Roland

V-1600HD

MULTI-FORMAT VIDEO SWITCHER

Remote Control

Reference Guide

V-1600HD supports remote control via MIDI (V-LINK) and RS-422. This document describes connections and settings for remote control.

Contents

Remote Controlling via MIDI

V-1600HD's MIDI Control Modes

The V-1600HD supports the following 3 control modes. Select the suitable mode according to the device you are connecting or your application.

Standard MIDI Mode

This is the mode to remotely control the V-1600HD from an external MIDI device or to link multiple V-1600HD units.

V-LINK Master Mode

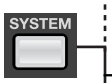
This is the mode to remotely control an external V-LINK device from the V-1600HD. Use this when you wabt to remotely control a V-LINK compatible audio mixer or video presenter from the V-1600HD.

V-LINK Slave Mode

This is the mode to remotely control the V-1600HD from an external V-LINK device. Use this when you want to remotely control the V-1600HD from musical instruments or other V-LINK compatible devices.

V-1600HD's MIDI Menu

Go to the SYSTEM menu of the V-1600HD for MIDI setup. The chart below shows the menu items within MIDI setup.



MIDI	This adjusts the settings for MIDI	Default	Setting Range
Master Switch	This turns on/off the V-1600HD's MIDI iinput/output	OFF	OFF/ON
Input Through	This sets thru-out for MIDI input on or off	OFF	OFF/ON
V-LINK Master	This enables or disables operations as V-LINK master device	OFF	OFF/ON
Device ID	This sets V-1600HD's MIDI device ID	17(0x10)	1(0x00) - 32(0x1F)
Channel	This sets the MIDI Tx and Rx channel	1	1 - 16
Control Assign			
PGM Switch	This turns on/off the controls to PGM buttons	OFF	OFF/ON
PST/EFFECT Switch	This turns on/off the controls to PST/EFFECT buttons	OFF	OFF/ON
DSK Source Channel	This turns on/off the controls to DSK source channel	OFF	OFF/ON
Transition Time	This turns on/off the controls to TRANSITION TIME dial	OFF	OFF/ON
Wipe Pattern	This turns on/off the controls to WIPE PATTERN buttons	OFF	OFF/ON
Output Fade	This turns on/off the controls to OUTPUT FADE button	OFF	OFF/ON
PinP Switch	This turns on/off the controls to [ON] button of PinP	OFF	OFF/ON
Key Switch	This turns on/off the controls to [ON] button of Key	OFF	OFF/ON
Take Switch	This turns on/off the controls to TAKE button	OFF	OFF/ON
DSK Take Switch	This turns on/off the controls to DSK button	OFF	OFF/ON
Video Fader	This turns on/off the controls to Video Fader (T-bar)	OFF	OFF/ON

MEMO

Turn the [MIDI Master Switch] to [On] when you activate the MIDI remote control function of V-1600HD.

MEMO

When [Input Through] in [MIDI] menu is turned to [On], the signal input to V-1600HD's MIDI IN connector is output from MIDI OUT connector without any alternation. V-1600HD has no exclusive message to output.

Using in Standard MIDI Mode

Set the V-1600HD's MIDI settings as shown below when you use the unit in standard MIDI mode.

- MIDI Master Switch On
- V-LINK Master Off

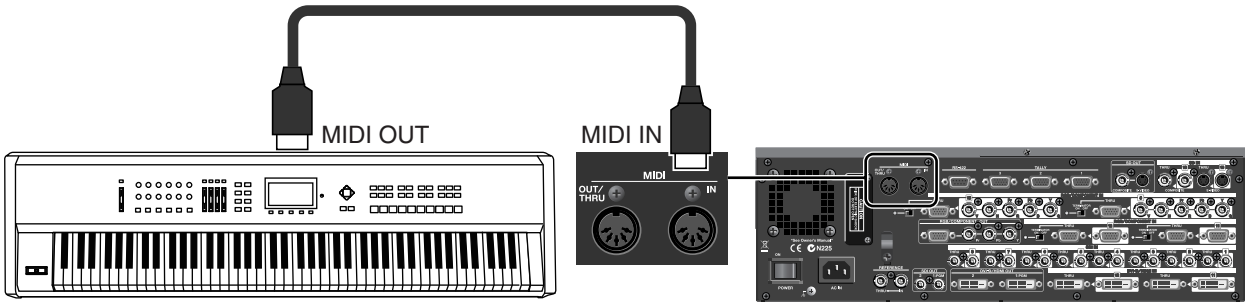
Select [On] of [Control Assign] items to enable control from an external device.

