

SONY®

FLAT WIDE DISPLAY MONITOR

FWD-S47H1/S42H1

PROTOCOL MANUAL (For Customer)

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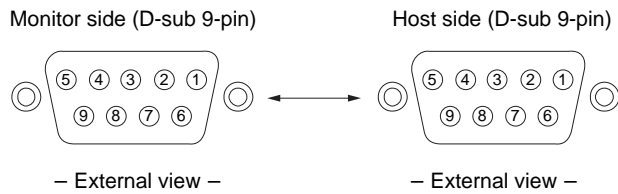
Section 1

RS-232C

1. Communication Parameters

| | |
|----------------------|--------------|
| Communication method | RS-232C |
| Synchronous method | Asynchronous |
| Baud rate | 9600bps |
| Character length | 8bit |
| Parity | None |
| Start bit length | 1bit |
| Stop bit length | 1bit |
| Flow control | None |

2. Pin Assignment



| Pin No. | Function |
|---------|----------|
| 1 | NC |
| 2 | TXD |
| 3 | RXD |
| 4 | NC |
| 5 | GND |
| 6 | NC |
| 7 | NC |
| 8 | NC |
| 9 | NC |

| Pin No. | Function |
|---------|----------|
| 1 | NC |
| 2 | RXD |
| 3 | TXD |
| 4 | NC |
| 5 | GND |
| 6 | NC |
| 7 | NC |
| 8 | NC |
| 9 | NC |

3. Communication Data Format

(a) Control message

| No. | Item | Value |
|-----|----------------|---------------|
| 1 | Header | 0x8C: Control |
| 2 | Category | 0xXX |
| 3 | Function | 0xXX |
| 4 | Data1 (Length) | 0xXX |
| 5 | Data2 (Data1) | 0xXX |
| : | : | 0xXX |
| : | : | 0xXX |
| X | DataX | 0xXX |
| X+1 | Check Sum | 0xXX |

- * Check Sum: Sum total of 1 to X. Lower one-byte data is validated when a value exceeds 255 (1byte).
- * Set the command interval to 500 ms or more when transmitting the Control command continuously.
- * Set the command interval to 500 ms or more when transmitting the same command (Enquiry) after the Control command.

(b) Enquiry message

| No. | Item | Value |
|-----|-----------|---------------|
| 1 | Header | 0x83: Enquiry |
| 2 | Category | 0xXX |
| 3 | Function | 0xXX |
| 4 | Data1 | 0xFF |
| 5 | Data2 | 0xFF |
| 6 | Check Sum | 0xXX |

* Check Sum: Sum total of 1 to X, lower one-byte data is validated when a value exceeds 255 (1byte).

(c) Answer message

① Control answer

| No. | Item | Value |
|-----|-----------|--|
| 1 | Header | 0x70: Answer |
| 2 | Answer* | 0x00: Completed 0x01: Limit Over 0x02: Limit Under 0x03: Command Canceled |
| 3 | Check Sum | 0xXX |

* 0x00: Completed Packet is correctly received and process is also correctly completed.
0x01: Limit Over Packet is correctly received, but the data value is over the upper limit.
0x02: Limit Under Packet is correctly received, but the data value under the lower limit.
0x03: Command Canceled Packet is correctly received, but the data value is not correct or the request cannot be accepted in the current host state.
* Check Sum: Sum total of 1 to X, lower one-byte data is validated when a value exceeds 255 (1byte).

② Enquiry answer (Complete)

| No. | Item | Value |
|-----|------------------|-----------------|
| 1 | Header | 0x70: Answer |
| 2 | Answer | 0x00: Completed |
| 3 | Return Data Size | 0xXX |
| 4 | Return Data1 | 0xXX |
| : | : | 0xXX |
| : | : | 0xXX |
| X | Return DataX | 0xXX |
| X+1 | Check Sum | 0xXX |

* 0x00: Completed Packet is correctly received and process is also correctly completed.
* Return Data: Returns the read value.
* Check Sum: Sum total of 1 to X, lower one-byte data is validated when a value exceeds 255 (1byte).

③ Enquiry answer (Command cancel)

| No. | Item | Value |
|-----|-----------|------------------------|
| 1 | Header | 0x70: Answer |
| 2 | Answer | 0x03: Command Canceled |
| 3 | Check Sum | 0x73 |

0x03: Command Canceled Packet is correctly received, but the data value is not correct or the request cannot be accepted in the current host state.

④ Error answer

| No. | Item | Value |
|-----|-----------|-------------------------|
| 1 | Header | 0xE0: Answer |
| 2 | Answer* | 0x00: No Function Error |
| | | 0x01: Check Sum Error |
| | | 0x02: Data Length Error |
| 3 | Check Sum | 0xXX |

* 0x00: No Function Error Packet header,category or function code are not included in this protocol.
 0x01: Check Sum Error Check sum value of received packet is not correct.
 0x02: Data Length Error The data size of received packet is not correct.

4. General Function

(a) Mode Control

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------------------|-------|----------------------|-----------|
| Control | 0x8C | 0x00 | Code Table (1-a) [a] | 0x02 | Code Table (1-a) [b] | 0xXX |
| Enquiry | 0x83 | | | 0xFF | 0xFF | 0xXX |

| Answer | Header | Answer | Check Sum | |
|---------|--------|--------|-----------|------------------|
| Control | 0x70 | 0x00 | 0x70 | Completed |
| | 0x70 | 0x01 | 0x71 | Limit Over |
| | 0x70 | 0x02 | 0x72 | Limit Under |
| | 0x70 | 0x03 | 0x73 | Command Canceled |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Check Sum | |
|---------|--------|--------|---------------------|----------------------|-----------|-----------|
| Enquiry | 0x70 | 0x00 | 0x02 | Code Table (1-a) [b] | 0xXX | Completed |

Code Table (1-a)

| [a]Function | | [b]Range/Switch Code | | Command Control | Enquiry | Standby | Power On |
|-------------|----------------------------|----------------------|------------------|-----------------|---------|---------|----------|
| 0x00 | Power | 0x00 | OFF | Yes | Yes | Enable | Enable |
| | | 0x01 | ON | | | | |
| 0x01 | Input Select ^{*1} | 0x08 | HD15 RGB | Yes | Yes | Disable | Enable |
| | | 0x09 | HD15 YUV | | | | |
| | | 0x0E | OPTION RGB | | | | |
| | | 0x0F | OPTION COMPONENT | | | | |
| | | 0x20 | DVI | | | | |
| | | 0x30 | VIDEO | | | | |
| | | 0x31 | S-VIDEO | | | | |
| 0x02 | Force Status Display | 0x00 | ON | Yes | Yes | Disable | Enable |
| | | 0x01 | OFF | | | | |
| 0x03 | Audio Mute | 0x00 | OFF | Yes | Yes | Disable | Enable |
| | | 0x01 | ON | | | | |
| 0x04 | Auto Status Display | 0x00 | ON | Yes | Yes | Enable | Enable |
| | | 0x01 | OFF | | | | |

(Continued)

Code Table (1-a)

| [a]Function | | [b]Range/Switch Code | | Command Control | Enquiry | Standby | Power On |
|-------------|-------------------------|----------------------|----------------------|-----------------|---------|---------|----------|
| 0x06 | Color System | 0x00 | Auto | Yes | Yes | Disable | Enable |
| | | 0x01 | NTSC | | | | |
| | | 0x02 | NTSC4.43 | | | | |
| | | 0x03 | PAL | | | | |
| | | 0x05 | PAL-M | | | | |
| | | 0x06 | PAL-N | | | | |
| | | 0x07 | PAL60 | | | | |
| | | 0x0F | Language | | | | |
| 0x01 | English | | | | | | |
| 0x02 | Deutsch | | | | | | |
| 0x03 | Français | | | | | | |
| 0x04 | Español | | | | | | |
| 0x05 | Italiano | | | | | | |
| 0x10 | Index Number | 0x01-0xFF | | Yes | Yes | Disable | Enable |
| 0x12 | Standby Power | 0x00 | Standard | Yes | Yes | Disable | Enable |
| | | 0x01 | Low | | | | |
| 0x13 | ECO Mode (Power Saving) | 0x00 | Off | Yes | Yes | Disable | Enable |
| | | 0x01 | ECO High | | | | |
| | | 0x02 | ECO Low | | | | |
| 0x14 | Speaker Out | 0x00 | ON | Yes | Yes | Disable | Enable |
| | | 0x01 | OFF | | | | |
| 0x18 | Sync Mode | 0x00 | H/Comp | Yes | Yes | Disable | Enable |
| | | 0x01 | Video | | | | |
| 0x1B | Clock Display | 0x00 | OFF | Yes | Yes | Disable | Enable |
| | | 0x01 | ON | | | | |
| 0x24 | Input Detect (Option) | 0x00 | FW12 (HD15) | No | Yes | Disable | Enable |
| | | 0x02 | FW11 (BNC) | | | | |
| | | 0x03 | Reserved | | | | |
| | | 0x05 | FW50 (RGB) | | | | |
| | | 0x06 | FW21 (UART + CTRL-S) | | | | |
| | | 0x08 | FW15 (HDMI × 2) | | | | |
| | | 0x09 | FW16 (HD-SDI) | | | | |
| | | 0x0A | Reserved | | | | |
| | | 0x0B | Reserved | | | | |
| | | 0x0C | Reserved | | | | |
| | | 0x0D | Reserved | | | | |
| | | 0x0E | Reserved | | | | |
| | | 0x0F | Not Connect | | | | |

