RS-232C/LAN COMMAND

MV-410RGB
Multi Viewer

Version 3.1 – higher

Table of Contents

1. Communication Setting

1-1. RS-232C Interface Communication Standards

The communication standards when connecting the unit to a serial controller via RS-232C are as follows.

Transmission speed	9600bps
Data length	8 [bit]
Stop bit	1 [bit]
Parity	None
X parameter (flow control)	None

1-2. LAN Interface Communication Setting

The communication standards when connecting the unit to a serial controller via LAN are as follows.

◆ **Communication Protocols**

Application Layer	Original protocol described in this manual
Transport Layer	TCP
Network Layer	IP, ICMP, ARP, RARP
Network Interface Layer	Ethernet (CSMA/CD, 10BASE-T/100BASE-TX)

◆ **Network Setting**

Item	Default Setting	Setting Range
IP address	192.168.0.1	[0-255].[0-255].[0-255].[0-255] (Except 0.0.0.0 and 1.0.0.0)
Subnet mask (Mask length)	24	0-31
Gateway	0.0.0.0	[0-255].[0-255].[0-255].[0-255] Gateway (0.0.0.0) means the gateway is not set.
Port number	2010	Used to send and receive commands
MAC address	Set at the factory	(Cannot be changed.)

NOTE
The network settings above are made in the LAN menu in MV-410RGB. See "LAN menu" in the MV-410RGB Operation Manual for details.

1-3. Notes on the LAN Interface

1) IP address, Subnet mask, Gateway and Port number settings must be set to suit your network system.

2) Consult your system administrator before setting IP address, Subnet mask, Gateway and Port number to avoid troubles, if configuring the system in an existing LAN. An incorrect setting may cause communication error or other problems.

3) The MV-410RGB can establish a connection to single PC via LAN.

4) Release the port on the MV-410RGB when terminating the control from the PC, so that the MV-410RGB can establish a connection again to the PC or to another PC.

5) The command port (port2010) automatically closes the socket connection to the computer if the socket connection is left unused for 5 seconds.

◆ **State Transition Diagram of MV-410RGB**

MV-410RGB
power on

Starting up within 10 seconds.

Socket not -connected

MV-410RGB closes the socket connection if it is left unused for 5 seconds.

Establishing a socket connection from PC

Socket connected
Ready to receive command

MV-410RGB sends response to the command request.

Receiving a command from PC

Processing Command
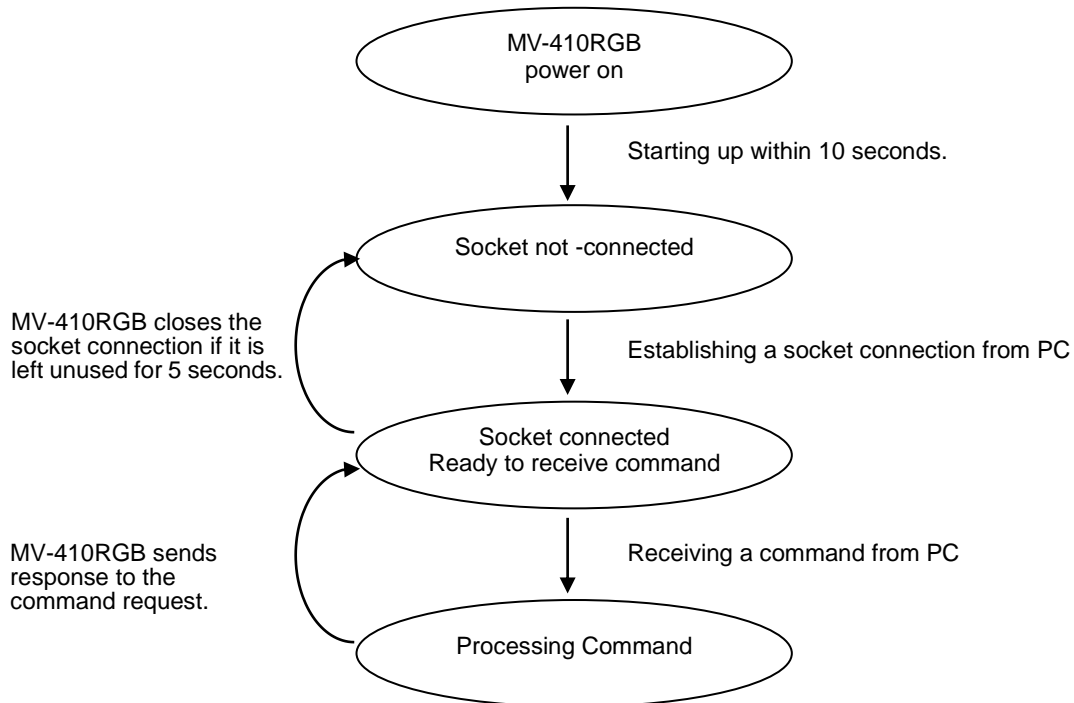
Command

2. Command Protocol Format

All command contents are transmitted and received in ASCII code. Follow each format to make and send message commands. The command formats are as shown in the following pages.