You can remotely control the following functions. Refer to "MIDI Implementation" (p. 6) for details.

- Selecting PGM and PST/EFFECT channels.
- Operating [TAKE] button.
- Selecting DSK source channel.
- Operating [DSK] button.
- Changing transition time.
- Changing transition type.
- Applying output fade.
- Changing output fade time.
- Turning on/off PinP and Key.
- Changing internal position of video fader (T-bar).
- Loading setup to MEMORY button.

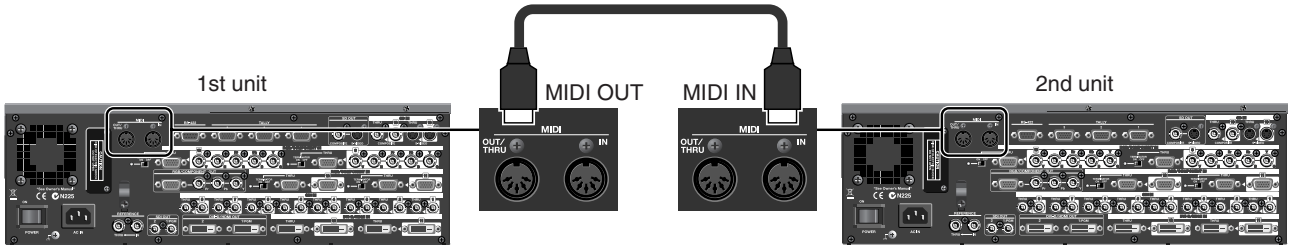
Remote Controlling from an External MIDI device

To remotely control the V-1600HD from an external MIDI device like a keyboard, make MIDI connection as below. Refer to "MIDI Implementation" (p. 6) for commands to be sent from an external device.



Remote Controlling Another V-1600HD

To remotely control a 2nd V-1600HD unit from the 1st unit, make the MIDI connection as shown below. In this case, the 2nd unit automatically follows your operation of the 1st unit.



Using in V-LINK Master Mode

Set the V-1600HD's MIDI settings as shown below to use the unit in V-LINK Master mode.

- MIDI Master Switch On
- V-LINK Master On

* Connect the MIDI OUT of the V-1600HD to the MIDI IN of the external device when you use the unit in V-LINK Mater Mode.

Set the MIDI device IDs and MIDI channels of the V-1600HD and external MIDI device to matching values.

In V-LINK Master Mode, the V-1600HD can remotely control the following functions of connected devices.

Connecting with an Audio Mixer

The V-1600HD can remotely control Roland (RSS) V-Mixers like the M-400 and M-300. Audio channels can be linked to specific V-1600HD channels. When a particular video channel is selected/deselected, the corresponding audio channel levels are auctomatically increased/decreased.

Connecting with a Video Mixer

The V-1600HD can remotely control Roland (Edirol) video mixers like the V-4, V-8, LVS-800 etc. While holding down the PST/EFFECT input select buttons of the connected slave video mixer, press an input button on PGM side. This will select the corresponding input channel on the slave video mixer.

Connecting with a Video Presenter

The V-1600HD can remotely control Roland (Edirol) video presenters like the PR-50, PR-80 etc. While holding down the PST/EFFECT input select button of the connected video presenter, press an input button on PGM side. This will select the corresponding clip to play on the video presenter. Repeat the same steps to pause and re-start playback. Press the [TAKE] button or move the video fader (T-bar) to re-start playback of the paused clip.

Connecting with the MVS-12 Multi-Viewer/Switcher

The V-1600HD can remotely control the Roland MVS-12. You can switch source channels of Matrix Out 1 in a manner similar to other video mixers. Refer to the MVS-12 owner's manual for details.

Using in V-LINK Slave Mode

Set the V-1600HD's MIDI setting as shown below to use the unit in V-LINK Slave mode.