(Continued)

Code Table (1-a)

| [a]Function | | [b]Range/Switch Code | | Command Control | Enquiry | Standby | Power On |
|-------------|------------------------------|----------------------|-----------------------------|-----------------|---------|---------|----------|
| 0x26 | Auto Shut OFF | 0x00 | OFF | Yes | Yes | Disable | Enable |
| | | 0x01 | ON | | | | |
| 0x27 | Auto Screen Adjust | 0x00 | OFF | Yes | Yes | Disable | Enable |
| | | 0x01 | ON | | | | |
| 0x30 | PAP | 0x00 | OFF | Yes | Yes | Disable | Enable |
| | | 0x01 | P&P | | | | |
| | | 0x02 | PinP | | | | |
| 0x31 | Active Picture | 0x00 | Left (P&P)/Main (PinP) | Yes | Yes | Disable | Enable |
| | | 0x01 | Right (P&P)/Sub (PinP) | | | | |
| | | 0x02 | Swap | | | | |
| 0x32 | Picture Size (P&P) | 0x00-0x0E | | Yes | Yes | Disable | Enable |
| 0x33 | Sub Picture Size (PinP) | 0x00 | Large | Yes | Yes | Disable | Enable |
| | | 0x01 | Small | | | | |
| 0x34 | Picture Position (PinP) | 0x00 | Position1 | Yes | Yes | Disable | Enable |
| | | 0x01 | Position2 | | | | |
| | | 0x02 | Position3 | | | | |
| | | 0x03 | Position4 | | | | |
| 0x35 | PAP Input Detect (Left/Main) | 0x08 | HD15 RGB | No | Yes | Disable | Enable |
| | | 0x09 | HD15 YUV | | | | |
| | | 0x0E | OPTION RGB | | | | |
| | | 0x0F | OPTION COMPONENT | | | | |
| | | 0x20 | DVI | | | | |
| | | 0x30 | VIDEO | | | | |
| | | 0x31 | S-VIDEO | | | | |
| | | 0x84 | Option Digital1 (HDMI1/SDI) | | | | |
| 0x85 | Option Digital2 (HDMI2) | | | | | | |
| 0x36 | PAP Input Detect (Right/Sub) | 0x08 | HD15 RGB | No | Yes | Disable | Enable |
| | | 0x09 | HD15 YUV | | | | |
| | | 0x0E | OPTION RGB | | | | |
| | | 0x0F | OPTION COMPONENT | | | | |
| | | 0x20 | DVI | | | | |
| | | 0x30 | VIDEO | | | | |
| | | 0x31 | S-VIDEO | | | | |
| | | 0x84 | Option Digital1 (HDMI1/SDI) | | | | |
| 0x85 | Option Digital2 (HDMI2) | | | | | | |

(Continued)

Code Table (1-a)

| [a]Function | | [b]Range/Switch Code Control | | Command Enquiry | Standby | Power On | |
|-------------|--------------------|------------------------------|---------------------------------|-----------------|---------|----------|--------|
| 0x40 | Screen Saver | 0x00 | OFF | Yes | Yes | Disable | Enable |
| | | 0x01 | All White ON | | | | |
| | | 0x02 | Sweep ON | | | | |
| | | 0x03 | Standby | | | | |
| 0x43 | Back Light | 0x00-0x64 | | Yes | Yes | Disable | Enable |
| 0x44 | Logo Illumination | 0x00 | Logo Off | Yes | Yes | Enable | Enable |
| | | 0x01 | Logo On (Low) | | | | |
| | | 0x02 | Logo On (High) | | | | |
| 0x45 | Control Mode | 0x00 | Main + Remocon | Yes | Yes | Disable | Enable |
| | | 0x01 | Main | | | | |
| | | 0x02 | Remocon | | | | |
| | | 0x03 | All Off | | | | |
| | | 0x04 | Limited ^{*2} | | | | |
| 0x46 | On Off Timer Mode | 0x00 | Every Day (Repeat) | Yes | Yes | Enable | Enable |
| | | 0x01 | Day Of Week | | | | |
| 0x47 | On Timer Enable | bit0 | Sunday 1: Enable, 0: Disable | Yes | Yes | Enable | Enable |
| | | bit1 | Monday 1: Enable, 0: Disable | | | | |
| | | bit2 | Tuesday 1: Enable, 0: Disable | | | | |
| | | bit3 | Wednesday 1: Enable, 0: Disable | | | | |
| | | bit4 | Thursday 1: Enable, 0: Disable | | | | |
| | | bit5 | Friday 1: Enable, 0: Disable | | | | |
| | | bit6 | Saturday 1: Enable, 0: Disable | | | | |
| | | bit7 | Every day 1: Enable, 0: Disable | | | | |
| 0x48 | Off Timer Enable | bit0 | Sunday 1: Enable, 0: Disable | Yes | Yes | Enable | Enable |
| | | bit1 | Monday 1: Enable, 0: Disable | | | | |
| | | bit2 | Tuesday 1: Enable, 0: Disable | | | | |
| | | bit3 | Wednesday 1: Enable, 0: Disable | | | | |
| | | bit4 | Thursday 1: Enable, 0: Disable | | | | |
| | | bit5 | Friday 1: Enable, 0: Disable | | | | |
| | | bit6 | Saturday 1: Enable, 0: Disable | | | | |
| | | bit7 | Every day 1: Enable, 0: Disable | | | | |
| 0x65 | IP Setting Mode | 0x00 | DHCP | Yes | Yes | Enable | Enable |
| | | 0x01 | Manual | | | | |
| | | 0x02 | Speed | | | | |
| 0x66 | IP Setting Execute | 0x00 | Shut Down | No | Yes | Enable | Enable |
| | | 0x01 | IP Setting | | | | |
| | | 0x02 | NVR Reset | | | | |
| | | 0x03 | Alarm | | | | |
| | | 0x04 | LAN FW version | | | | |

(Continued)

Code Table (1-a)

| [a]Function | [b]Range/Switch Code | Command Control | Enquiry | Standby | Power On | |
|--|----------------------|----------------------------|---------|---------|----------|--------|
| 0x67 IP Setting Result | 0x00 | Done | Yes | No | Enable | Enable |
| | 0x01 | Error 1 (UART Commu.) | | | | |
| | 0x02 | Error 2 (Duplication) | | | | |
| | 0x03 | Error 3 (IP Add Setting) | | | | |
| | 0x04 | Error 4 (GW Add setting) | | | | |
| | 0x05 | Error 5 (DNS1 Setting) | | | | |
| | 0x06 | Error 6 (DNS2 Setting) | | | | |
| | 0x07 | Error 7 (Sbnt Msk Setting) | | | | |
| 0x68 Speed Setting | 0x00 | 100Mbps/Full Duplex | Yes | Yes | Enable | Enable |
| | 0x01 | 100Mbps/Half Duplex | | | | |
| | 0x02 | 10Mbps/Full Duplex | | | | |
| | 0x03 | 10Mbps/Half Duplex | | | | |
| | 0x04 | Auto | | | | |
| 0x70 Input Skip | bit0 | HD15 | Yes | Yes | Disable | Enable |
| | bit1 | DVI | | | | |
| | bit2 | Reserved | | | | |
| | bit3 | VIDEO | | | | |
| | bit4 | S-VIDEO | | | | |
| | bit5 | Reserved | | | | |
| | bit6 | Reserved | | | | |
| | bit7 | Reserved | | | | |
| 0x71 Default Input | 0x00 | Last Memory | Yes | Yes | Enable | Enable |
| | 0x01 | Option | | | | |
| 0x74 Digital Signal Detect (DVI/HDMI/etc.) ^{*3} | 0x00 | VIDEO | No | Yes | Disable | Enable |
| | 0x01 | PC | | | | |
| 0x75 Signal Status ^{*4} | 0x00 | Stable | No | Yes | Disable | Enable |
| | 0x01 | Unstable/No Signal | | | | |
| 0x76 VIDEO Signal Detect | 0x00 | NTSC | No | Yes | Disable | Enable |
| | 0x01 | PAL | | | | |
| 0x7A Logo Position | 0x00 | Auto | Yes | Yes | Enable | Enable |
| | 0x01 | Landscape | | | | |
| | 0x02 | Portrait | | | | |
| 0x7D Power Management Mode ^{*5} | 0x00 | OFF | Yes | Yes | Disable | Enable |
| | 0x01 | ON | | | | |

Code Table (1-a)

| [a]Function | [b]Range/Switch Code | Command Control | Enquiry | Standby | Power On |
|---------------------|-----------------------|-----------------|---------|---------|----------|
| 0x7E On Screen Logo | 0x00 OFF | Yes | Yes | Enable | Enable |
| | 0x01 ON (Default) | | | | |
| | 0x02 Reserved | | | | |
| 0x7F LED | 0x00 OFF | Yes | Yes | Disable | Enable |
| | 0x01 ON | | | | |
| 0x81 Power On Delay | 0x00-0x78 1sec x Data | Yes | Yes | Enable | Enable |

*1: Auto Signal Detect becomes Disable. When Option Slot is connected, Option command is Enable.

*2: Restricts a part of keys operation following below.

