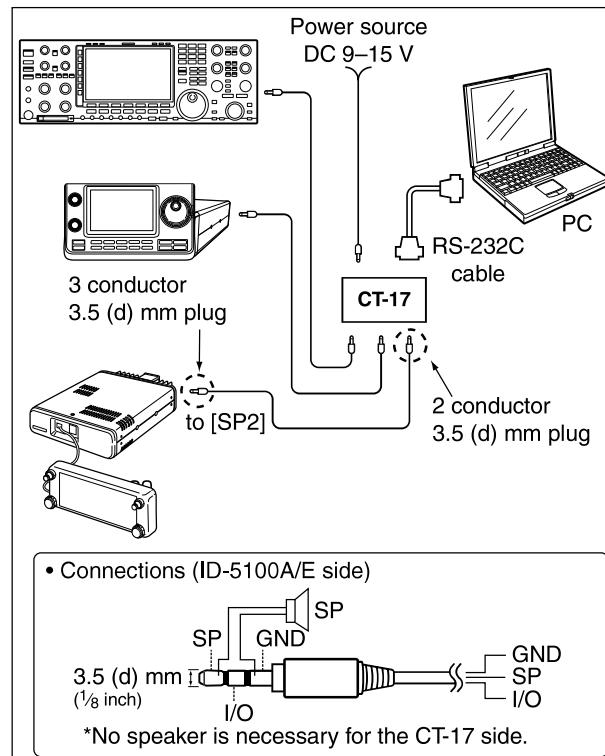


Remote jack (CI-V) information

◇ CI-V connection example

The transceiver can be connected through an optional CT-17 CI-V LEVEL CONVERTER to a PC equipped with an RS-232C port. The Icom Communications Interface-V (CI-V) controls the transceiver.

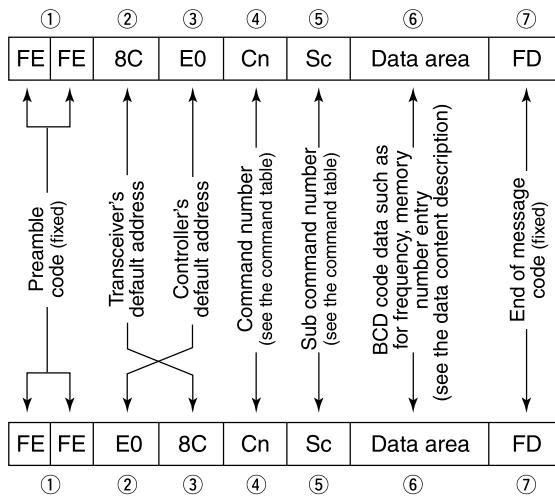
Up to 4 Icom CI-V transceivers or receivers can be connected to the PC. See page 12-57 for setting the CI-V condition using the set mode.



◇ Data format

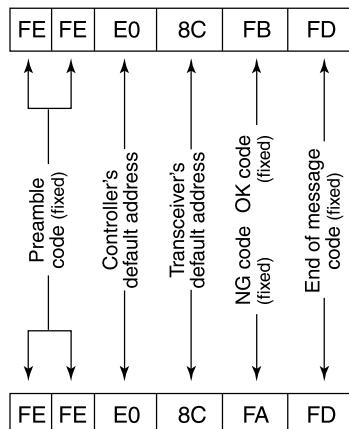
The CI-V system uses the following data formats. Data formats differ depending on command numbers. A data area or sub command is added to some commands.

Controller to ID-5100A/E



ID-5100A/E to controller

OK message to controller



NG message to controller

13 OTHER FUNCTIONS

Remote jack (CI-V) information (Continued)

