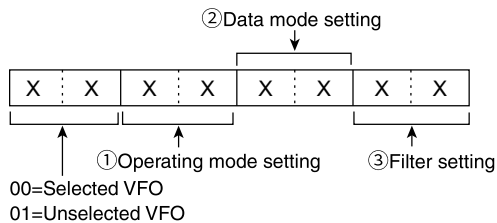
① When using the DR function, the transceiver returns "FA" (NG) because these cannot be set to 01.

- When VFO A is selected
00=frequency of VFO A changes
01=frequency of VFO B changes
- When VFO B is selected
00=frequency of VFO B changes
01=frequency of VFO A changes

• Selected or unselected VFO's operating mode and filter settings

Command: 26

Both data and filter settings can be skipped. In that case, "DATA OFF" and the default filter setting of the operating mode is automatically selected.



① When using the DR function, the transceiver returns "FA" (NG) because these cannot be set to 01.

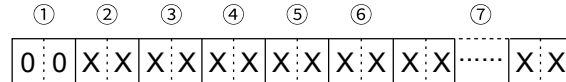
- When VFO A is selected
00 = operating mode of VFO A changes
01 = operating mode of VFO B changes
- When VFO B is selected
00 = operating mode of VFO B changes
01 = operating mode of VFO A changes

| ① Operating mode setting | ② Data mode setting | ③ Filter setting |
|--------------------------|---------------------|-------------------|
| 00:LSB | 05:FM | 00: Data mode OFF |
| 01:USB | 06:WFM | 01: Data mode ON |
| 02:AM | 07:CW-R | — |
| 03:CW | 08:RTTY-R | — |
| 04:RTTY | 17:DV | — |

• Scope waveform data

Command: 27 00

Outputs the waveform data to the controller.



- ①: 00 (Fixed)
- ② Order of division data (Current): 01~11
- ③ Division number (Maximum): 01(WLAN), 11(USB)
 - ① When data is sent to the controller using the WLAN function, all data is sent together. However, when the data is sent through the [microUSB] port, the data is divided by 11 and sent in sequential order.
 - ① The 1st data sends only the wave information (① ~ ⑥) without the waveform data (⑦). The 2nd or later data sends the minimum wave information (① ~ ③) with waveform data (⑦).

④ Center or Fixed mode data:

- 00 = Center mode scope
- 01 = Fixed mode scope

⑤ Waveform information:

The waveform information is different between the Center mode and the Fixed mode.

- In the Center mode:
Center frequency and span are sent. See page 16 for Operating frequency data, and the Scope span settings to the right.
- In the Fixed mode:
Lower edge and higher edge frequencies are sent See page 27 for Scope Fixed edge frequency settings ③ ~ ⑫.

⑥ Out of range information:

- 00 = In range
- 01 = Out of range

① If the scope data is out of range, the waveform data (⑦) is omitted.

⑦ Waveform data:

The transceiver outputs the drawn waveform data. The data range or data length of the waveform data is judged by the controller. (The data range is basically the same as the display size of the scope on the controller.)

- Data range: 0 ~ 160
- Data length: 475

Remote control (CI-V) information

◇ Command formats

- **Scope span settings** (in the Center mode Scope)

Command: 27 15

| ① | ② | ③ | ④ | ⑤ | ⑥ |
|-----------|-----------|------------------------|-----------------------|---------------------------|--------------------------|
| 0 0 | 0 0 | X X | X X | 0 0 | 0 0 |
| 0 (Fixed) | 0 (Fixed) | 10 Hz digit: 0 (Fixed) | 1 Hz digit: 0 (Fixed) | 1 kHz digit: 0, 2, 5 | 100 Hz digit: 0, 5 |
| | | | | 100 kHz digit: 0, 1, 2, 5 | 10 kHz digit: 0, 1, 2, 5 |
| | | | | 10 MHz digit: 0 (Fixed) | 1 MHz digit: 0 (Fixed) |
| | | | | 1 GHz digit: 0 (Fixed) | 100 MHz digit: 0 (Fixed) |

| Span (kHz) | |
|------------|-----|
| 2500 | 2.5 |
| 5000 | 5 |
| 10000 | 10 |
| 25000 | 25 |
| 50000 | 50 |
| 100000 | 100 |
| 250000 | 250 |
| 500000 | 500 |

- **Scope Reference level settings**

Command: 27 19

| | | | | | | | |
|-----------|-----------|----------------------|-------------------|--------------------|--------------------------|------|------|
| X | X | X | X | X | 0 | X | X |
| 0 (Fixed) | 0 (Fixed) | 10 dB digit: 0, 1, 2 | 1 dB digit: 0 ~ 9 | 0.1 dB digit: 0, 5 | 0.01 dB digit: 0 (Fixed) | 00 = | 01 = |

00 = + (plus)
01 = - (minus)

Adjustable range: $-20.0\text{ dB} \sim +20.0\text{ dB}$
in 0.5 dB steps.

- **Scope Fixed edge frequency settings**

Command: 27 1E

| | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| | X | X | 0 | X | X | X | X | 0 | X | X | X | X |
| Frequency range | ↑ | | | | | | | | | | | |
| Edge number: 01 ~ 03 | ↑ | | | | | | | | | | | |
| 10 Hz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 1 kHz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 100 Hz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 100 kHz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 10 MHz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 1 GHz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 100 MHz digit: 0 ~ 4 | ↑ | | | | | | | | | | | |
| 10 Hz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 1 kHz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 100 Hz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 100 kHz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 10 MHz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 1 GHz digit: 0 ~ 9 | ↑ | | | | | | | | | | | |
| 100 MHz digit: 0 ~ 4 | ↑ | | | | | | | | | | | |

Lower edge
Higher edge

① Entry of 100 Hz less than digits are ignored.

① Selectable Frequency ranges:

| Data | Frequency range (Hz) |
|------|----------------------|
| 01 | 0.03 ~ 1.60 |
| 02 | 1.60 ~ 2.00 |
| 03 | 2.00 ~ 6.00 |
| 04 | 6.00 ~ 8.00 |
| 05 | 8.00 ~ 11.00 |
| 06 | 11.00 ~ 15.00 |
| 07 | 15.00 ~ 20.00 |
| 08 | 20.00 ~ 22.00 |
| 09 | 22.00 ~ 26.00 |
| 10 | 26.00 ~ 30.00 |
| 11 | 30.00 ~ 45.00 |
| 12 | 45.00 ~ 60.00 |
| 13 | 60.00 ~ 74.80 |
| 14 | 74.80 ~ 108.00 |
| 15 | 108.00 ~ 137.00 |
| 16 | 137.00 ~ 200.00 |
| 17 | 400.00 ~ 470.00 |

② Selectable Edge number: 01=1, 02=2, 03=3

Count on us!