[Remote Commander]

Menu, Picture, Sound, ECO (Power Saving), Contrast+/-, Brightness, Chroma, H Shift, V Shift, V size, PAP

[Main]

Menu

*3: Digital Signal Status is Enable for Digital Input Signal Detect Function only in Stable.

*4: Digital Signal or VIDEO Signal is Enable. Return Signal Status of Active Window.

*5: Only the panel power supply is turned off at the standby when setting it "ON".

5. Analog Signal Detect Function

(a) Mode Control

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------------------|------------------|-------|-----------|
| Enquiry | 0x83 | 0x00 | Code Table (1-a) [a] | Code Table (1-d) | 0xFF | 0xFF |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Data2 | Check Sum |
|---------|--------|--------|---------------------|----------------------|-------|----------------|
| Enquiry | 0x70 | 0x00 | 0x02 | Code Table (1-a) [b] | 0xFF | 0xFF Completed |

Code Table (1-a)

| [a]Function | [b]Range/Switch Code | Command Control | Enquiry | Standby | Power On |
|---------------------------|----------------------|-----------------|---------|---------|----------|
| 0x78 Analog Signal Detect | 0x00 VIDEO | No | Yes | Disable | Enable |
| | 0x01 PC | | | | |

Code Table (1-d)

| Input Select |
|--------------------|
| 0x00 Main |
| 0x01 Sub |
| 0xFF Present input |

1-a[b]

When input is no signal or not supported signal, return value become Video(0x00).

6. Priority Signal Select Function

(a) Mode Control

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------------------|------------------|-------|-----------|
| Enquiry | 0x83 | 0x00 | Code Table (2-a) [a] | Code Table (2-d) | 0xFF | 0XX |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Data2 | Check Sum |
|---------|--------|--------|---------------------|----------------------|-------|---------------|
| Enquiry | 0x70 | 0x00 | 0x02 | Code Table (2-a) [b] | 0xFF | 0XX Completed |

Code Table (2-a)

| [a]Function | [b]Range/Switch Code | Command Control | Enquiry | Standby | Power On |
|-----------------------------|----------------------|-----------------|---------|---------|----------|
| 0x77 Priority Signal Select | 0x00 Input1 Auto | No | Yes | Disable | Enable |
| | 0x01 Input1 RGB | | | | |
| | 0x02 Input1 YPbPr | | | | |

Code Table (2-d)

| Input Select | |
|--------------|--------|
| 0x00 | HD15 |
| 0x01 | Option |

(b) Time Control

Data Set (Month, Date)

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Check Sum |
|---------|--------|----------|----------|-------|------------------|-----------------|-----------|
| Control | 0x8C | 0x00 | 0x7C | 0x03 | Month: 0x01-0x0C | Date: 0x01-0x1F | 0XX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x7C | 0xFF | 0xFF | 0xFD |

| Answer | Header | Answer | Check Sum |
|---------|--------|--------|-----------------------|
| Control | 0x70 | 0x00 | 0x70 Completed |
| | 0x70 | 0x01 | 0x71 Limit Over |
| | 0x70 | 0x02 | 0x72 Limit Under |
| | 0x70 | 0x03 | 0x73 Command Canceled |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Return Data2 | Check Sum |
|---------|--------|--------|---------------------|------------------|-----------------|---------------|
| Enquiry | 0x70 | 0x00 | 0x03 | Month: 0x00-0x0C | Date: 0x01-0x1F | 0XX Completed |

Year Set

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-----------------|-----------|
| Control | 0x8C | 0x00 | 0x7B | 0x02 | Year: 0x00-0x63 | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x7B | 0xFF | 0xFF | 0xFC |

| Answer | Header | Answer | Check Sum | |
|---------|--------|--------|-----------|------------------|
| Control | 0x70 | 0x00 | 0x70 | Completed |
| | 0x70 | 0x01 | 0x71 | Limit Over |
| | 0x70 | 0x02 | 0x72 | Limit Under |
| | 0x70 | 0x03 | 0x73 | Command Canceled |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Check Sum |
|---------|--------|--------|---------------------|-----------------|-------------------|
| Enquiry | 0x70 | 0x00 | 0x02 | Year: 0x00-0x63 | 0xXX Completed |

Clock Set (Hour, Minute)

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Check Sum |
|---------|--------|----------|----------|-------|-----------------|-------------------|-----------|
| Control | 0x8C | 0x00 | 0x22 | 0x03 | Hour: 0x00-0x17 | Minute: 0x00-0x3B | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x22 | 0xFF | 0xFF | 0xA3 |

| Answer | Header | Answer | Check Sum | |
|---------|--------|--------|-----------|------------------|
| Control | 0x70 | 0x00 | 0x70 | Completed |
| | 0x70 | 0x01 | 0x71 | Limit Over |
| | 0x70 | 0x02 | 0x72 | Limit Under |
| | 0x70 | 0x03 | 0x73 | Command Canceled |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Return Data2 | Check Sum |
|---------|--------|--------|---------------------|------------------|-------------------|-------------------|
| Enquiry | 0x70 | 0x00 | 0x03 | Hour: *0x00-0x17 | Minute: 0x00-0x3B | 0xXX Completed |

Clock Set (Week)

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x23 | 0xFF | 0xFF | 0xA4 |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Check Sum |
|---------|--------|--------|---------------------|------------------------|-------------------|
| Enquiry | 0x70 | 0x00 | 0x02 | Week: Code Table (1-e) | 0xXX Completed |

Code Table (1-e)

| Week Select | |
|-------------|-----------|
| 0x00 | Sunday |
| 0x01 | Monday |
| 0x02 | Tuesday |
| 0x03 | Wednesday |
| 0x04 | Thursday |
| 0x05 | Friday |
| 0x06 | Saturday |

On Timer, Off Timer

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Check Sum |
|---------|--------|----------|----------------------|-------|-----------------|-------------------|-----------|
| Control | 0x8C | 0x00 | Code Table (1-f) [a] | 0x03 | Hour: 0x00-0x17 | Minute: 0x00-0x3B | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------------------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | Code Table (1-f) [a] | 0xFF | 0xFF | 0XX |

| Answer | Header | Answer | Check Sum |
|---------|--------|--------|-----------------------|
| Control | 0x70 | 0x00 | 0x70 Completed |
| | 0x70 | 0x01 | 0x71 Limit Over |
| | 0x70 | 0x02 | 0x72 Limit Under |
| | 0x70 | 0x03 | 0x73 Command Canceled |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Return Data2 | Check Sum |
|---------|--------|--------|---------------------|-----------------|-------------------|----------------|
| Enquiry | 0x70 | 0x00 | 0x03 | Hour: 0x00-0x17 | Minute: 0x00-0x3B | 0xXX Completed |

Code Table (1-f)

| [a]Function | [b]Range/Switch code | Command Control | Enquiry | Standby | Power On |
|-------------|----------------------|-----------------|---------|---------|----------|
| On Timer | | | | | |
| 0x50 | Sunday | – | Yes | Disable | Enable |
| 0x51 | Monday | – | | | |
| 0x52 | Tuesday | – | | | |
| 0x53 | Wednesday | – | | | |
| 0x54 | Thursday | – | | | |
| 0x55 | Friday | – | | | |
| 0x56 | Saturday | – | | | |
| 0x57 | Every day | – | | | |
| Off Timer | | | | | |
| 0x58 | Sunday | – | Yes | Disable | Enable |
| 0x59 | Monday | – | | | |
| 0x5A | Tuesday | – | | | |
| 0x5B | Wednesday | – | | | |
| 0x5C | Thursday | – | | | |
| 0x5D | Friday | – | | | |
| 0x5E | Saturday | – | | | |
| 0x5F | Every day | – | | | |

(d) IP Address Setting

IP Address

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Data4 | Data5 | Check Sum |
|---------|--------|----------|----------|-------|------------------------|------------------------|------------------------|------------------------|-----------|
| Control | 0x8C | 0x00 | 0x42 | 0x05 | Address 0 0x00-0xFF | Address 1 0x00-0xFF | Address 2 0x00-0xFF | Address 3 0x00-0xFF | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x42 | 0xFF | 0xFF | 0xC3 |

Subnet Mask

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Data4 | Data5 | Check Sum |
|---------|--------|----------|----------|-------|------------------------|------------------------|------------------------|------------------------|-----------|
| Control | 0x8C | 0x00 | 0x61 | 0x05 | Address 0 0x00-0xFF | Address 1 0x00-0xFF | Address 2 0x00-0xFF | Address 3 0x00-0xFF | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x61 | 0xFF | 0xFF | 0xE2 |

Gateway Address

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Data4 | Data5 | Check Sum |
|---------|--------|----------|----------|-------|------------------------|------------------------|------------------------|------------------------|-----------|
| Control | 0x8C | 0x00 | 0x62 | 0x05 | Address 0 0x00-0xFF | Address 1 0x00-0xFF | Address 2 0x00-0xFF | Address 3 0x00-0xFF | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x62 | 0xFF | 0xFF | 0xE3 |

DNS Primary

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Data4 | Data5 | Check Sum |
|---------|--------|----------|----------|-------|------------------------|------------------------|------------------------|------------------------|-----------|
| Control | 0x8C | 0x00 | 0x63 | 0x05 | Address 0 0x00-0xFF | Address 1 0x00-0xFF | Address 2 0x00-0xFF | Address 3 0x00-0xFF | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x63 | 0xFF | 0xFF | 0xE4 |