- MIDI Master Switch On
- V-LINK Master Off

* Connect the MIDI OUT of the external device to the MIDI IN of the V-1600HD when you use the unit in V-LINK Slave Mode.

Set the MIDI device IDs and MIDI channels of the V-1600HD and external MIDI device to matching values.

Refer to "Parameter Address Map" (p. 12) for the functions you can remotely control in V-LINK Slave Mode.

MIDI Implementation

Model: V-1600HD Version: 1.00 Date: June 14. 2010

Symbol	Item	Setting Range
n:	MIDI Channel	0H-FH (ch.1 - ch.16)

Messages Transmitted/Received in Standard MIDI Mode

* The V-1600HD ignores the messages if the Control Assign menu is turned to OFF. Turn it to ON for the functions to remotely control in SYSTEM menu.
* The V-1600HD transmits or receives messages while MIDI Master Switch in SYSTEM menu is turned to ON.
* The V-1600HD does not transmit or receive these messages while V-LINK Master function is turned to ON.

Control Change

PGM Channel Select

Status	2nd Byte	3rd Byte
BnH	0cH	kkH

kk=PGM Channel Number : 00H-0dH (ch.1 - ch.14)

PST/EFFECT Channel Select

Status	2nd Byte	3rd Byte
BnH	0dH	kkH

kk=PST/EFFECT Channel Number : 00H-0dH (ch.1 - ch.14)

DSK Source Channel Select

Status	2nd Byte	3rd Byte
BnH	10H	kkH

kk=DSK Source Channel Number : 00H-0dH (ch.1 - ch.14)

Transition Time Setup

Status	2nd Byte	3rd Byte
BnH	11H	vvH

vv=Transition Time (100ms) : 00H-64H (0ms - 10000ms)

Wipe Pattern Select

Status	2nd Byte	3rd Byte
BnH	12H	wwH

ww=Wipe Pattern : 00H-07H (0:WIPE1, 1:WIPE2, 2:WIPE3, 3:WIPE4, 4:FAM, 5:NAM, 6:CUT, 7:MIX)

Output Fade (Fade Time & Fade Start)

Status	2nd Byte	3rd Byte
BnH	13H	vvH

vv=Output Fade Time (100ms) : Starts Fade at 00H-64H (0ms - 10000ms)

On/Off Picture in Picture

Status	2nd Byte	3rd Byte
BnH	40H	xxH

xx=PinP ON/OFF : 00H-7FH (Toggle ON/OFF)

On/Off Key Composition

Status	2nd Byte	3rd Byte
BnH	41H	xxH

xx=Key ON/OFF : 00H-7FH (Toggle ON/OFF)

Start TAKE

Status	2nd Byte	3rd Byte
BnH	42H	xxH

xx=Start TAKE : 00H-7FH

Start DSK TAKE

Status	2nd Byte	3rd Byte
BnH	43H	xxH

xx=Start DSK TAKE : 00H-7FH

Video Fader Control

Status	2nd Byte	3rd Byte
BnH	63H	llH
BnH	62H	mmH

ll,mm=Video Fader position value : 00 00H - 0F 7FH (0 - 2047)

Fixes at reception of mm.

Program Change

MEMORY Load

Status	2nd Byte
CnH	ppH

pp= MEMORY Number : 00H-3FH (1-1 - 8-8)

Messages Transmitted in V-LINK Master Mode

* The V-1600HD transmits these messages while both MIDI Master Switch and V-LINK Master Switch are turned ON in the SYSTEM menu.

Pitch Bend Change

Video Presenter Playback Speed Control

Status	2nd Byte	3rd Byte
EnH	llH	mmH

ll, mm = Playback speed value

Program Change

Cross Point Channel Setup

Status	2nd Byte
CnH	ppH

pp= Cross Point Channel Number : 00H-0EH (ch.1 - ch.14)

System Exclusive Message

Status	2nd Byte	3rd Byte
F0H	iiH,ddH, ... ,eeH	F7H

F0:System Exclusive Message Status

ii=ID Number : This is the manufacturer's ID to identify the manufacturer of the product. Roland's manufacturer ID is 41H. The ID number of 7EH and 7FH can be used as universal non real-time message (7EH) or universal real-time message (7FH) for expansion of MIDI standards.

dd,...,ee = data : 00H - 7FH (0 - 127)

F7H:EOX(End of Exclusive)

Data Set 1 (DT1)

The message to transmit actual data. This should be used when you set data to the product.