◇ Command table

| Cmd. | Sub cmd. | Data | Description |
|------|----------|--------------|--|
| 00 | | see p. 13-18 | Send operating frequency for transceive |
| 01 | | see p. 13-18 | Send operating mode for transceive |
| 03 | | see p. 13-18 | Read operating frequency |
| 04 | | see p. 13-18 | Read operating mode |
| 05 | | see p. 13-18 | Send operating frequency |
| 06 | | see p. 13-18 | Send operating mode |
| 07 | | | Select VFO mode |
| D0 | | | Select A band Dualwatch: Set the Main band as the A band Single watch: Select the A band |
| D1 | | | Select B band Dualwatch: Set the Main band as the B band Single watch: Select the B band |
| 0C | | see p. 13-18 | Read frequency offset ^{*1} |
| 0D | | see p. 13-18 | Send frequency offset |
| 0F | | | Read duplex setting (10=simplex, 11=DUP-, 12=DUP+) |
| 10 | | | Set simplex operation |
| 11 | | | Set DUP- operation |
| 12 | | | Set DUP+ operation |
| 14 | 01 | 0000 to 0255 | Send/read audio output level (000=Minimum, 0128=Center, 0255=Maximum) |
| | 03 | 0000 to 0255 | Send/read squelch level (000=Minimum, 0128=Center, 0255=Maximum) |
| | 0A | see p. 13-18 | Send/read RF power setting |
| | 0B | see p. 13-18 | Send/read external microphone gain. |
| | 16 | see p. 13-18 | Send/read VOX gain. |
| 15 | 01 | 00 | Read noise/S-meter squelch status (squelch close) |
| | | 01 | Read noise/S-meter squelch status (squelch open) |
| | 02 | 0000 to 0255 | Read S-meter level (0000=S0, 0170=S9) |
| | 05 | 00 | Read tone squelch and RF squelch status (squelch close) |
| | | 01 | Read tone squelch and RF squelch status (squelch open) |
| | 11 | 0000 to 0255 | Read RF power meter (0026=LOW, 0077=MID, 0255=HIGH) |
| 16 | 42 | 00 | Send/read Repeater tone OFF |
| | | 01 | Send/read Repeater tone ON |
| | 43 | 00 | Send/read Tone squelch OFF |
| | | 01 | Send/read Tone squelch ON |
| | 46 | 00 | Send/read VOX function OFF |
| | | 01 | Send/read VOX function ON |
| | 4B | 00 | Send/read DTCS OFF |
| | | 01 | Send/read DTCS ON |
| | | 02 | Send/read Reversed DTCS ON |
| | 59 | 00 | Send/read single watch mode |
| | | 01 | Send/read Dualwatch mode |
| | 5B | 00 | Send/read DSQSL/CSQL OFF (DV mode only) |
| | | 01 | Send/read DSQSL ON (DV mode only) |
| | | 02 | Send/read CSQL ON (DV mode only) |
| | 5C | 00, 01, 02 | Send/read GPS TX mode (00=OFF, 01=D-PRS, 02=NMEA) |
| | 5D | 00 to 09 | Tone setting 00=OFF, 01=TONE, 02=TSQSL, 03=DTCS, 04=TSQSL-R, 05=DTCS-R, 06=DTCS (T), 07=TONE (T) / DTCS (R), 08=DTCS (T)/ TSQSL (R), 09=TONE (T) / TSQSL (R) |
| 18 | 00 | | Turning the transceiver power OFF |
| | 01 | | Turning the transceiver power ON ^{*2} |