DNS Secondary

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Data4 | Data5 | Check Sum |
|---------|--------|----------|----------|-------|------------------------|------------------------|------------------------|------------------------|-----------|
| Control | 0x8C | 0x00 | 0x64 | 0x05 | Address 0 0x00-0xFF | Address 1 0x00-0xFF | Address 2 0x00-0xFF | Address 3 0x00-0xFF | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x64 | 0xFF | 0xFF | 0xE5 |

Player IP Address

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x83 | 0xFF | 0xFF | 0x04 |

| Answer | Header | Answer | Check Sum | |
|---------|--------|--------|-----------|------------------|
| Control | 0x70 | 0x00 | 0x70 | Completed |
| | 0x70 | 0x03 | 0x73 | Command Canceled |

| Answer | Header | Category | Function | Data1 | Data2 | Data3 | Data4 | Data5 | Check Sum |
|---------|--------|----------|---------------------|-------|------------------------|------------------------|------------------------|------------------------|-----------|
| Enquiry | 0x8C | 0x00 | Code Table (1-a)[a] | 0x05 | Address 0 0x00-0xFF | Address 1 0x00-0xFF | Address 2 0x00-0xFF | Address 3 0x00-0xFF | 0xXX |

IP Address ex)

192.128.14.1 → 192 (0xC0) Address 0
 128 (0x80) Address 1
 14 (0x0E) Address 2
 1 (0x01) Address 3

* IP address command can be carried out even in the standby state.

Code Table (1-a)

| [a]Function | [b]Range/Switch code | Command Control | Enquiry | Standby | Power On |
|--------------------------|----------------------|-----------------|---------|---------|----------|
| 0x42 IP Address | — | Enable | Enable | Enable | Enable |
| 0x61 Subnet Mask | — | | | | |
| 0x62 Gateway Address | — | | | | |
| 0x63 DNS Primary | — | | | | |
| 0x64 DNS Secondary | — | | | | |
| 0x83 IP Address (Player) | — | Disable | Enable | Enable | Enable |

7. Picture/Sound

(a) Picture/Sound

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------------------|-------|----------------------|-----------|
| Control | 0x8C | 0x10 | Code Table (2-a) [a] | 0x02 | Code Table (2-a) [b] | 0xXX |
| Enquiry | 0x83 | | | 0xFF | 0xFF | 0xXX |

| Answer | Header | Answer | Check Sum | |
|---------|--------|--------|-----------|------------------|
| Control | 0x70 | 0x00 | 0x70 | Completed |
| | 0x70 | 0x01 | 0x71 | Limit Over |
| | 0x70 | 0x02 | 0x72 | Limit Under |
| | 0x70 | 0x03 | 0x73 | Command Canceled |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Check Sum | |
|---------|--------|--------|---------------------|----------------------|-----------|-----------|
| Enquiry | 0x70 | 0x00 | 0x02 | Code Table (2-a) [b] | 0xXX | Completed |

Code Table (2-a)

| [a]Function | | [b]Range/Switch code | Command Control | Enquiry | Standby | Power On | |
|-------------|-------------------------------|----------------------|-----------------|---------|---------|----------|------------|
| 0x00 | Contrast | 0x00-0x64 | Yes | Yes | Disable | Enable | |
| 0x01 | Brightness | 0x00-0x64 | Yes | Yes | Disable | Enable | |
| 0x02 | Chroma | 0x00-0x32 | Yes | Yes | Disable | Enable | |
| 0x03 | Phase | 0x00-0x64 | Yes | Yes | Disable | Enable | |
| 0x04 | Color Temp | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | Cool |
| | | 0x02 | | | | | Neutral |
| | | 0x03 | | | | | Warm |
| 0x09 | Sharpness | 0x00-0x14 | Yes | Yes | Disable | Enable | |
| 0x0A | NR | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | OFF |
| | | 0x02 | | | | | Low |
| | | 0x03 | | | | | Mid |
| 0x0B | Cinema Drive | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | Auto |
| 0x0C | Dynamic Picture | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | OFF |
| | | 0x02 | | | | | ON |
| 0x0D | Color Correct | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | Reserve |
| 0x0E | Gamma Correct | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | High |
| | | 0x02 | | | | | Mid |
| | | 0x03 | | | | | Low |
| 0x10 | Picture Mode | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | Standard |
| | | 0x02 | | | | | Vivid |
| | | 0x05 | | | | | Custom |
| | | 0x06 | | | | | TC Control |
| 0x11 | Brightness Boost ¹ | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | OFF |
| 0x30 | Volume | 0x00-0x64 | Yes | Yes | Enable | Enable | |
| 0x31 | Treble ² | 0x00-0x64 | Yes | Yes | Disable | Enable | |
| 0x32 | Bass ² | 0x00-0x64 | Yes | Yes | Disable | Enable | |
| 0x33 | Balance | 0x00-0x64 | Yes | Yes | Disable | Enable | |
| 0x34 | Surround | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | OFF |
| | | 0x02 | | | | | Hall |
| 0x35 | Sound Mode | 0x00 | Yes | Yes | Disable | Enable | |
| | | 0x01 | | | | | Simulate |
| | | 0x02 | | | | | Dynamic |
| | | 0x03 | | | | | Standard |

(Continued)

Code Table (2-a)

| [a]Function | [b]Range/Switch code | Command Control | Enquiry | Standby | Power On |
|-------------------------|----------------------|-----------------|---------|---------|----------|
| 0x36 Default Volume Set | 0x00-0x64 | Yes | Yes | Enable | Enable |
| 0x37 Volume Select | 0x00 Last Memory | Yes | Yes | Enable | Enable |
| | 0x01 Default Setting | | | | |
| 0x38 Max Volume Set | 0x32 50 | Yes | Yes | Enable | Enable |
| | 0x46 70 | | | | |
| | 0x64 100 | | | | |

*1 Picture Mode = Vivid Only is Enabled.

*2 Sound Mode = Custom Only is Enabled.

(c) Color Temp

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Check Sum |
|---------|--------|----------|----------------------|-------|------------------|----------------------|-----------|
| Control | 0x8C | 0x10 | Code Table (2-b) [a] | 0x03 | Code Table (2-c) | Code Table (2-b) [b] | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------------------|------------------|-------|-----------|
| Enquiry | 0x83 | 0x10 | Code Table (2-b) [a] | Code Table (2-c) | 0xFF | 0XX |

| Answer | Header | Answer | Check Sum |
|---------|--------|--------|-----------------------|
| Control | 0x70 | 0x00 | 0x70 Completed |
| | 0x70 | 0x03 | 0x73 Command Canceled |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Return Data2 | Check Sum |
|---------|--------|--------|---------------------|------------------|----------------------|---------------|
| Enquiry | 0x70 | 0x00 | 0x03 | Code Table (2-c) | Code Table (2-b) [b] | 0XX Completed |

Code Table (2-b)

| [a]Function | [b]Range/Switch code | Command Control | Enquiry | Standby | Power On |
|-----------------|----------------------|-----------------|---------|---------|----------|
| 0x05 Red Gain | 0x00-0x1E | Yes | Yes | Disable | Enable |
| 0x06 Green Gain | | | | | |
| 0x07 Blue Gain | | | | | |

Code Table (2-c)

| Format Select | |
|---------------|---------|
| 0x00 | Cool |
| 0x01 | Neutral |
| 0x02 | Warm |
| 0x03 | Custom |

8. Size/Shift

(a) 8Bits Register

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------------------|-------|----------------------|-----------|
| Control | 0x8C | 0x20 | Code Table (3-b) [a] | 0x02 | Code Table (3-b) [b] | 0xXX |
| Enquiry | 0x83 | | | 0xFF | 0xFF | 0xXX |

| Answer | Header | Answer | Check Sum |
|---------|--------|--------|-----------------------|
| Control | 0x70 | 0x00 | 0x70 Completed |
| | 0x70 | 0x01 | 0x71 Limit Over |
| | 0x70 | 0x02 | 0x72 Limit Under |
| | 0x70 | 0x03 | 0x73 Command Canceled |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Check Sum |
|---------|--------|--------|---------------------|----------------------|----------------|
| Enquiry | 0x70 | 0x00 | 0x02 | Code Table (3-b) [b] | 0xXX Completed |

Code Table (3-b)

| [a]Function | [b]Range/Switch code | Command Control | Enquiry | Standby | Power On |
|--------------------|-----------------------------------|-----------------|---------|---------|----------|
| 0x00 H Size | 0x00-0x3C | Yes | Yes | Disable | Enable |
| 0x01 H Shift | 0x00-0x3C | Yes | Yes | Disable | Enable |
| 0x02 V Size | 0x00-0x3C | Yes | Yes | Disable | Enable |
| 0x03 V Shift | 0x00-0x3C | Yes | Yes | Disable | Enable |
| 0x04 Aspect | 0x00 Wide Zoom (VIDEO Only) | Yes | Yes | Disable | Enable |
| | 0x01 Zoom (VIDEO Only) | | | | |
| | 0x02 Full (VIDEO Only) | | | | |
| | 0x04 Normal (PC:Real, VIDEO: 4:3) | | | | |
| | 0x05 Full 1 (PC Only) | | | | |
| | 0x06 Full 2 (PC Only) | | | | |
| | 0x09 | | | | |
| 0x05 Multi Display | 0x00 OFF | Yes | Yes | Disable | Enable |
| | 0x01 2 × 2 | | | | |
| | 0x02 3 × 3 | | | | |
| | 0x03 4 × 4 | | | | |
| | 0x04 1 × 2 | | | | |
| | 0x05 1 × 3 | | | | |
| | 0x06 1 × 4 | | | | |
| | 0x07 2 × 1 | | | | |
| | 0x08 3 × 1 | | | | |
| | 0x09 4 × 1 | | | | |