Status	Data Bytes	Status
F0H	41H,dev,00H,51H, 12H,aaH,bbH,ccH, ddH,...,eeH,sum	F7H

Byte	Explanation
F0H	Exclusive Status
41H	ID Number (Roland)
dev	Device ID(dev : 00H -1FH, 10H by default)
00H	Upper byte of Model ID (V-LINK message)
51H	Lower byte of Model ID (V-LINK message)
12H	Command ID (DT1)
aaH	Upper byte of address
bbH	Address
ccH	Address
ddH	Data : Actual Data. If multiple, transmitted with address order.
...	
eeH	Data
sumH	Checksum
F7H	EOX (End of Exclusive)

Parameter Address Map

V-LINK (Model ID = 00H 51H)

System Preference Area

Address	Parameter Name	Sys.Ex. Value	Meaning of Value
10H 00H 00H	V-LINK ON/OFF	00H - 01H	OFF, ON
10H 00H 01H	Clip Ctrl Rx MIDI Ch.	00H	CH.1
10H 00H 02H	Color Ctrl Rx MIDI Ch.	-	-
10H 00H 03H	Note Message Enabled	-	-
10H 00H 04H	Fast Control Enabled	-	-
10H 00H 05H	MMC Control Mode	-	-
10H 00H 06H	MTC Control Mode	-	-
10H 00H 07H	Auto Mix Mode	01H	ON

Video System Performance Area

Address	Parameter Name	Sys.Ex. Value	Meaning of Value
20H 00H 00H	V-LINK Number of Video Mixer Inputs	0EH	14CH.

Audio Mixer Parameter Area

Address	Parameter Name	Sys.Ex. Value	Meaning of Value
20H 20H 00H	V-LINK Audio Mixer Master Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 00H	V-LINK Audio Mixer Channel 1 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 02H	V-LINK Audio Mixer Channel 2 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 04H	V-LINK Audio Mixer Channel 3 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 06H	V-LINK Audio Mixer Channel 4 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 08H	V-LINK Audio Mixer Channel 5 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 0AH	V-LINK Audio Mixer Channel 6 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 0CH	V-LINK Audio Mixer Channel 7 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 0EH	V-LINK Audio Mixer Channel 8 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 10H	V-LINK Audio Mixer Channel 9 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 12H	V-LINK Audio Mixer Channel 10 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 14H	V-LINK Audio Mixer Channel 11 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 16H	V-LINK Audio Mixer Channel 12 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 18H	V-LINK Audio Mixer Channel 13 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %
20H 21H 1AH	V-LINK Audio Mixer Channel 14 Level	00H 00H - 07H 68H	Level 0.0 - 100.0 %

Messages Received in V-LINK Slave Mode

* The V-1600HD receives these messages while MIDI Master Switch in SYSTEM menu is turned ON.
* The V-1600HD ignores these messages while V-LINK Master in SYSTEM menu is turned ON.

Note On

Status	2nd Byte	3rd Byte
9nH	kkH	vvH

kk=Note Number : 00H - 7FH (0 - 127)

vv=Velocity : ignored

* Valid when Note Message Enabled is [49Key] or [Assignable].
* The Dissolve Time automatically changes when Auto Mix Mode is tuned to ON.

Control Change

Status	2nd Byte	3rd Byte
BnH	ccH	vvH

cc=Controller Number : 00H -7FH (0 - 127)

vv=Value : 00H - 7FH (0 - 127)

Channel Pressure/After Touch

Status	2nd Byte
DnH	vvH

vv= Value :00H - 7FH (0 - 127)

Pitch Bend Change

Status	2nd Byte	3rd Byte
EnH	llH	mmH

ll=ignored

mm=Value : 00H - 7FH (0 - 127)

Program Change

Status	2nd Byte
CnH	ppH

pp=PST Cross Point Number : 00H -0DH (CH1 - CH14)

* The value automatically changes when Auto Mix Mode is tuned to ON.