| Cmd. | Sub cmd. | Data | Description |
|------|----------|------------------|--|
| 19 | 00 | | Read transceiver ID |
| 1B | 00 | see p. 13-18 | Send/read Repeater tone frequency |
| | 01 | see p. 13-18 | Send/read Tone squelch frequency |
| | 02 | see p. 13-18 | Send/read DTCS code and polarity |
| | 07 | see p. 13-18 | Send/read CSQL code (DV mode) |
| 1C | 00 | 00 | Send/read Transceiver's status (RX) |
| | | 01 | Send/read Transceiver's status (TX) |
| 1F | 00 | see p. 13-18 | Send/read DV MY call sign |
| | 01 | see p. 13-19 | Send/read DV TX call signs |
| | 02 | see p. 13-19 | Send/read DV TX message |
| 20 | 00 | 00 ^{*3} | Send/read Auto DV RX Call signs output OFF |
| | | 01 ^{*3} | Send/read Auto DV RX Call signs output ON |
| | 01 | see p. 13-19 | Output DV RX Call signs for transceive |
| | 02 | see p. 13-19 | Read DV RX Call signs for transceive |
| 01 | 00 | 00 ^{*3} | Send/read Auto DV RX message output OFF |
| | | 01 ^{*3} | Send/read Auto DV RX message output ON |
| | 01 | see p. 13-20 | Output DV RX message for transceive |
| | 02 | see p. 13-20 | Read DV RX message for transceive |
| 02 | 00 | 00 ^{*3} | Send/read Auto DV RX status output OFF |
| | | 01 ^{*3} | Send/read Auto DV RX status output ON |
| | 01 | see p. 13-20 | Output DV RX status for transceive |
| | 02 | see p. 13-20 | Read DV RX status for transceive |
| 03 | 00 | 00 | Send/read Auto DV RX GPS/D-PRS data output OFF |
| | | 01 | Send/read Auto DV RX GPS/D-PRS data output ON |
| | 01 | see p. 13-20 | Output DV RX GPS/D-PRS data for transceive |
| | 02 | see p. 13-20 | Read DV RX GPS/D-PRS data for transceive |
| 04 | 00 | 00 | Send/read Auto DV RX GPS/D-PRS message output OFF |
| | | 01 | Send/read Auto DV RX GPS/D-PRS message output ON |
| | 01 | see p. 13-22 | Output DV RX GPS/D-PRS message for transceive |
| | 02 | see p. 13-22 | Read DV RX GPS/D-PRS message for transceive |
| 22 | 00 | see p. 13-22 | Send/read DV TX data (Up to 30 byte) |
| 01 | 00 | 00 | Send/read Auto DV RX data output OFF |
| | | 01 | Send/read Auto DV RX data output ON |
| | 01 | see p. 13-22 | Send/read DV RX data (Up to 30 byte) |
| 02 | | 00, 01 | Send/read DV data TX setting (00=PTT, 01=Auto) |
| 03 | | 00, 01 | Send/read DV fast data setting (00=OFF, 01=ON) |
| 04 | | 00, 01 | Send/read GPS Data Speed setting (00=Slow, 01=Fast) |
| 05 | | 00~10 | Send/read TX Delay (PTT) setting (00=OFF, 01=1 sec. ~ 10=10 sec.) |
| 23 | 00 | see p. 13-22 | Read the position |
| 01 | | 00 | Send/read the GPS receiver OFF |
| | | 01 | Send/read the internal GPS ON |
| | | 02 | Send/read the external GPS ON |
| | | 03 | Send/read the manual input |
| 02 | | see p. 13-22 | Send/read manually input position |
| 24 | 00 | 00 | Send/read TX output power setting OFF |
| | | 01 | Send/read TX output power setting ON |
| | 01 | 00 | TX output power setting OFF for transceive |
| | | 01 | TX output power setting ON for transceive |

^{*1} Below 100 Hz is omitted.

^{*2} When sending the power ON command (18 01), the command "FE" must be sent before the basic format.

• 19200bps: 25 • 9600bps: 13 • 4800bps: 7

13 OTHER FUNCTIONS

Remote jack (CI-V) information (Continued)

e.g.: When operating with 4800 bps

| | | | | | | | | | | |
|----|---|---|---|---|---|---|---|---|---|---|
| F | E | F | E | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| x7 | | | | | | | | | | |

- ① Preamble code (fixed) ② Transceiver's default address
③ Controller's default address ④ Command number
⑤ Sub command number ⑦ End of message code (fixed)

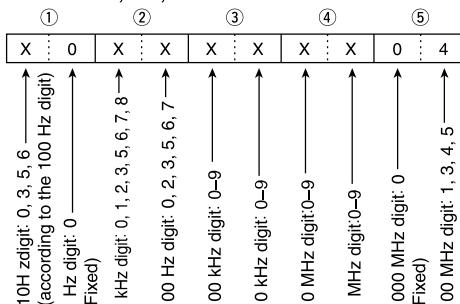
*³ Output setting is automatically turned OFF after turning the power OFF, then ON.

13 OTHER FUNCTIONS

Remote jack (CI-V) information (Continued)

• Receive frequency setting

Command: 00, 03, 05



| 100 Hz digit | 10 Hz digit |
|--------------|-------------|
| 0 | 0 |
| 2 | 5 |
| 3 | 3 |
| 5 | 0 |
| 6 | 6 |
| 7 | 5 |

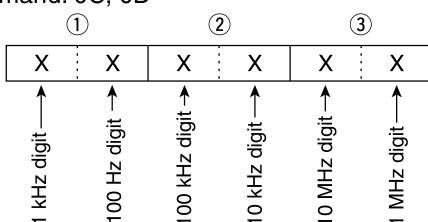
• Operating mode

Command: 01, 04, 06

| ① | ② | |
|-----------------------|-----------|---------------------|
| X : X | X : X | |
| Operating mode | | |
| AM | ① Mode 02 | ② Filter setting 01 |
| AM-N | 02 | 02 |
| FM | 05 | 01 |
| FM-N | 05 | 02 |
| DV | 17 | 01 |