2-1. Commands Formats for RS-232C and LAN (without Password)

◆ **Command Format**

> Command code + Command parameter + CR + LF
> (3 bytes)　　　(Bytes specified for each parameter)

(Works without LF as well)

Ex.) **When sending a command to display in full screen**

Byte	Parameter	Command	Description
1-3	Command code	SDF	
4	Reserve	0	Fixed to "0"
5-6	Input channel	01-04	Channel no. 1-4
7	End code	CR	
8		LF	

NOTE
The MV-410RGB sends a response or a message when receiving a command. Do not send the next command before receiving the response or the message transmitted by the MV-410RGB; Otherwise, the command cannot be read properly.

2-2. Commands Formats for LAN (with Password)

The ID header is located in front of the Command code. The ID number and Password are set in the menu of MV-410RGB.

◆ **Command Format**
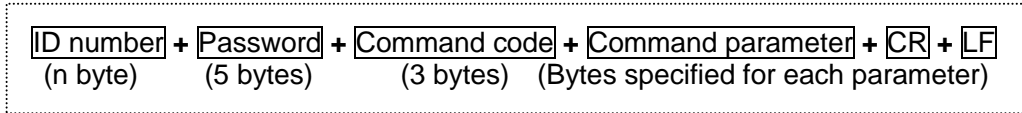
> ID number **+** Password **+** Command code **+** Command parameter **+** CR **+** LF
> (n byte)   (5 bytes)   (3 bytes) (Bytes specified for each parameter)

(Works without LF as well)

Ex.) When sending a command to display in full screen

Byte	Parameter	Command	Description
1	Number of characters for ID	1-8	1- 8 characters
2 to n	ID		ID set for the controlled MV-410RGB.
n+1	Password	1-9	1st digit
n+2		1-9	2nd digit
n+3		1-9	3rd digit
n+4		1-9	4th digit
n+5		1-9	5th digit
n+6	Command code	S	
n+7		D	
n+8		F	
n+9	Reserve	0	Fixed to "0"
n+10 to n+11	Input channel	01-04	Channel no. 1-4
n+12	End code	CR	
n+13		LF	

NOTE
The MV-410RGB sends a response or a message when receiving a command. Do not send the next command before receiving the response or the message transmitted by the MV-410RGB. Otherwise, the command cannot be read properly.

2-3. Response Message Format

After sending commands, you will receive response messages from MV-410RGB.

- **Normal end**

Messages in the following format are returned after normal reception and processing.

Byte	Parameter	Message	Description
1-2	Message code	OK	"OK"
3	End code	CR	
4		LF	

- **Abnormal end**

If something prevents commands from being issued normally, messages in the following format are returned.

Byte	Parameter	Message	Description
1-3	Message code	ERR	"ERR"
4-6	Error code	001	Command Error
		002	Command Length Error
		003	Parameter Range Error
		004	MV-410RGB is in menu mode.
		005	Setting not-available (function not-installed)
		006-999	Future use
7	End code	CR	
8		LF	

Command

3. Control Commands

3-1. Full Screen Display

Displays the specified channel in full screen.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SDF	
4	Reserve	0	Fixed to "0"
5-6	Input channel	01-04	Channel no. 1-4
7	End code	CR	
8		LF	

3-2. Layout Display

Displays the specified layout.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SDS	
4	Reserve	0	Fixed to "0"
5-6	Layout	01-04	Layout no. 1-4
7	End code	CR	
8		LF	

3-3. Signal Type Setting

Selects a type of input signal.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SIS	
4-5	Input channel	01-04	Channel no. 1-4
6	Signal type	0	Analog composite input
		1	Analog RGB input
		2	DVI input
7	End code	CR	
8		LF	

3-4. Input Format Detection Setting

Selects how to specify the format of input signal.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SID	
4-5	Input channel	01-04	Channel no. 1-4
6	Input format detection	0	AUTO
		1	MANUAL
7	Input format	* ("0" for AUTO)	*Refer to the Input Format Code table below
8	End code	CR	
9		LF	