(Continued)

Code Table (3-b)

| [a]Function | | [b]Range/Switch code | | Command Control | Enquiry | Standby | Power On |
|-------------|---|----------------------|------------|-----------------|---------|---------|----------|
| 0x06 | Auto Pixel Adjust | 0xFF | Execute | Yes | No | Disable | Enable |
| 0x07 | Dot Phase | 0x00-0x1F | | Yes | Yes | Disable | Enable |
| 0x0B | Multi Position (2 × 2, 1 × 2, 2 × 1) ^{*1} | 0x00 | Position1 | Yes | Yes | Disable | Enable |
| | | 0x01 | Position2 | | | | |
| | | 0x02 | Position3 | | | | |
| | | 0x03 | Position4 | | | | |
| 0x0C | Multi Position (3 × 3, 1 × 3, 3 × 1) ^{*1} | 0x00 | Position1 | Yes | Yes | Disable | Enable |
| | | 0x01 | Position2 | | | | |
| | | 0x02 | Position3 | | | | |
| | | 0x03 | Position4 | | | | |
| | | 0x04 | Position5 | | | | |
| | | 0x05 | Position6 | | | | |
| | | 0x06 | Position7 | | | | |
| | | 0x07 | Position8 | | | | |
| | | 0x08 | Position9 | | | | |
| 0x0D | Multi Position (4 × 4, 1 × 4, 4 × 1) ^{*1} | 0x00 | Position1 | Yes | Yes | Disable | Enable |
| | | 0x01 | Position2 | | | | |
| | | 0x02 | Position3 | | | | |
| | | 0x03 | Position4 | | | | |
| | | 0x04 | Position5 | | | | |
| | | 0x05 | Position6 | | | | |
| | | 0x06 | Position7 | | | | |
| | | 0x07 | Position8 | | | | |
| | | 0x08 | Position9 | | | | |
| | | 0x09 | Position10 | | | | |
| | | 0x0A | Position11 | | | | |
| | | 0x0B | Position12 | | | | |
| | | 0x0C | Position13 | | | | |
| | | 0x0D | Position14 | | | | |
| | | 0x0E | Position15 | | | | |
| | | 0x0F | Position16 | | | | |
| 0x0E | Over Scan | 0x00 | OFF | Yes | Yes | Disable | Enable |
| | | 0x01 | ON | | | | |
| | | 0x02 | AUTO | | | | |
| 0x0F | Multi Display | 0x00 | Tiles | Yes | Yes | Disable | Enable |
| | Output Format | 0x01 | Window | | | | |

*1 Arrangement of Multi Position.

Multi Position (2 × 2)

| | |
|---|---|
| 1 | 2 |
| 3 | 4 |

Multi Position (1 × 2)

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

Multi Position (2 × 1)

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

Multi Position (3 × 3)

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

Multi Position (1 × 3)

| |
|---|
| 1 |
| 2 |
| 3 |

Multi Position (3 × 1)

| | | |
|---|---|---|
| 1 | 2 | 3 |
|---|---|---|

Multi Position (4 × 4)

| | | | |
|----|----|----|----|
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 |

Multi Position (1 × 4)

| |
|---|
| 1 |
| 2 |
| 3 |
| 4 |

Multi Position (4 × 1)

| | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
|---|---|---|---|

(b) Power On Batch

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Check Sum |
|---------|--------|----------|----------|-------|-------------------------------------|-------------------------------|-----------|
| Control | 0x8C | 0x00 | 0x85 | 0x03 | Input Select Code Table (1-a)[a] | Volume Code Table (1-a)[b] | 0xXX |

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x00 | 0x85 | 0xFF | 0xFF | 0xXX |

| Answer | Header | Answer | Check Sum | |
|---------|--------|--------|-----------|------------------|
| Control | 0x70 | 0x00 | 0x70 | Completed |
| | 0x70 | 0x01 | 0x71 | Limit Over |
| | 0x70 | 0x02 | 0x72 | Limit Under |
| | 0x70 | 0x03 | 0x73 | Command Canceled |

| Answer | Header | Answer | Return to Data Size | Data2 | Data3 | Check Sum |
|---------|--------|--------|---------------------|-------------------------------------|-------------------------------|-----------|
| Enquiry | 0x70 | 0x00 | 0x03 | Input Select Code Table (1-a)[a] | Volume Code Table (1-a)[b] | 0xXX |

Code Table (1-a)

| | | |
|--------------------------------|-----------|-----------------------------|
| Input Select [a] ^{*2} | 0x08 | HD15 RGB |
| | 0x09 | HD15 YUV |
| | 0x0E | Option RGB |
| | 0x0F | Option COMPONENT |
| | 0x20 | DVI |
| | 0x30 | VIDEO |
| | 0x31 | S-VIDEO |
| | 0x84 | Option Digital1 (HDMI1/SDI) |
| | 0x85 | Option Digital2 (HDMI2) |
| Volume [b] | 0x00-0x64 | |

Code Table (1-b)

| [a]Function | [b]Range/Switch code | Command Control | Enquiry | Standby | Power On |
|---------------------|----------------------|-----------------|---------|---------|-----------------|
| 0x85 Power On Batch | | Yes | No | Enable | Control/Disable |

*1 When this control command is received, the power of a set will be turned on first.

*2 Input Select setting, Auto Signal Detect becomes Disable. When Option Slot is connected, Option command is Enable.

9. Status Enquiry

(a) Model Name

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x30 | 0x00 | 0xFF | 0xFF | 0xB1 |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Check Sum |
|---------|--------|--------|---------------------|------------------|-------------------|
| Enquiry | 0x70 | 0x00 | 0x02 | Code Table (4-a) | 0xFF Completed |

Code Table (4-a)

| Format Select | |
|---------------|-----------|
| 0x28 | FWD-S42H1 |
| 0x29 | FWD-S47H1 |

(b) Serial Number

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x30 | 0x01 | 0xFF | 0xFF | 0xB2 |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Return Data2 | Return Data3 | Return Data4 | Check Sum |
|---------|--------|--------|---------------------|-----------------|-------------------|-------------------|-----------------|-------------------|
| Enquiry | 0x70 | 0x00 | 0x05 | Upper 8bit Data | Middle Upper Data | Middle Lower Data | Lower 8bit Data | 0xFF Completed |

Return Data1-Data4: 0x00000000-0x0098967F (0,000,000-9,999,999)

(c) Operation Time

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x30 | 0x02 | 0xFF | 0xFF | 0xB3 |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Return Data2 | Return Data3 | Return Data4 | Check Sum |
|---------|--------|--------|---------------------|-----------------|-------------------|-------------------|-----------------|-------------------|
| Enquiry | 0x70 | 0x00 | 0x05 | Upper 8bit Data | Middle Upper Data | Middle Lower Data | Lower 8bit Data | 0xFF Completed |

Return Data1-Data4: 0x00000000-0xD693A3FF (0sec.-~~3,599,999,999sec.~~)

3,599,999,999 sec

(d) Soft Version (Main CPU/LAN)

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|------------------|-------|-------|-----------|
| Enquiry | 0x83 | 0x30 | Code Table (4-k) | 0xFF | 0xFF | 0xB4 |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Return Data2 | Check Sum |
|---------|--------|--------|---------------------|-----------------|-----------------|-------------------|
| Enquiry | 0x70 | 0x00 | Code Table (4-k) | Upper 8bit Data | Lower 8bit Data | 0xFF Completed |

Return Data1-Data2: 0x0000-0xFFFF (BCD Format)
 ex) In Version0.100, it is set to 01 and 00.

Code Table (4-k)

| Function | Return Data |
|---------------|---------------|
| 0x03 Main CPU | 0x0000-0xFFFF |
| 0x0F LAN | 0x0000-0xFFFF |

(e) 8bits Register

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|------------------|-------|-------|-----------|
| Enquiry | 0x83 | 0x30 | Code Table (4-b) | 0xFF | 0xFF | 0xFF |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Check Sum |
|---------|--------|--------|---------------------|------------------|-------------------|
| Enquiry | 0x70 | 0x00 | 0x02 | Code Table (4-b) | 0xFF Completed |

Code Table (4-b)*

| Function | Return Data | Unit |
|----------|-------------------------|------------------------|
| 0x07 | Digital 3.3 V | 0x00-0xFF |
| 0x08 | Analog 24 V | 0x00-0xFF |
| 0x09 | Digital 5 V | 0x00-0xFF |
| 0x0A | Temp1 | 0x00-0xFF |
| 0x0B | Temp2 | 0x00-0xFF |
| 0x0D | Inverter Alarm | 0: Normal, 1: Abnormal |
| 0x11 | Shutdown Log | 0x00-0xFF |
| 0x12 | Digital 3.3 V (Failure) | 0x00-0xFF |
| 0x13 | Digital 5 V (Failure) | 0x00-0xFF |
| 0x14 | Analog 12 V (Failure) | 0x00-0xFF |
| 0x16 | Analog 12 V | 0x00-0xFF |

*

- **For function 0x07, 0x08, 0x09, 0x11, 0x12, 0x13, 0x14 and 0x16 in the left table**
 When the display value is 3.0 V, “0x1E” (30) is returned.
- **For function 0x0A, 0x0B and 0x0D in the left table**
 When the display value is 50 °C, “0x32” (50) is returned.
 When the display value is -20 °C, “0xEC” is returned.