• Duplex Frequency offset setting

Command: 0C, 0D



• RF power level setting

Command: 14 0A

| LOW | MID | HIGH |
|-----------|-----------|-----------|
| 0000-0026 | 0027-0127 | 0128-0255 |

• External microphone gain setting

Command: 14 0B

| 1 | 2 | 3 | 4 |
|-----------|-----------|-----------|-----------|
| 0000-0063 | 0064-0127 | 0128-0191 | 0192-0255 |

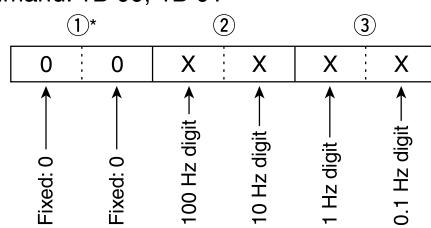
• VOX gain setting

Command: 14 16

| OFF | 1 | 2 | 3 | 4 |
|-----------|-----------|-----------|-----------|-----------|
| 0000-0022 | 0023-0046 | 0047-0069 | 0070-0092 | 0093-0115 |
| 5 | 6 | 7 | 8 | 9 |
| 0016-0139 | 0140-0162 | 0163-0185 | 0186-0208 | 0209-0232 |
| 10 | | | | |
| 0233-0255 | | | | |

• Repeater tone/tone squelch frequency setting

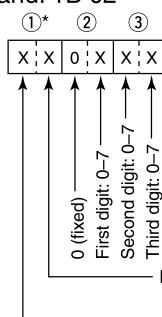
Command: 1B 00, 1B 01



*Not necessary when setting a frequency.

• DTCS code and polarity setting

Command: 1B 02

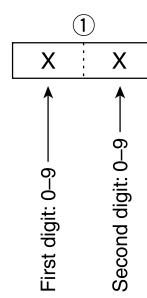


Receive polarity: 0: Normal
1: Reverse

Transmit polarity: 0: Normal
1: Reverse

• Digital code squelch setting

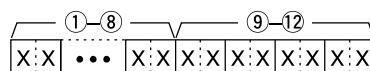
Command: 1B 07



• DV MY call sign setting

Command: 1F 00

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



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

⑨-⑫: Note setting (4 characters)

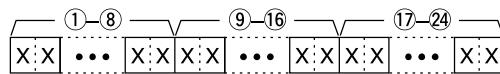
13 OTHER FUNCTIONS

Remote jack (CI-V) information (Continued)

• DV TX call signs setting (24 characters)

Command: 1F 01

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



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

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

⑰-㉔: 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.

“FF” stops sending or reading messages.

| Character | ASCII code | Character | ASCII code |
|-----------|------------|-----------|------------|
| A-Z | 41-5A | a-z | 61-7A |
| 0-9 | 30-39 | Space | 20 |
| ! | 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 |

• DV RX call sign data

Command: 20 0001, 20 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 | NUL |

③-⑩: Call sign of the caller station (8 characters; fixed)

⑪-⑭: Note of the caller station (4 characters; fixed)

⑮-㉔: Call sign of the called station (8 characters; fixed)

㉓-㉔: Call sign of the access/area repeater (R1) (8 characters; fixed)

㉕-㉖: Call sign of the link/gateway repeater (R2) (8 characters; fixed)

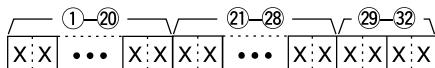
• “FF” stands for no call sign receiving after turning ON the transceiver.

13 OTHER FUNCTIONS

Remote jack (CI-V) information (Continued)

• DV RX message

Command: 20 0101, 20 0102



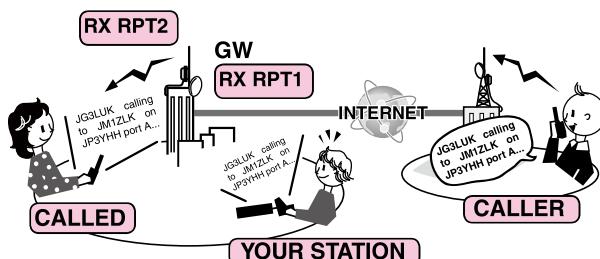
①-⑩: Message (20 characters)

⑪-⑯: Call sign of the caller station (8 characters)

⑰-⑲: Note of the caller station (4 characters)

• FF: When no call sign is received since the transceiver power 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