If specifying 1366 x 768:

7-8	Input format	10	*Refer to the Input Format Code table below
9	End code	CR	
10		LF	

◆ **Input Format Code**

Code	Composite	RGB / DVI
0	NTSC	640 x 480
1	PAL	1024 x 768
2		1280 x 1024
3		1360 x 768
4		1600 x 1200
5		1920 x 1200
6		1440 x 900
7		1680 x 1050
8		1920 x 1080
9		1280 x 720
10		1366 x 768

Command

3-5. Input Signal Display Offset Setting

Sets offset for the input signal display.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.
"ERR003" message is returned, if DETECT is set to AUTO or TYPE is set to COMPOSITE in the INPUT FORMAT – FORMAT menu.

Byte	Parameter	Command	Description
1-3	Command code	SIO	
4-5	Input channel	01-04	Channel no. 1-4
6	Horizontal Offset Polarity	0	+
		1	- * "-" is not selectable for DVI signals.
7-9	Horizontal Offset Value	000-255	DVI: 000-255 Pixel RGB: Variation of offset setting range for different resolutions are shown in the table below.
10	Vertical Offset Polarity	0	+
		1	- * "-" is not selectable for DVI signals.
11-13	Vertical Offset Value	000-127	DVI: 000-127 Line RGB: Variation of offset setting range for different resolutions are shown in the table below.
14	End code	CR	
15		LF	

◆ **RGB Offset Setting Range**

Resolution	Minimum horizontal value	Maximum horizontal value	Minimum vertical value	Maximum vertical value
640x480	-40	+255	-25	+127
1024x768	-160	+255	-29	+127
1280x1024	-248	+255	-38	+127
1360x768	-255	+255	-18	+127
1366x768	-213	+255	-23	+127
1600x1200	-255	+255	-46	+127
1920x1200	-80	+255	-26	+127
1440x900	-232	+255	-25	+127
1680x1050	-255	+255	-30	+127
1920x1080	-148	+255	-36	+127
1280x720	-220	+255	-20	+127
1366x768	-213	+255	-23	+127

3-6. RGB Input Total Horizontal Pixels Setting

Sets the value of the total horizontal pixels for the RGB input signals.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.
"ERR003" message is returned, if DETECT is set to AUTO or TYPE is set to COMPOSITE in the INPUT FORMAT – FORMAT menu.

Byte	Parameter	Command	Description
1-3	Command code	SIT	
4-5	Input channel	01-04	Channel no. 1-4
6	Pixel polarity	0	+
		1	-
7-9	Pixel value	000-255	000-255 Pixel
10	End code	CR	
11		LF	

3-7. RGB Input Sync Polarity Setting

Sets the horizontal and vertical sync polarity for the RGB input signals. With normal reception and processing, the response message is "OK." "ERR004" message is returned during MENU screen display. "ERR003" message is returned, if DETECT is set to AUTO or TYPE is set to COMPOSITE in the INPUT FORMAT – FORMAT menu.

Byte	Parameter	Command	Description
1-3	Command code	SIP	
4-5	Input channel	01-04	Channel no. 1-4
6	Horizontal sync polarity	0	Normal
		1	Reverse
7	Vertical sync polarity	0	Normal
		1	Reverse
8	End code	CR	
9		LF	

3-8. Output Video Frequency Setting

Sets the output video frequency. With normal reception and processing, the response message is "OK." "ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SOF	
4	Reserve	0	Fixed to "0"
5	Frequency	0	60Hz
		1	59.94Hz
		2	50Hz
6	End code	CR	
7		LF	

3-9. Display Mode Setting

Selects a display mode. With normal reception and processing, the response message is "OK." "ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SAM	
4-5	Reserve	00	Fixed to "00"
6	Display mode	0	Mode1
		1	Mode2
		2	Mode3
7	End code	CR	
8		LF	

◆ **Display mode**

Mode1 *	The aspect ratio of input video is retained. In full screen, title (caption) and audio level meter are displayed outside images
Mode2 *	The aspect ratio of input video is retained. In full screen, title (caption) and audio level meter are displayed on images
Mode3	The aspect ratio of input video is not retained and video image is fitted to screen width.

* In split screen, mode1 and mode 2 have the same appearance.