(f) Shutdown Log

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x30 | 0x11 | 0xFF | 0xFF | 0xC2 |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Check Sum | |
|---------|--------|--------|---------------------|----------------------------------|-----------|-----------|
| Enquiry | 0x70 | 0x00 | 0x02 | Shutdown Log Code Table (4-c) | 0XX | Completed |

Return Data1: 0x00-0xFF

(g) Shutdown Log Clear

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Control | 0x8C | 0x30 | 0x11 | 0x02 | 0x00 | 0xCF |

| Answer | Header | Answer | Check Sum |
|---------|--------|--------|--------------------------|
| Control | 0x70 | 0x00 | 0x70 Completed |
| | 0x70 | 0x03 | 0x73 Command Canceled |

(h) LAN Firmware Version

| Syntax | Header | Category | Function | Data1 | Data2 | Data3 | Check Sum |
|---------|--------|----------|----------|-------|----------------------------------|----------------------------------|-----------|
| Control | 0x8C | 0x30 | 0x0F | 0x03 | Soft Version (LAN) Upper data | Soft Version (LAN) Lower data | 0XX |

| Answer | Header | Answer | Check Sum |
|---------|--------|--------|--------------------------|
| Control | 0x70 | 0x00 | 0x70 Completed |
| | 0x70 | 0x03 | 0x73 Command Canceled |

Code Table (4-c)

| Shutdown Information | |
|----------------------|---|
| bit0 | Reserved |
| bit1 | 1: FAN Sensor Abnormal 0: Normal |
| bit2 | 1: Panel Temperature Abnormal 0: Normal |
| bit3 | 1: Temperature Sensor Abnormal 0: Normal |
| bit4 | Reserved |
| bit5 | 1: Power Abnormal (3.3 V, 5 V) 0: Normal |
| bit6 | 1: Analog Power Abnormal (12 V, 9 V, 24 V) 0: Normal |
| bit7 | Reserved |

(i) Auto Input Detect

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x30 | 0x30 | 0xFF | 0xFF | 0xE1 |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Return Data2 | Return Data3 | Return Data4 | Return Data5 |
|---------|--------|--------|---------------------|---|---|---|---|---|
| Enquiry | 0x70 | 0x00 | 0x0C | Input1 Input Type Code Table (4-e) | Input2 Input Type Code Table (4-e) | Input3 Input Type Code Table (4-e) | Input4 Input Type Code Table (4-e) | Input5 Input Type Code Table (4-e) |

| Return Data6 | Return Data7 | Return Data8 | Return Data9 | Return Data10 |
|---|--|---|--|---|
| Option1 Option Type Code Table (4-e) | Option1 Input Type Code Table (4-e) | Option2 Option Type Code Table (4-e) | Option2 Input Type Code Table (4-e) | Option3 Option Type Code Table (4-e) |

| Return Data11 | Check Sum |
|--|----------------|
| Option3 Input Type Code Table (4-e) | 0xFF Completed |

Code Table (4-e)

| Input | Input Type (Basic) | Option Type | Input Type (Option) |
|---------|-----------------------|-------------------------------------|---------------------|
| INPUT1 | 0x02 S-Video | | |
| INPUT2 | 0x01 Video | | |
| INPUT3 | 0x06 RGB/YUV (Analog) | | |
| INPUT4 | 0x07 DVI | | |
| INPUT5 | 0x00 No Input | | |
| OPTION1 | 0x00 Analog Only | 0x00 No Input | |
| | 0x00 Analog Only | 0x03 Video/S-Video | |
| | 0x00 Analog Only | 0x06 RGB/YUV (Analog) | |
| | 0x00 Analog Only | 0x07 Video/S-Video/RGB/YUV (Analog) | |
| | 0x01 Analog/Com | 0x04 RGB | |
| | 0x03 Com Only | 0x00 No Input | |
| | 0x04 Digital Only | 0x0E Digital/Digital | |
| | 0x04 Digital Only | 0x0D Digital | |
| OPTION2 | 0x00 Analog Only | 0x00 No Input | |
| OPTION3 | 0x00 Analog Only | 0x00 No Input | |

(j) Auto Panel Type Detect

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x30 | 0x31 | 0xFF | 0xFF | 0xE2 |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Check Sum | |
|---------|--------|--------|---------------------|------------------|-----------|-----------|
| Enquiry | 0x70 | 0x00 | 0x02 | Code Table (4-h) | 0x72 | Completed |

Code Table (4-h)

| Panel Type | |
|------------|-----|
| 0x00 | LCD |

Code Table (4-i)

| | |
|--------------|---------------|
| H_Resolution | 0x0780 (1920) |
| V_Resolution | 0x0438 (1080) |

Code Table (4-j)

| | |
|----------------------|------|
| Input Quantity | 0x05 |
| Option Slot Quantity | 0x01 |

Code Table (4-d)

| [a]Function | [b]Range/Switch code | Command Control | Enquiry | Standby | Power On |
|------------------------------|--|-----------------|---------|---------|----------|
| 0x00 Model Name | 0x28, 0x29 | No | Yes | Enable | Enable |
| 0x01 Serial Number | 0x00000000-0x0098967F (0,000,000-9,999,999) | | | | |
| 0x02 Operation Time | 0x00000000-0xD693A3FF (0sec.-3,599,999,999sec.) | | | | |
| 0x03 Soft Version (Main) | 0x0000-0x9999 | | | | |
| 0x07 Digital 3.3 V | 0x00-0xFF | | | | |
| 0x08 Analog 24 V | 0x00-0xFF | | | | |
| 0x09 Digital 5 V | 0x00-0xFF | | | | |
| 0x0A Temp1 | 0x00-0xFF | | | | |
| 0x0B Temp2 | 0x00-0xFF | | | | |
| 0x0C Temp3 | 0x00-0xFF | | | | |
| 0x0D Temp P/S | 0x00-0xFF | | | | |
| 0x0E Inverter Alarm | 0: Normal, 1: Abnormal | | | | |
| 0x0F Soft Version (LAN) | 0x0000-0x9999 | | | | |
| 0x10 Analog 9 V | 0x00-0xFF | | | | |
| 0x11 Shutdown Log | 0x00-0xFF | | | | |
| 0x12 Digital 3.3 V (Failure) | 0x00-0xFF | | | | |
| 0x13 Digital 5 V (Failure) | 0x00-0xFF | | | | |
| 0x14 Analog 9 V (Failure) | 0x00-0xFF | | | | |
| 0x16 Analog 12 V | 0x00-0xFF | | | | |
| 0x30 Auto Input Detect | | | | | |
| 0x31 Auto Panel Type Detect | | | | | |

(k) Auto Plug Detect

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------|-------|-------|-----------|
| Enquiry | 0x83 | 0x30 | 0x32 | 0xFF | 0xFF | 0xE3 |

| Answer | Header | Answer | Return to Data Size | Return Data1 | Return Data2 | Return Data3 |
|---------|--------|--------|---------------------|--------------------------------|--------------------------------------|--------------------------------------|
| Enquiry | 0x70 | 0x00 | 0x21 | Panel Type Code Table (4-h) | H_Resolution (H) Code Table (4-i) | H_Resolution (L) Code Table (4-i) |

| Return Data4 | Return Data5 | Return Data6 | Return Data7 |
|--------------------------------------|--------------------------------------|------------------------------------|--|
| V_Resolution (H) Code Table (4-i) | V_Resolution (L) Code Table (4-i) | Input Quantity Code Table (4-j) | Input1 Input Type Code Table (4-e) |

| Return Data8 | Return Data9 | Return Data10 | Return Data11 |
|--|--|--|--|
| Input2 Input Type Code Table (4-e) | Input3 Input Type Code Table (4-e) | Input4 Input Type Code Table (4-e) | Input5 Input Type Code Table (4-e) |

| Return Data12 | Return Data13 | Return Data14 | Return Data15 |
|--|--|---|--|
| Option Slot Quantity Code Table (4-j) | Option1 Option Type Code Table (4-e) | Option1 Input Type Code Table (4-e) | Option2 Option Type Code Table (4-e) |

| Return Data16 | Return Data17 | Return Data18 | Return Data19 |
|---|--|---|-------------------|
| Option2 Input Type Code Table (4-e) | Option3 Option Type Code Table (4-e) | Option3 Input Type Code Table (4-e) | (Reserve) 0xFF |

| Return Data20 | Return Data21 | Return Data22 | Return Data23 |
|-------------------|-------------------|-------------------|-------------------|
| (Reserve) 0xFF | (Reserve) 0xFF | (Reserve) 0xFF | (Reserve) 0xFF |

| Return Data24 | Return Data25 | Return Data26 | Return Data27 |
|-------------------|-------------------|-------------------|-------------------|
| (Reserve) 0xFF | (Reserve) 0xFF | (Reserve) 0xFF | (Reserve) 0xFF |

| Return Data28 | Return Data29 | Return Data30 | Return Data31 |
|-------------------|-------------------|-------------------|-------------------|
| (Reserve) 0xFF | (Reserve) 0xFF | (Reserve) 0xFF | (Reserve) 0xFF |

| Return Data32 | Check Sum |
|-------------------|-----------|
| (Reserve) 0xFF | 0xFF |