*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

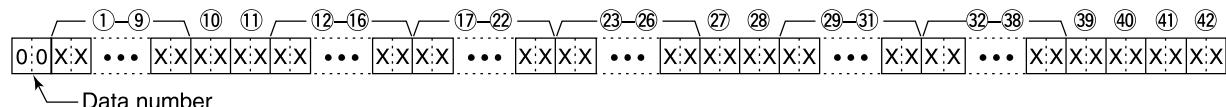
• DV RX Status setting

Command: 20 0201, 20 0202

| Data | Function | Description |
|------|-----------|--|
| bit7 | 0 (Fixed) | — |
| bit6 | 0/1 | Receiving a voice call During 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 During receiving a BK call, select "1." |
| bit2 | 0/1 | Receiving a EMR call During 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 During displaying a packet loss |

• GPS/D-PRS data—Position

Command: 20 0301, 20 0302



①-⑩: Call sign/SSID

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

⑪, ⑫: Symbol

*2 ASCII characters (00h-EFh)

⑬-⑯: Latitude (dd°mm.mmm format)

⑰-⑲: Longitude (ddd°mm.mmm format)

⑳-㉑: Altitude (0.1 meter steps)

㉒, ㉓: Course (1 degree steps)

㉔-㉖: Speed (0.1 km/h steps)

㉗-㉙: Date (UTC: yyyyymmddHHMMSS)

*y: Year, m: Month, d: Day, H: Hour, M: Minute, S: Second

㉚: Power (see the table below)

㉛: Height (see the table below)

㉜: Gain (see the table below)

㉝: Directivity (see the table below)

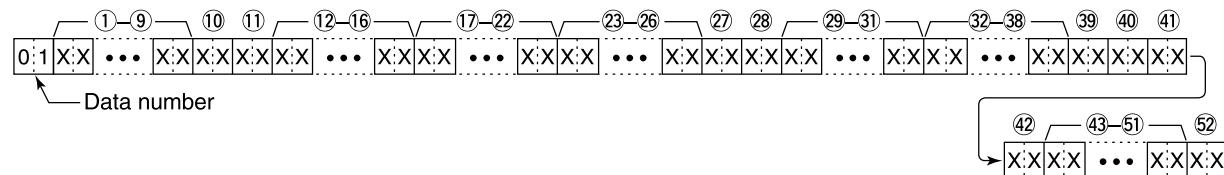
| Data | Power (W) | Height (m/ft) | Gain (dB) | Directivity (deg) |
|------|--------------|------------------|--------------|----------------------|
| 0 | 0 | 3/10 | 0 | Omni-direction |
| 1 | 1 | 6/20 | 1 | 45° NE |
| 2 | 4 | 12/40 | 2 | 90° E |
| 3 | 9 | 24/80 | 3 | 135° SE |
| 4 | 16 | 49/160 | 4 | 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 | — |

13 OTHER FUNCTIONS

Remote jack (CI-V) information (Continued)

- GPS/D-PRS data— Object

Command: 20 0301, 20 0302



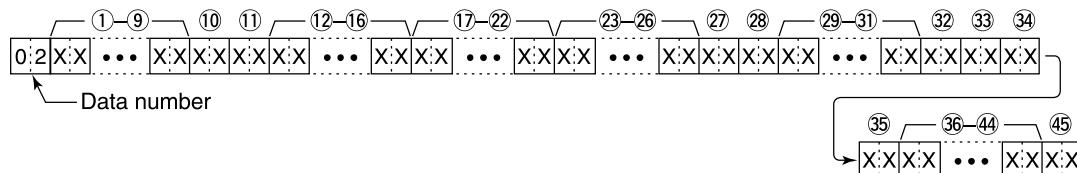
- ①–⑨: Call sign/SSID
*9 ASCII characters (A–Z, 0–9, /, -, space)
 - ⑩, ⑪: Symbol
*2 ASCII characters (00h–EFh)
 - ⑫–⑯: Latitude (dd°mm.mmm format)
 - ⑰–㉑: Longitude (ddd°mm.mmm format)
 - ㉒–㉖: Altitude (0.1 meter steps)
 - ㉗, ㉘: Course (1 degree steps)
 - ㉙–㉛: Speed (0.1 km/h steps)
 - ㉜–㉝: Date (UTC: yyyyymmddHHMMSS)
*y: Year, m: Month, d: Day, H: Hour, M: Minute,
S: Second
 - ㉞: Power (see the table to the right)
 - ㉟: Height (see the table to the right)
 - ㉟: Gain (see the table to the right)
 - ㉟: Directivity (see the table to the right)

| | Power | Height | Gain | 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 | — |

- ④③-⑤①: Name
 *9 ASCII characters (00h-EFh)
⑤②: Type (1=Live, 0=Killed)