3-10. Output Resolution Setting for Layout Screen

Sets an output resolution for layout screen.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SLO	
4	Reserve	0	Fixed to "0"
5-6	Layout	01-04	Layout no. 1-4
7-8	Output Resolution	00	1280 x 1024
		01	1360 x 768
		02	1600 x 1200
		03	1920 x 1200
		04	1440 x 900
		05	1680 x 1050
		06	1920 x 1080
		07	1280 x 720
9	End code	CR	
10		LF	

NOTE
All channel assignments are cleared when the output size is changed.

3-11. Screen Layout Setting

Defines each screen layout (Layout1-4).
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SLD	
4	Reserve	0	Fixed to "0"
5-6	Layout screen	01-04	Layout no. 1-4
7-8	Displayed channel	01-04	Channel no. 1-4
		80	CLOCK
9	Display ON/OFF	0	OFF
		1	ON
10-11	Layer (display priority)	01-05	Sets layer priority in the layout 01(Lowest) to 05(Highest)
12-15	Window position: LEFT	0000-1800	Set in multiples of 2. (*1)
16-19	Window position: TOP	0000-1120	Set in multiples of 2. (*1)
20-23	Window size: WIDTH	0120-1920	Set in multiples of 8. (*1)
24-27	Window size: HEIGHT	0080-1200	Set in multiples of 8. (*1)
28-31	Title position: LEFT	0000-1920	Set in multiples of 2. (*1)
32-35	Title position: TOP	0000-1200	Set in multiples of 2. (*1)
36-39	Reserve	0000	Fixed to "0000"
40-43	Reserve	0000	Fixed to "0000"
44-47	Reserve	0000	Fixed to "0000"
48-51	Reserve	0000	Fixed to "0000"
52	Reserve	1	(*2)
53-54	Reserve	01	(*2)
55	End code	CR	
56		LF	

(*1) Set all digits to "0" when "Display ON/OFF" is set "OFF".
(*2) Set all digits to "0" when "Display ON/OFF" is set "OFF", and set as shown above when "Display ON/OFF" is set "ON".

NOTE
"ERR003" message is returned if any number other than the specified multiples is set, or the total of the values set for window position and window size exceeds the actual output resolution.

3-12. Crop Area Setting

Specifies the area and size to crop images.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SCR	
4	Reserve	0	Fixed to "0"
5-6	Screen display	00	Full screen
		01-04	Layout no. 1-4
7-8	Input channel	01-04	
9-12	Crop area size (Top)	0000-1200	Set in multiples of 4.
13-16	Crop area size (Bottom)	0000-1200	Set in multiples of 4.
17-20	Crop area size (Left)	0000-0960	Set in multiples of 4. (1=2pixels)
21-24	Crop area size (Right)	0000-0960	Set in multiples of 4. (1=2pixels)
25	End code	CR	
26		LF	

IMPORTANT
The image will not be displayed properly if the set value exceeds the actual input resolution. Make sure that the total of the crop area size top and bottom or the left and right does not exceed the actual input resolution.

3-13. Save Layout

Saves screen layouts.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SLS	
4	Reserve	0	Fixed to "0"
5-6	Layout screen	01-04	Layout no. 1-4
7	End code	CR	
8		LF	

3-14. Title Setting

Specifies the title settings for each channel.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	STT	
4	Reserve	0	Fixed to "0"
5-6	Screen Display	00	Full screen
		01-04	Layout no. 1-4
7-8	Channel	01-04	Channel no. 1-4
		80	CLOCK
9	Title display	0	OFF
		1	ON
10	Title character size	0	SMALL
		1	MEDIUM
		2	LARGE
11-12	Title color	00	WHITE
		01	YELLOW
		02	GREEN
		03	CYAN
		04	RED
		05	MAGENTA
		06	BLUE
		07	GRAY
		08	BLACK
13- (n −2)	Text data (1byte/character)	ASCII code	Maximum of 16 characters
n-1	End code	CR	
n		LF	

3-15. Border Setting

Specifies the border settings for each channel.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SBD	
4	Reserve	0	Fixed to "0"
5-6	Screen Display	01-04	Layout no. 1-4
7-8	Input channel	00	Fixed to "00"
9	Border Display	0	OFF
		1	ON
10-11	Border width: TOP	00-50	In 2-line steps (0-100lines)
12-13	Border width: BOTTOM	00-50	In 2-line steps (0-100lines)
14-15	Border width: LEFT	00-50	In 2-pixel steps (0-100pixels)
16-17	Border width: RIGHT	00-50	In 2-pixel steps (0-100pixels)
18-19	Border color	00	WHITE
		01	YELLOW
		03	CYAN
		05	MAGENTA
		06	BLUE
		07	GRAY
		08	BLACK
20-21	Reserve	00000	
22	End code	CR	
23		LF	