10. User Reset

| Syntax | Header | Category | Function | Data1 | Data2 | Check Sum |
|---------|--------|----------|----------------|-------|-------|-----------|
| Control | 0x8C | 0x50 | Code Table (5) | 0x02 | 0xFF | 0xXX |

| Answer | Header | Answer | Check Sum |
|---------|--------|--------|-----------------------|
| Control | 0x70 | 0x00 | 0x70 Completed |
| | 0x70 | 0x03 | 0x73 Command Canceled |

Code Table (5)

| Function | Range/Switch code | Command Control | Enquiry | Standby | Power On |
|----------|-----------------------|-----------------|---------|---------|----------|
| 0x00 | Picture Reset | Yes | No | Disable | Enable |
| 0x01 | Audio Reset | | | | |
| 0x02 | Size Reset | | | | |
| 0x03 | Picture Reset2 (FW50) | | | | |
| 0x04 | All Reset | | | | |

Section 2

SNMP

1. SNMP

FWD-S42H1/S47H1 installs SNMP (Simple Network Management Protocol). SNMP is a standard protocol for network management that was standardized in IETF (Internet Engineer Task Force). By using SNMP, the management information of equipment connected to a network can be gotten via a network. The information of multiple equipment gotten using SNMP can also be unitarily managed by using SNMP management software.

The equipment corresponding to SNMP has a “management information database” called MIB (Management Information Base) in the inside of equipment. In SNMP, the bidirectional communication of data contained in MIB is realized between a “management system” and “management object system” that exist in a network.

In MIB, there is the standard MIB prescribed by RFC. Especially, MIB-2 (formal name: MIB-II) is its representative MIB. MIB-2 was established to manage a network. MIB-2 is installed in much network equipment such as a PC, router, and switch as a standard feature. This unit installs this MIB-2.

Monitoring and monitored sides exist when equipment is monitored via a network using SNMP. The monitoring side is called an “SNMP manager”. It is mainly constituted by the software of PC. For the monitored side, a module called an “SNMP agent” is installed. SNMP-compatible equipment transmits MIB information to an SNMP manager via this SNMP agent. This unit installs this SNMP agent. This unit can realize the communication with a general-purpose SNMP manager using this SNMP agent.

Basically, an SNMP agent replies only when an inquiry is sent from an SNMP manager.

The SNMP manager periodically inquires the equipment, which it manages, about MIB information. This way to get information is called “polling”. In polling, equipment replies using a response command when an SNMP manger sends a request command to equipment. By polling, therefore, equipment can be monitored without applying a high load to the equipment.

On the other hand, notification can also be done from the equipment side to an SNMP manager. This notification is called a “trap”. Using this trap, when a serious trouble occurred in equipment, it can be notified to the SNMP manager in a short time.

This unit is compatible with the two polling and trap protocols described above. Equipment can be efficiently monitored using these protocols.

2. Specifications of SNMP Installation

The specifications of the SNMP agent installed in this unit are shown in below.

- SNMP version: SNMPv1
- MIB definition: SMIV2
- Support PDU: GetRequest
SetRequest
GetNextRequest
Trap
- Standard MIB to be installed: MIB-II

3. Installation

The setting below is required to use the SNMP function of this unit. (Set according to your network environment and SNMP management environment.)

- Community and its Community property
- Authentication trap
- Host restriction

The Web server function of this unit is used for setting. Refer to the Operation Manual of this unit for the operation of the Web server.

The contents of each item and the setting of SNMP are fully described in this specification.

4. Operation of SNMP Setting Window

This section describes the procedure and contents for setting of SNMP.

Open the Web page of this unit and click the **SNMP** button in the Advanced setting item on the Setup page (where an administrator's password is necessary). The SNMP setting window is displayed.

Display Remote Manager

Information Configure Control Setup

Owner Information

Time

Network

Password

Mail Report

Advertisement

ID Talk

SNMP

Easy

SNMP

Community : public Add Edit Remove

Community name : public Set to list Cancel

Rights : Read Only

Trap destinations :

Send authentication trap

Accept SNMP packets from any host

Accept SNMP packets from these hosts

Apply

SONY

SNMP Setting window (on Web Page)

4-1. Community

A Community name is used as the password for SNMP access. The request received from an SNMP manager is accepted when the Community name contained in the request coincides with the Community name set. The request is rejected when the former does not coincide with the latter.

A maximum of three Communities can be set.

There are “Rights” and “Trap destinations” items in the property of Community. The property can be set for each set Community.

Note

When multiple Communities are set, all set Communities are validated.

1. Rights

The rights that can be set are as follows:

Read Only: An SNMP manager can reference MIB information using this Community name.

Read Write: This Community must be set when a write request is sent from an SNMP manager.

Other: Do not set this option because it is used for the function extension in future.

2. Trap destinations

When Trap destinations are set, during trap occurrence, a trap is notified to the equipment set as trap destinations using the Community name set.

Up to four Trap destinations can be set to one Community.

Trap destinations are not set in default.

Note

This product can be set on only the Web screen because it does not install the automatic setting function of Trap destinations.

3. Setting procedure of Community

Community can be added, edited, and removed.

The addition, editing, and removal procedures of Community are described below.

Addition of Community

1. Click the **Add** button.

The “Community name”, “Rights”, and “Trap destinations” text boxes, and **Set to List** and **Cancel** buttons are validated.

2. Type the Community name you want to add.
3. Set the Rights of Community and the Trap destinations you want to add.

When you want to save the setting, click the **Set to List** button and then click the **Apply** button at the bottom of the window.

Notes

- Click the **Cancel** button when you want to discard the setting during setting.
- When you want to save setting, be sure to click the **Set to List** button and then click the **Apply** button.

Editing of Community

1. Select the Community, you want to edit, from a drop-down list.
2. Click the **Edit** button.
The “Community name”, “Rights”, and “Trap destinations” text boxes, and **Set To List** and **Cancel** buttons are validated.
Edit the Community name when you want to edit a Community name.
3. Set the Rights of Community and the Trap destinations you want to edit.

Notes

- Click the **Cancel** button when you want to discard the setting during setting.
- When you want to save the setting, click the **Set to List** button and then click the **Apply** button at the bottom of the window.

Removal of Community

1. Select the Community, you want to remove, from a drop-down list.
2. Click the **Remove** button and then click the **Apply** button at the bottom of the window.

Note

Be sure to click the **Remove** button and then click the **Apply** button.

4-2. Authentication Trap

An authentication trap is the trap for making it detect by an SNMP manager that an illegal access was gained to this unit using an SNMP protocol.

- The authentication trap is validated when this check box is selected. A trap is transmitted when an illegal access is gained.
- The authentication trap is invalidated when this check box is not selected. A trap is not transmitted even if an illegal access is gained.

Note

Be sure to click the **Apply** button when you edited setting.

4-3. IP Restriction of Host

It is possible to put restrictions on the IP address of an SNMP manager, as one of the security countermeasures, which communicates using an SNMP protocol.

- IP address restriction is invalidated when you select “Accept packets from any host”.
- Only the SNMP access from an SNMP manager that has the set IP address is accepted when you select “Accept packets from those hosts”. The SNMP access from an IP address that has not been set is rejected.

Notes

- Up to four IP restrictions can be set.
- Be sure to click the **Apply** button when you edited setting.

5. MIB to Be Installed

This unit installs MIB-2.

MIB-2 is the most representative standard MIB. It is installed in various network products.

The statistical information on the amount of network traffic or the number of transmitted and received packets is defined, and the change or transition can be monitored by polling the information periodically. Additionally, the management items to be installed can be defined using a TCP/IP device so as to get the information effective for the monitoring of the network communication state.

Refer to RFC1213 for the detailed definition of MIB-2.

6. Information to Be Notified on Trap

In software version 2.0 or later, the software have a function that transmits error information to this unit.

The error trap and authentication trap are installed.

Section 3

ID Talk

ID Talk is set as described below. ID Talk is a protocol for operating the function of this unit via a network.

1. Default Setting

| Item | Description |
|-------------------------|------------------------------|
| Transport | TCP |
| Port number | 53484 (Factory setting) |
| TCP connection time-out | 30 seconds (Factory setting) |

2. Setting Items

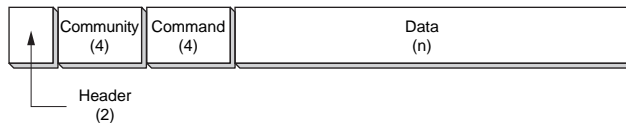
The items that can be set to ID Talk are shown in the table below.

| Item | Description |
|-------------------------------------|---|
| Start ID Talk Service | Select the check box when using ID Talk. Clear the check box when using no ID Talk. (default setting: OFF) |
| Port No. | Changes the port number. A port number have to change port number 53484 cannot be used because it has been already used for another purpose. |
| Timeout | Specify the timeout time of connection. Connection is automatically disconnected when communication is not done for the specified time. |
| IP address of client (Host Address) | Executes only the request from the specified IP address. ID Talk does not have the security function such as user authentication. During installation, safety can be improved by setting this item. Multiple host addresses can be set. |
| Community | Changes the community of a header. Four (upper-or-lower case) alphanumeric characters can be set. (default setting: SONY) |

Set the items described above properly on the SETUP → ID Talk page of the Web page when using ID Talk.