- GPS/D-PRS data— Item

Command: 20 0301, 20 0302



- 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)
 - ⑰–㉑: Longitude (ddd°mm.mmm format)
 - ㉒–㉖: Altitude (0.1 meter steps)
 - ㉗, ㉘: Course (1 degree steps)
 - ㉙–㉛: Speed (0.1 km/h steps)
 - ㉜: Power (see the table to the right)
 - ㉝: Height (see the table to the right)
 - ㉞: Gain (see the table to the right)
 - ㉟: Directivity (see the table to the right)

| | Power (W) | Height (m/ft) | Gain (dB) | Directivity (deg) |
|-------------|---------------------|-------------------------|---------------------|-----------------------------|
| Data | | | | |
| 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 | — |

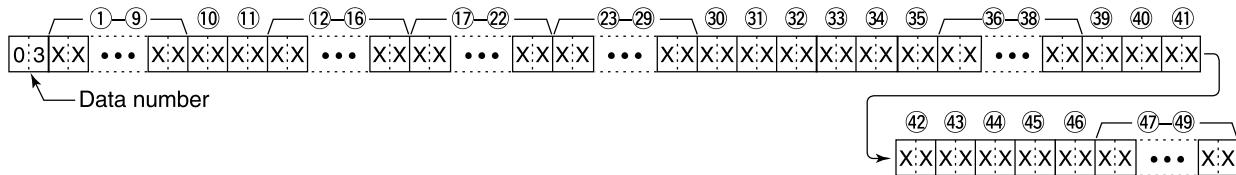
- ⑩-⑭: Name
*9 ASCII characters (00h-EFh)
⑮: Type (1=Live, 0=Killed)

13 OTHER FUNCTIONS

Remote jack (CI-V) information (Continued)

• GPS/D-PRS data—Weather

Command: 20 0301, 20 0302



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)

⑰–㉑: Longitude (ddd°mm.mmm format)

㉒–㉙: Date (UTC: yyyyymmddHHMMSS)

*y: Year, m: Month, d: Day, H: Hour, M: Minute,
S: Second

㉓, ㉔: Wind direction (1 degree steps)

㉕, ㉖: Wind speed (0.1 m/s steps)

㉗, ㉘: Gust speed (0.1 m/s steps)

㉙–㉚: Temperature (0.1°C steps)

㉛: Temperature (0=+ degree, 1=-- degree)

㉜, ㉝: Rainfall (0.1 mm steps)

㉞, ㉟: Rainfall (24 hours) (0.1 mm steps)

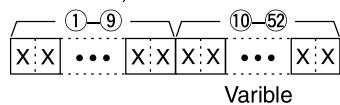
㉟, ㉟: Rainfall (Midnight) (0.1 mm steps)

㉛, ㉛: Humidity (1% steps)

㉛–㉛: Barometric pressure (0.1 hPa steps)

• GPS/D-PRS message

Command: 20 0401, 20 0402



①–⑨: Call sign/SSID

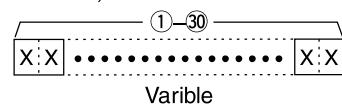
*9 ASCII characters (A–Z, 0–9, /, -, space)

⑩–㉑: Message

*Up to 43 ASCII characters (00h–EFh)

• DV TX data, DV RX data (transceive)

Command: 22 00, 22 01 01

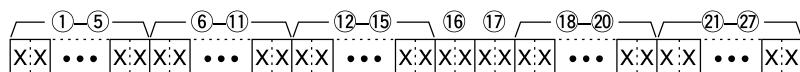


①–㉓: Tx, data Rx data (Up to 30 Byte)

**“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



①–⑤: Latitude (dd°mm.mmm format)

⑥–⑪: Longitude (ddd°mm.mmm format)

⑫–㉑: Altitude (0.1 meter steps)

㉒, ㉓: Course (1 degree steps)

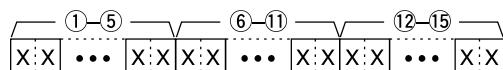
㉔–㉖: Speed (0.1 km/h steps)

㉗–㉙: Date (UTC: yyyyymmddHHMMSS)

*y: Year, m: Month, d: Day, H: Hour, M: Minute,
S: Second

• Manually input position data

Command: 23 02



①–⑤: Latitude (dd°mm.mmm format)

⑥–⑪: Longitude (ddd°mm.mmm format)

⑫–㉑: Altitude (0.1 meter steps)