3-16. Full Screen Setting

Specifies the settings for full screen display.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SFL	
4	Reserve	0	Fixed to "0"
5-6	Full screen output size (Resolution)	00	1280 x 1024
		01	1360 x 768
		02	1600 x 1200
		03	1920 x 1200
		04	1440 x 900
		05	1680 x 1050
		06	1920 x 1080
		07	1280 x 720
7	End code	CR	
8		LF	

3-17. Tally Display Setting

Specifies the settings for tally display.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	STL	
4-5	Reserve	00	Fixed to "00"
6	Tally detection	0	OFF
		1	ON
7	Simultaneous tallies indication	0	RED
		1	UMBER
8-12	Reserve	00000	
13	End code	CR	
14		LF	

3-18. Video Loss ON/OFF

Sets video loss detection ON/OFF.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SVO	
4-5	Input channel	01-04	Channel no. 1-4
6	Video loss detection	0	OFF
		1	ON
7	End code	CR	
8		LF	

3-19. Video Loss Display Setting

Specifies the setting for video loss alarm display.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SVL	
4-6	Video loss display time	000	Reset by "Video loss reset command", video switching or input restoration.
		001-100	1-100sec (Reset after a specified-second display)
7-11	Reserve	00000	
12	End code	CR	
13		LF	

3-20. Video Loss Reset

Performs alarm reset for video loss.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SVR	
4	End code	CR	
5		LF	

3-21. Clock Display Selection

Selects a clock type for the clock display.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SDD	
4	Output channel	0	
5	Clock type	0	Analog clock
		1	Digital clock
6-7	Display type	00-01	
8-12	Reserve	00000	
13	End code	CR	
14		LF	

3-22. Internal Clock Adjustment

Adjusts date and time for the internal clock, on which the analog clock display on the screen or other clock functions are based.
With normal reception and processing, the response message is "OK."
"ERR004" message is returned during MENU screen display.

Byte	Parameter	Command	Description
1-3	Command code	SDT	
4-15	Date and Time	00-99	Year (last two digits)
		01-12	Month
		01-31	Day
		00-23	Hour
		00-59	Minute
		00-59	Second
16	End code	CR	
17		LF	

4. Status Request Commands

4-1. Version

Requests the software version and hardware version of the MV-410RGB.
Returns a message as shown below after normal reception and processing.

◆ **[RVS] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RVS	
4	Software / Hardware	0	Software
		1	Hardware
5-6	Type of hardware * "00" for software	00	Output hardware
		01-02	Input hardware 1 or 2
7	End code	CR	
8		LF	

◆ **[AVS] Status Request Response Messages**

Byte	Parameter	Message	Description
1-3	Message code	AVS	
4	Software / Hardware	0	Software
		1	Hardware
5-6	Type of hardware * "00" for software	00	Output hardware
		01-02	Input hardware 1 or 2
7-10	Version 1	AAAA	Returns "0000" if there is no software / hardware for the version display.
11-14	Version 2	BBBB	Ditto
15-18	Version 3	CCCC	Ditto
19-22	Version 4	DDDD	Ditto
23-26	Version 5	EEEE	Ditto
27	End code	CR	
28		LF	

4-2. Output Screen Status

Requests the current status of "Output channel."
Returns a message as shown below after normal reception and processing.

◆ **[RDP] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RDP	
4	Reserve	0	Fixed to "0"
5	End code	CR	
6		LF	

◆ **[ADP] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	ADP	
4	Reserve	0	
5	Display mode	0	Video display mode
		2	Menu display mode
6	Screen display (Fixed to "0" in MENU mode)	0	Full screen display
		1	Split screen display
7	Selected screen (Fixed to "01" in MENU mode)	01-04	In Full screen display: Channel no. 1-4 / In Split screen display: Layout no. 1-4
8	End code	CR	
9		LF	

4-3. Fan Alarm Status

Requests the current status of "Fan alarm."
Returns a message as shown below after normal reception and processing.

◆ **[RFA] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RFA	
4	End code	CR	
5		LF	

◆ **[AFA] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AFA	
4	Fan alarm Status	0	No fan alarm
		1	Fan alarm
5	End code	CR	
6		LF	

4-4. Signal Type Information

Request the signal type of the current input.
Returns a message as shown below after normal reception and processing.