Reset All Controllers

Returns to default status of V-LINK.

Status	2nd Byte	3rd Byte
BnH	79H	00H

System Exclusive Message

Status	Data Bytes	Status
F0H	iiH,ddH,...,eeH	F7H

F0:System Exclusive Message Status

ii=ID Number : This is the manufacturer's ID to identify the manufacturer of the product. Roland's manufacturer ID is 41H. The ID number of 7EH and 7FH can be used as universal non real-time message (7EH) or universal real-time message (7FH) for expansion of MIDI standards.

dd,...,ee= data : 00H - 7FH (0 - 127)

F7H:EOX (end of Exclusive)

Data Set 1 (DT1)

The message to transmit actual data. This should be used when you set data to the product.

Status	Data Byte	Status
F0H	41H,dev,00H,51H, 12H,aaH,bbH,ccH, ddH,...,eeH,sum	F7H

Byte	**Explanation**
F0H	Exclusive Status
41H	ID Number (Roland)
dev	Device ID(dev : 10H -1FH, 10H by default)
00H	Upper byte of model ID (V-LINK messageÅj
51H	Lower byte of model ID (V-LINK messageÅj
12H	Command ID (DT1)
aaH	Upper byte of address
bbH	Address
ccH	Address
ddH	Data : Actual Data. If multiple, transmitted with address order.
...	
eeH	Data
sumH	Checksum
F7H	EOX (End of Exclusive)

* If the data size exceeds 256 bytes, it should be divided to multiple packets smaller than 256 bytes.
* If you send multiple [Data Set 1] messages sequentially, include intervals of 20ms or longer.

Parameter Address Map

V-LINK (Model ID = 00H 51H)

System Preference Area

Address	Parameter Name	Sys.Ex. Value	Meaning of Value
10H 00H 00H	V-LINK ON/OFF	00H - 01H	OFF, ON
10H 00H 01H	Ctrl Rx MIDI Ch. (Clip & Color)	00H - 10H	CH.1 - CH.16, OFF
10H 00H 02H	-	-	-
10H 00H 03H	Note Message Enabled	00H - 02H	OFF, 49 Keys, Assignable
10H 00H 04H	Fast Control Enabled	-	-
10H 00H 05H	MMC Control Mode	-	-
10H 00H 06H	MTC Control Mode	-	-
10H 00H 07H	Auto Mix Mode	00H - 01H	OFF, ON

* Underlined value is the default

Clip Control Assignment Area

Address	Parameter Name	Sys.Ex. Value	Meaning of Value
10H 10H 00H	Playback Speed Control Assign	-	-
10H 10H 02H	Dissolve Time Control Assign	01H-05H, 07H-1FH, 40H-5FH, DOH, EOH, FFH	Transition Time: Control Change, Channel Press, Pitch Bend, OFF
10H 10H 04H	Audio Level Control Assign	-	-
10H 10H 06H	T-Bar Control Assign	01H-05H, 07H-1FH, 40H-5FH,DOH, EOH, FFH	Video Fader: Control Change, Channel Press, Pitch Bend, OFF
10H 10H 08H	Dual Stream Control Assign	-	-
10H 10H 0AH	Time Trip Control X Assign	-	-
10H 10H 0CH	Time Trip Control Y Assign	-	-
10H 10H 0EH	Reserved	-	-
10H 10H 10H	Transition Select Control Assign	01H-05H, 07H-1FH, 40H-5FH,DOH, EOH, FFH	Transition Type: Control Change, Channel Press, Pitch Bend, OFF
10H 10H 12H	Transformer Control A Assign	-	-
10H 10H 14H	Transformer Control B Assign	-	-
10H 10H 16H	BPM Sync Control Assign	-	-