3. Packet Structure

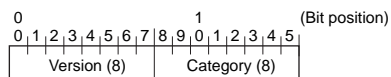
The packet structure of ID Talk is described below.



Packet structure

3-1. Header

The header is constituted by two bytes consisting of a version (8 bits) and category (8 bits).



Header structure

Version

Indicates the version number of an ID Talk protocol.

This version is fixed to 02h (version 2).

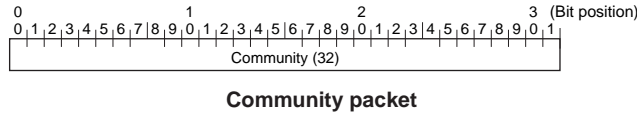
Category

Contains the category number of display equipment to be controlled. A category number is confirmed on the display equipment side. A request is ignored when a different category number is contained.

| Code | Category |
|------|---------------------|
| 10h | Information Display |

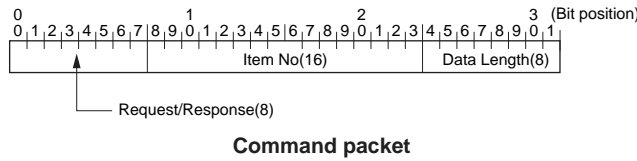
3-2. Community

A request is executed when community coincides with the community set in display equipment. Community consists of four (upper- or lower-case) alphanumeric characters. "SONY" is a factory-setting value. The set character can be changed on the Web page.



3-3. Command

The format of a request packet and response packet is described below.



3-4. Request

The format when sending a request from a host to display equipment is described below.

Community

This is the same alphanumeric character as the community set in display equipment that sends a request.

Request

This is a request for display equipment.

Item No.

This is the item number to be treated for request.

Data Length

This is the length of data incident to a request. The maximum length is 128 bytes. The length of data is "0" when no data exists.

Data

This is data incident to a request.

3-5. Response

The format when display equipment returns a response to the request from a host is described below.

Community

This contains the same alphanumeric character as a request. For a short header and short community, this is embedded with 00h.

Response

This contains the result of a request.

Item No.

This is the item number to be treated for response.

Data Length

This is the length of data incident to a response. The maximum length is 128 bytes. The length of data is "0" when no data exists.

Data

This is data incident to a response.

4. Requests and Responses

Requests and responses are described below.

4-1. Requests

Requests are only a GET request that gets the display information or state and a SET request that changes the setting of display equipment.

| Request | Contents |
|-----------|--|
| SET (00h) | Writes data in the register of display equipment. |
| GET (01h) | Gets the installation information, equipment state, or setting values. |

SET command:

Communication with the main microcomputer of display equipment can be done via a network by using the protocol dedicated to FWD-S42H1/S47H1 as well as an ID Talk protocol. Use a SET command in this case. (Also, use a SET command when receiving information from the display equipment.)

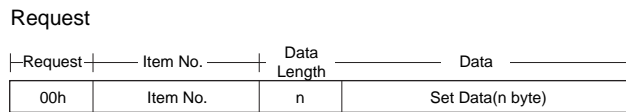
4-2. Responses

A response returns the result of execution to the request from a host.

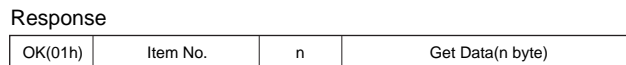
| Response | Contents |
|----------|---|
| NG (00h) | Indicates that a request is invalid or could not be executed. |
| OK (01h) | Indicates that a request could be executed normally. |

4-3. SET request

The SET request sets a new value to the specified item. A request and its response are described in details below.



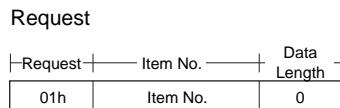
SET request



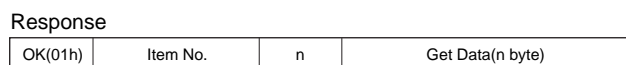
Response to SET request

4-4. GET request

The GET request gets the value of the specified item. A request and its response are described in details below.



GET request



Response to GET request

4-5. ERROR response

An NG message is returned as a response when an error occurs in the contents of a request or the result of execution.

| | | | |
|---------|----------|---|----------------|
| NG(00h) | Item No. | 2 | Error Code(16) |
|---------|----------|---|----------------|

ERROR response

5. Items

| Category | Contents | SET | GET |
|----------|---------------------------------------|-----|-----|
| 80**h | Gets the information of this unit | ○ | ○ |
| 90**h | Gets the network setting information. | – | ○ |
| F100h | FWD-S42H1/S47H1 dedicated protocol | ○ | – |

5-1. 80**h

This item gets the information of the connected display equipment.

| Lower byte | Contents | SET | GET |
|------------|--------------------|-----|-----|
| 00h | Category Code | – | ○ |
| 01h | Model Name | – | ○ |
| 02h | Serial Number | – | ○ |
| 03h | Installation Place | ○ | ○ |

0x8000 Category code

1 byte

0x8001 Model name

12 alphanumeric characters

For under 12 alphanumeric characters, the remaining section is set as 00h.

0x8002 Serial number

4 bytes

0x8003 Installation place

24 alphanumeric characters

For under 24 alphanumeric characters, the remaining section is set as 00h.

5-2. 90**h

This item gets the network setting information.

| Lower byte | Contents | SET | GET |
|------------|-----------------|-----|-----|
| 00h | MAC Address | – | ○ |
| 01h | IP Address | – | ○ |
| 02h | Subnet Mask | – | ○ |
| 03h | Default Gateway | – | ○ |
| 04h | DHCP | – | ○ |

0x9000 MAC Address

6 bytes

0x9001 IP Address

4 bytes

0x9002 Subnet Mask

4 bytes

0x9003 Default Gateway

4 bytes

0x9004 DHCP

1 byte

DHCP invalid data value: 0

DHCP valid data value: 1

5-3. F100h

FWD-S42H1/S47H1 dedicated protocol packets can be transmitted to the main microcomputer of FWD-S42H1/S47H1 as ID Talk data according to the FWD-S42H1/S47H1 dedicated protocol. The response of protocol is returned as the data of ID Talk response packets.

Refer to “Section 1 RS-232C” for details on the FWD-S42H1/S47H1 dedicated protocol.

6. Error Codes

An error code list and its details are shown in the table below.

| Category | Error | Error code |
|-------------------------|----------------------|------------|
| Item Error (01**h) | Invalid Item | 01h |
| | Invalid Item Request | 02h |
| | Invalid Length | 03h |
| | Invalid Data | 04h |
| | Short Data | 11h |
| | Not Applicable Item | 80h |
| Community Error (02**h) | Different Community | 01h |
| Request Error (10**h) | Invalid Version | 01h |
| | Invalid Category | 02h |
| | Invalid Request | 03h |
| | Short Header | 11h |
| | Short Community | 12h |
| | Short Command | 13h |
| Network Error (20**h) | Timeout | 01h |
| Comm Error (F0**h) | Timeout | 01h |
| | Check Sum Error | 10h |
| | Framing Error | 20h |
| | Parity Error | 30h |
| | Over Run Error | 40h |
| | Other Comm Error | 50h |
| | Unknown Response | F0h |
| NVRAM Error (F1**h) | Read Error | 10h |
| | Write Error | 20h |

6-1. Item errors

An item error occurs when the Item No. or Data of a request is invalid. The conditions under which each error occurs are described below.

Invalid Item

When Item No. that is not supported is specified

Invalid Item Request

When Item No. is supported, but Request that is not supported is requested

Invalid Length

When the Data Length of the specified Item No. is too long

Invalid Data

When the Data of the specified Item No. differs in the setting range

Short Data

When the length of data differs from the value specified using Data Length

Not Applicable Item

When an item that is not valid at present is specified

6-2. Community error

This error occurs when community differs.

6-3. Request errors

These errors occur when a header or command is invalid. The conditions under which each error occurs are described below.

Invalid Version

When the version of a header is other than 2

Invalid Category

When a category differs

Invalid Request

When a request that is not supported is specified

Short Header

When the received data is 1 byte

Short Community

When the received data is 2 to 5 bytes

Short Command

When the received data is 6 to 9 bytes

6-4. Network error

This error occurs in TCP/IP. The conditions under which an error occurs are described below.

Timeout

When communication was interrupted halfway

6-5. Comm error

This is an error that occurs during communication with the main control microcomputer of display equipment.

Timeout

When the received data is not sent after data transmission

Check Sum Error

When a check sum error occurs in the main control microcomputer

Framing Error

When a framing error occurs

Parity Error

When a parity error occurs

Over Run Error

When an overrun error occurs

Other Comm Error

When other errors occur

Unknown Response

When data that cannot be processed is received

6-6. NVRAM error

Read Error

When the read operation from NVRAM fails

Write Error

When the write operation to NVRAM fails