◆ **[RIS] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RIS	
4-5	Input channel	01-04	Channel no. 1-4
6	End code	CR	
7		LF	

◆ **[AIS] Status Request Reponse Message**

Byte	Parameter	Message	Description
1-3	Message code	AIS	
4-5	Input channel	01-04	Channel no. 1-4
6	Signal type	0	Analog composite input
		1	Analog RGB input
		2	DVI input
7	End code	CR	
8		LF	

4-5. Input Format Detection Setting Status

Request the information on the current settings for how to specify the format of input signal.
Returns a message as shown below after normal reception and processing.

◆ **[RID] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RID	
4-5	Input channel	01-04	Channel no. 1-4
6	End code	CR	
7		LF	

◆ **[AID] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AID	
4-5	Input channel	01-04	Channel no. 1-4
6	Input format detection	0	AUTO
		1	MANUAL
7	Input format	* ("0" for AUTO)	*Refer to the Input Format Code table below
8	End code	CR	
9		LF	

If 1366 x 768 is set:

7-8	Input format	10	*Refer to the Input Format Code table below
9	End code	CR	
10		LF	

Input Format Code

Code	Composite	RGB / DVI
0	NTSC	640 x 480
1	PAL	1024 x 768
2		1280 x 1024
3		1360 x 768
4		1600 x 1200
5		1920 x 1200
6		1440 x 900
7		1680 x 1050
8		1920 x 1080
9		1280 x 720
10		1366 x 768

Command

4-6. Input Signal Display Offset Setting Status

Request the information on the offset setting for the selected channel input.
Returns a message as shown below after normal reception and processing.

◆ **[RIO] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RIO	
4-5	Input channel	01-04	Channel no. 1-4
6	End code	CR	
7		LF	

◆ **[AIO] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AIO	
4-5	Input channel	01-04	Channel no. 1-4
6	Horizontal Offset Polarity	0	+
		1	- * "-" is not selectable for DVI signals.
7-9	Horizontal Offset Value	000~255	DVI: 000-255 Pixel RGB: Variation of offset setting range for different resolutions are shown in the table below.
10	Vertical Offset Polarity	0	+
		1	- * "-" is not selectable for DVI signals.
11-13	Vertical Offset Value	000~127	DVI: 000-127 Line RGB: Variation of offset setting range for different resolutions are shown in the table below.
14	End code	CR	
15		LF	

◆ **RGB Offset Setting Range**

Resolution	Minimum horizontal value	Maximum horizontal value	Minimum vertical value	Maximum vertical value
640x480	-40	+255	-25	+127
1024x768	-160	+255	-29	+127
1280x1024	-248	+255	-38	+127
1360x768	-255	+255	-18	+127
1366x768	-213	+255	-23	+127
1600x1200	-255	+255	-46	+127
1920x1200	-80	+255	-26	+127
1440x900	-232	+255	-25	+127
1680x1050	-255	+255	-30	+127
1920x1080	-148	+255	-36	+127
1280x720	-220	+255	-20	+127
1366x768	-213	+255	-23	+127

4-7. RGB Input Total Horizontal Pixels Setting Status

Request the set value of the total horizontal pixels for the RGB input signals.
Returns a message as shown below after normal reception and processing.

◆ **[RIT] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RIT	
4-5	Input channel	01-04	Channel no. 1-4
6	End code	CR	
7		LF	

◆ **[AIT] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AIT	
4-5	Input channel	01-04	Channel no. 1-4
6	Pixel polarity	0	+
		1	-
7-9	Pixel value	000-255	000-255 Pixel
10	End code	CR	
11		LF	

4-8. RGB Input Sync Polarity Setting Status

Request the information on the horizontal and vertical sync polarity settings for the RGB input signals.
Returns a message as shown below after normal reception and processing.

◆ **[RIP] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RIP	
4-5	Input channel	01-04	Channel no. 1-4
6	End code	CR	
7		LF	

◆ **[AIP] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AIP	
4-5	Input channel	01-04	Channel no. 1-4
6	Horizontal sync polarity	0	Normal
		1	Reverse
7	Vertical sync polarity	0	Normal
		1	Reverse
8	End code	CR	
9		LF	

4-9. Output Video Frequency

Requests the setting status of output video frequency.
Returns a message as shown below after normal reception and processing.