* Underlined value is the default

Color Control Assignment Area

Address	Parameter Name	Sys.Ex. Value	Meaning of Value
10H 20H 00H	Color Cb Control Assign	-	-
10H 20H 02H	Color Cr Control Assign	-	-
10H 20H 04H	Brightness Control Assign	-	-
10H 20H 06H	VFX 1A Control Assign	-	-
10H 20H 08H	VFX 2A Control Assign	-	-
10H 20H 0AH	VFX 3A Control Assign	-	-
10H 20H 0CH	VFX 4A Control Assign	-	-
10H 20H 0EH	Reserved	-	-
10H 20H 10H	Reservec	-	-
10H 20H 12H	Reserved	-	-
10H 20H 14H	Reserved	-	-
10H 20H 16H	VFX 1B Control Assign	-	-
10H 20H 18H	VFX 2B Control Assign	-	-
10H 20H 1AH	VFX 3B Control Assign	-	-
10H 20H 1CH	VFX 4B Control Assign	-	-
10H 20H 1EH	Reserved	-	-
10H 20H 20H	Output Fade Control Assign	01H-05H, 07H-1FH, 40H-5FH,DOH, EOH, FFH	Output Fade: Control Change, Channel Press, Pitch Bend, OFF

* Underlined value is the default

Clip Control Preference Area

Address	Parameter Name	Sys.Ex. Value	Meaning of Value
10H 30H 00H	Velocity Curve Type	-	-
10H 30H 01H	Playback Speed Control Range	-	-
10H 30H 02H	Assignable Note Mode Keyboard Range Lower	00H -(24H)- 7FH	Note Number
10H 30H 03H	Assignable Note Mode Keyboard Range Upper	00H -(31H)- 7FH	Note Number

* Underlined value is the default

Appendices

Decimal and hexadecimal conversion table

* The "H" follows the numbers in hexadecimal notation.

MIDI uses hexadecimal notation in 7-bit units to indicate data values, addresses and sizes within an exclusive message. Decimal and hexadecimal numbers corresponds as follows.

Deci	Hexa	Deci	Hexa	Deci	Hexa	Deci	Hexa
0	00H	32	20H	64	40H	96	60H
1	01H	33	21H	65	41H	97	61H
2	02H	34	22H	66	42H	98	62H
3	03H	35	23H	67	43H	99	63H
4	04H	36	24H	68	44H	100	64H
5	05H	37	25H	69	45H	101	65H
6	06H	38	26H	70	46H	102	66H
7	07H	39	27H	71	47H	103	67H
8	08H	40	28H	72	48H	104	68H
9	09H	41	29H	73	49H	105	69H
10	0AH	42	2AH	74	4AH	106	6AH
11	0BH	43	2BH	75	4BH	107	6BH
12	0CH	44	2CH	76	4CH	108	6CH
13	0DH	45	2DH	77	4DH	109	6DH
14	0EH	46	2EH	78	4EH	110	6EH
15	0FH	47	2FH	79	4FH	111	6FH
16	10H	48	30H	80	50H	112	70H
17	11H	49	31H	81	51H	113	71H
18	12H	50	32H	82	52H	114	72H
19	13H	51	33H	83	53H	115	73H
20	14H	52	34H	84	54H	116	74H
21	15H	53	35H	85	55H	117	75H
22	16H	54	36H	86	56H	118	76H
23	17H	55	37H	87	57H	119	77H
24	18H	56	38H	88	58H	120	78H
25	19H	57	39H	89	59H	121	79H
26	1AH	58	3AH	90	5AH	122	7AH
27	1BH	59	3BH	91	5BH	123	7BH
28	1CH	60	3CH	92	5CH	124	7CH
29	1DH	61	3DH	93	5DH	125	7DH
30	1EH	62	3EH	94	5EH	126	7EH
31	1FH	63	3FH	95	5FH	127	7FH

* Decimal expressions used for MIDI channels, bank select, program change and device ID are 1 greater than the decimal value shown on above table.

Exclusive message and checksum calculation

Roland exclusive messages (RQ1, DT1) contain a checksum following the data (after F7), which can be used to check whether the message was received correctly. The checksum value is derived from the address and data (or size) of the transmitted exclusive message.

Calculating the checksum

* "H" is appended to hexadecimal numbers.

The checksum is a value that produces a lower 7 bits of zero when the address, size, and checksum itself are summed. If the exclusive message to be transmitted has an address of aaH bbH ccH and the data is ddH eeH, the actual calculation would be as follows:

aa + bb + cc + dd + ee = sum

sum / 128 = quotient o o o remainder

128 - remainder = checksum

V-1600HD Command Reference

You can remotely control the V-1600HD from an external device using the RS-422 connector.