◆ **[ROF] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	ROF	
4	Reserve	0	Fixed to "0"
5	End code	CR	
6		LF	

◆ **[AOF] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AOF	
4	Reserve	0	
5	Frequency	0	60Hz
		1	59.94Hz
		2	50Hz
6	End code	CR	
7		LF	

4-10. Display Mode

Requests the setting status of display mode.
Returns a message as shown below after normal reception and processing.

◆ **[RAM] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RAM	
4-5	Reserve	00	Fixed to "00"
6	End code	CR	
7		LF	

◆ **[AAM] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AAM	
4-5	Reserve	00	
6	Screen display mode	0	Mode1
		1	Mode2
		2	Mode3
7	End code	CR	
8		LF	

4-11. Output Resolution of Layout Screen

Requests the setting status of "Output resolution" for each layout screen.
Returns a message as shown below after normal reception and processing.

◆ **[RLO] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RLO	
4	Reserve	0	Fixed to "0"
5-6	Target screen	01-04	
7	End code	CR	
8		LF	

◆ **[ALO] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	ALO	
4	Reserve	0	
5-6	Target screen	01-04	Layout no. 1-4
7-8	Output Resolution	00	1280 x 1024
		01	1360 x 768
		02	1600 x 1200
		03	1920 x 1200
		04	1440 x 900
		05	1680 x 1050
		06	1920 x 1080
		07	1280 x 720
9	End code	CR	
10		LF	

Command

4-12. Layout Screen Status

Requests the status of each layout screen.
Returns a message as shown below after normal reception and processing.

◆ **[RLD] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RLD	
4	Reserve	0	Fixed to "0"
5-6	Target screen	01-04	Layout no. 1-4
7-8	Target channel	01-04	Channel no. 1-4
		80	CLOCK
9	End code	CR	
10		LF	

◆ **[ALD] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	ALD	
4	Reserve	0	
5-6	Target screen	01-04	Layout no. 1-4
7-8	Target channel	01-04	Channels no. 1-4
		80	CLOCK
9	Display ON/OFF	0	OFF
		1	ON
10-11	Layer (display priority)	00-05	Layer priority in layout screen
12-15	Window position: LEFT	0000-1800	(*1)
16-19	Window position: TOP	0000-1120	(*1)
20-23	Window size: WIDTH	0120-1920	(*1)
24-27	Window size: HEIGHT	0080-1200	(*1)
28-31	Title position: LEFT	0000-1920	(*1)
32-35	Title position: TOP	0000-1200	(*1)
36-39	Reserve	0000	Always respond "0000"
40-43	Reserve	0000	Always respond "0000"
44-47	Reserve	0000	Always respond "0000"
48-51	Reserve	0000	Always respond "0000"
52	Reserve	1	(*2)
53-54	Reserve	01	(*2)
55	End code	CR	
56		LF	

(*1) All digits are "0" when "Display ON/OFF" is set "OFF".
(*2) All digits are "0" when "Target channel" is set "CLOCK".

4-13. Crop Area Setting Status

Requests the setting status of "Crop area".
Returns a message as shown below after normal reception and processing.

◆ **[RRG] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RCR	
4	Reserve	0	
5-6	Target screen	00	Full screen
		01-04	Layout no. 1-4
7-8	Target channel	01-04	Channel no. 1-4
9	End code	CR	
10		LF	

◆ **[ARG] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	ACR	
4	Reserve	0	
5-6	Target screen	00	Full screen
		01-04	Layout no. 1-4
7-8	Target channel	01-04	Channel no. 1-4
9-12	Crop area size (Top)	0000-1200	Set in multiples of 4.
13-16	Crop area size (Bottom)	0000-1200	Set in multiples of 4.
17-20	Crop area size (Left)	0000-0960	Set in multiples of 4. (1=2pixels)
21-24	Crop area size (Right)	0000-0960	Set in multiples of 4. (1=2pixels)
25	End code	CR	
26		LF	

Command

4-14. Title Information

Requests the title information for each channel.
Returns a message as shown below after normal reception and processing.

◆ **[RTT] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RTT	
4	Reserve	0	Fixed to "0"
5-6	Target screen	00	Full screen
		01-04	Layout no. 1-4
7-8	Target channel	01-04	Channel no. 1-4
		80	CLOCK
9	End code	CR	
10		LF	

◆ **[ATT] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	ATT	
4	Reserve	0	
5-6	Target screen	00	Full screen
		01-04	Layout no. 1-4
7-8	Target channel	01-04	Channel no. 1-4
		80	CLOCK
9	Title display	0	OFF
		1	ON
10	Title character size	0	SMALL
		1	MEDIUM
		2	LARGE
11-12	Title color	00	WHITE
		01	YELLOW
		02	GREEN
		03	CYAN
		04	RED
		05	MAGENTA
		06	BLUE
		07	GRAY
		08	BLACK
13- (n-2)	Text data (1byte/character)	ASCII code	Maximum of 16 characters
n-1	End code	CR	
n		LF	

4-15. Border Information

Requests the border information for each layout screen.
Returns a message as shown below after normal reception and processing.

◆ **[RBD] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RBD	
4	Reserve	0	Fixed to "0"
5-6	Target screen	01-04	Layout no. 1-4
7-8	Target channel	00	
9	End code	CR	
10		LF	

◆ **[ABD] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	ABD	
4	Reserve	0	
5-6	Target screen	01-04	Layout no. 1-4
7-8	Target channel	00	
9	Border Display	0	OFF
		1	ON
10-11	Border width: TOP	00-50	0-100 lines
12-13	Border width: BOTTOM	00-50	0-100 lines
14-15	Border width: LEFT	00-50	0-100 pixels
16-17	Border width: RIGHT	00-50	0-100 pixels
18-19	Border color	00	WHITE
		01	YELLOW
		03	CYAN
		05	MAGENTA
		06	BLUE
		07	GRAY
		08	BLACK
20-21	Reserve	00000	
22	End code	CR	
23		LF	

Command

4-16. Full Screen Information

Requests the setting status of "Output resolution" and "Display mode" for full screen.
Returns a message as shown below after normal reception and processing.

◆ **[RFL] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RFL	
4	Reserve	0	Fixed to "0"
5	End code	CR	
6		LF	

◆ **[AFL] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AFL	
4	Reserve	0	
5-6	Full screen output Resolution	00	1280 x 1024
		01	1360 x 768
		02	1600 x 1200
		03	1920 x 1200
		04	1440 x 900
		05	1680 x 1050
		06	1920 x 1080
		07	1280 x 720
7	End code	CR	
8		LF	

4-17. Tally Display Setting

Requests the setting status of tally display.
Returns a message as shown below after normal reception and processing.

◆ **[RTL] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RTL	
4-5	Reserve	00	Fixed to "00"
6	End code	CR	
7		LF	

◆ **[ATL] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	ATL	
4-5	Reserve	00	
6	Tally detection	0	OFF
		1	ON
7	Simultaneous tallies indication	0	RED
		1	UMBER
8-12	Reserve	00000	
13	End code	CR	
14		LF	

4-18. Video Loss ON/OFF

Requests the setting status of "Video loss detection."
Returns a message as shown below after normal reception and processing.

◆ **[RVO] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RVO	
4-5	Target channel	01-04	Channel no. 1-4
6	End code	CR	
7		LF	

◆ **[AVO] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AVO	
4-5	Target channel	01-04	Channel no. 1-4
6	Video loss detection	0	OFF
		1	ON
7	End code	CR	
8		LF	

4-19. Video Loss Display Time Setting

Requests the setting status of "Video loss display time."
Returns a message as shown below after normal reception and processing.

◆ **[RVL] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RVL	
4	End code	CR	
5		LF	

◆ **[AVL] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	AVL	
4-6	Video loss display time	000	Reset by "Video loss reset command", video switching or input restoration.
		001-100	1-100sec (Reset after a specified-second display.)
7-11	Reserve	00000	
12	End code	CR	
13		LF	

4-20. Clock Display Selection

Request the setting status of "Clock display types".
Returns a message as shown below after normal reception and processing.

◆ **[RDD] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RDD	
4	Reserve	0	
5	End code	CR	
6		LF	

◆ **[ADD] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	ADD	
4	Reserve	0	
5	Clock type	0	Analog clock
		1	Digital clock
6-7	Display type	00-01	
8-12	Reserve	00000	
13	End code	CR	
14		LF	

4-21. Internal Clock Time

Requests the current internal clock time.
Returns a message as shown below after normal reception and processing.

◆ **[RDT] Status Request Command**

Byte	Parameter	Command	Description
1-3	Command code	RDT	
4	End code	CR	
5		LF	

◆ **[ADT] Status Request Response Message**

Byte	Parameter	Message	Description
1-3	Message code	ADT	
4-15	Date/Time	00-99	Year (last two digits)
		01-12	Month
		01-31	Day
		00-23	Hour
		00-59	Minute
		00-59	Second
16	End code	CR	
17		LF	

Command