Overview of Commands

A command consists of an ASCII code sequence containing "stx," three uppercase letters of, and a semicolon (";"). The three letters indicate the command type.

If the command has an argument, a colon (":") is inserted between the command letters and the argument. When multiple arguments occur, they are separated by commas (",").

"stx"

This is the ASCII code signal name (code number 02H [hexadecimal]) and code that signals the command start.

Your device's stx command may not be the ASCII letters "stx" or "02H". Refer to your RS-232C controller's manual to send proper command.

":"

This is the code to separate the command and its argument.

";"

This is the code to make V-1600HD recognize the end of a command.

* The codes of stx(02H) & ACK(06H) or Xon(11H) / Xoff(13H) are the control codes.
* If the external device sends multiple commands to the V-1600HD sequentially, it must wait for ACK to be returned before sending the next command.
* Tally control via RS-422 conforms to TSL Protocol V3.1.

Commands Transmitted from External Device

PGM

stxPGM:a;

a:PGM Channel Number 0(CH 1) - 13(CH 14)

Select PGM Channel.

Returns ACK when the command is properly received.

PST

stxPST:a;

a:PST Channel Number 0(CH 1) - 13(CH 14)

Select PST Channel.

Returns ACK when the command is properly received.

DSK

stxDSK:a;

a:Channel Number 0(CH 1) - 13(CH 14)

Select DSK Source Channel

Returns ACK when the command is properly received.

TIM

stxTIM:a;

a:Time (100ms)(0 - 100)

Set Transition Time

Returns ACK when the command is properly received.

TAK

stxTAK:a;

a:Layer (0:PGM/PST / 1:DSK)

Start TAKE operation

Returns ACK when the command is properly received.

TRS

stxTRS:a;
"a:WIPE PATTERN selection (0:WIPE 1, 1:WIPE 2, 2:WIPE 3, 3:WIPE 4, 4:FAM, 5:NAM, 6:CUT, 7:MIX)"
Select Transition Type (Wipe Pattern)
Returns ACK when the command is properly received.

PIP

stxPIP;
Press PinP [ON] button
Returns ACK when the command is properly received.

KEY

stxKEY;
Press KEY [ON] button
Returns ACK when the command is properly received.

FDE

stxFDE:a;
a:Time (100ms)(0 - 100)
Start Output Fade
Returns ACK when the command is properly received.

MEM

stxMEM:a;
a:Memory Number (0(1-1) - 64(8-8))
Load MEMORY
Returns ACK when the command is properly received.

VER

stxVER;
Returns version number

ACS

stxACS;
Check status of the V-1600HD
Returns ACK while the V-1600HD is not operating.

XON

Flow Control

XOFF

Flow Control

Commands Transmitted from V-1600HD

ACK

Returns this when the transmitted command is properly received.

ERR

stxERR:a;

a:

0 (syntax error)

The command received contains error.

5 (out of range error)

The command received is out of range.

VER

stxVER: V-1600HD, a;

a:version

Transmits this when the unit receives VER command.

* Version information is ASCII text string.

XON

Flow Control

XOFF

Flow Control

TSL Protocol V3.1

1st Byte 80H + Channel

2nd Byte 30H (OFF) / 31H (GREEN) / 32H (RED) / 33H (GREEN+RED)

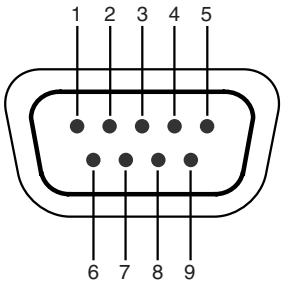
3rd to 18th Byte 20H

* Brightness is Full Brightness

* Display Data is space

Specifications of RS-422 Connector

- Conforms to RS-422A standards
- Transmission format : Start-stop synchronization (asynchronous), full duplex
- Transmission Rate : 38400 bps
- Parity : odd number/even number/none
- Data Length : 8 bits
- Stop Bit Length : 1 bit
- Encoding : ASCII
- Flow Control : XON/XOFF



Pin No.	Signal
1	GND
2	TxD-
3	RxD+
4	GND
5	NC
6	GND
7	TxD+
8	RxD-
9	GND