

RS232C/LAN command list

MODEL : Ultra Narrow Bezel LCD Display TH-55VF1H

2016/10/20
Panasonic Corporation

Note :

Serial connection or LAN connection is established between the control unit and the display.

You can use the commands in the table below for either connection type.

Please refer to "Protocol" for each command format.

TYPE	Function	Control Command		Inquiry Command			Range and kind of parameter Call-back	Explanation
		Transmission Command[:Parameters]	Standby	Transmission Command[:Parameters]	Reply Command[:Parameters]	Standby		
Basic Control	Power ON	PON	Avail					
	Power OFF	POF	-					
	Power Status			QPW	QPW:*	Avail	0 / 1	0:Standby (Off) / 1:Power ON (On)
	Input Change	IMS (:***)	Not avail	QMI	QMI:***	Avail	Control:(Toggle) HM1/DP1/DL1/DV1/DV2/PC1/YP1/VD1/UD1 Inquiry: HM1/DP1/DL1/DV1/DV2/PC1/YP1/VD1/UD1	HM1 : HDMI DP1 : DisplayPort DL1 : DIGITAL LINK DV1 : DVI-D1 DV2 : DVI-D2 PC1 : PC YP1 : COMPONENT (RGB) VD1 : VIDEO UD1 : USB Display
	DIGITAL LINK YFB Digital Link Input select for YFB Series	IMS:DL1***	Not avail	QMI:DL1	QMI:DL1***	Avail	Control: HD1/HD2/PC1/PC2/SVD/VID (YFB100) HD1 /HD2 /PC1 /PC2 /VID (YFB200) Inquiry: HD1/HD2/PC1/PC2/SVD/VID (YFB100) HD1 /HD2 /PC1 /PC2 /VID (YFB200)	Available when YFB100/YFB200 is connected. HD1 : HDMI1 HD2 : HDMI2 PC1 : COMPUTER 1 PC2 : COMPUTER 2 SVD : S-VIDEO (※ YFB100 only) VID : VIDEO
	Audio Volume	AVL:***	Not avail				000 - 100	Volume value : 0 ~ 100
	Audio Volume Up	AUU	Not avail					
	Audio Volume Down	AUD	Not avail					
	Current Audio Volume			QAV	QAV:***	Avail	000 - 100	Volume value : 0 ~ 100
	Audio Mute	AMT (:*)	Not avail	QAM	QAM: *	Avail	Control:(Toggle) 0 / 1	Toggle 0:(Audio mute Off) / 1:(Audio mute On)
	Video Mute	VMT (:*)	Not avail	QVM	QVM: *	Avail	Control:(Toggle) 0 / 1	Toggle 0:(Video mute Off) / 1:(Video mute On)
	Aspect Change	DAM:****	Not avail	QAS	QAS:****	Not avail	FULL / NORM / ZOOM / ZOM2	FULL / NORMAL / ZOOM1 / ZOOM2
	Picture Adjustment	Picture Mode	VPC:MEN***	Not avail	QPC: MEN	QPC: MEN***		VIV : VIVID SIGNAGE NAT : NATURAL SIGNAGE STD : STANDARD SUV : SURVEILLANCE GRH : GRAPHIC DCM : DICOM
		Backlight	VPC:BLT***	Not avail	QPC:BLT	QPC:BLT***	Avail	000 - 100 DEF	0 ~ 100 DEF:SET SHIPPING VALUE Available when Long life mode is Off.
	Picture (Contrast)	VPC:PIC***	Not avail	QPC:PIC	QPC:PIC***	Avail	000 - 100 DEF	0 ~ 100 DEF:SET SHIPPING VALUE
	Black Level (Brightness)	VPC:BLK***	Not avail	QPC:BLK	QPC:BLK***	Avail	000 - 100 DEF	0 ~ 100 DEF:SET SHIPPING VALUE
	Sharpness	VPC:SHP***	Not avail	QPC:SHP	QPC:SHP***	Avail	000 - 100 DEF	0 ~ 100 DEF:SET SHIPPING VALUE
	Color	VPC:COL***	Not avail	QPC:COL	QPC:COL***	Avail	000 - 100 DEF	0 ~ 100 DEF:SET SHIPPING VALUE

TYPE	Function	Control Command		Inquiry Command		Range and kind of parameter Call-back	Explanation			
		Transmission Command[:Parameters]	Standby	Transmission Command[:Parameters]	Reply Command[:Parameters]			Standby		
P i c t u r e	Picture Adjustment	Tint	VPC:TIN***	Not avail	QPC:TIN	QPC:TIN***	Not avail	000 ~ 100 DEF	0 ~ 100 DEF:SET SHIPPING VALUE	
		Enhance level	VPC:SHE*	Not avail	QPC:SHE	QPC:SHE*	Not avail	1 / 2	1: low 2: high	
		Color Temperature	VPC:TMP***	Not avail	QPC:TMP	QPC:TMP***	Not avail	032 / 040 / 050 / 065 / 075 / 093 / 107 / NTV / U01 / U02	3200K ~ 10700K / Native / USER1 / USER2	
		Red Gain	VWB:RGN****	Not avail	QWB:RGN	QWB:RGN****	Not avail	0000 ~ 0255	0 ~ 255 Available when Color Temperature is USER1 or USER2.	
		Green Gain	VWB:GGN****	Not avail	QWB:GGN	QWB:GGN****	Not avail	0000 ~ 0255	0 ~ 255 Available when Color Temperature is USER1 or USER2.	
		Blue Gain	VWB:BGN****	Not avail	QWB:BGN	QWB:BGN****	Not avail	0000 ~ 0255	0 ~ 255 Available when Color Temperature is USER1 or USER2.	
		Red Bias	VWB:RBS****	Not avail	QWB:RBS	QWB:RBS****	Not avail	-127 ~ 0000 ~ 0128	0 ~ 255 Available when Color Temperature is USER1 or USER2.	
		Green Bias	VWB:GBS****	Not avail	QWB:GBS	QWB:GBS****	Not avail	-127 ~ 0000 ~ 0128	0 ~ 255 Available when Color Temperature is USER1 or USER2.	
		Blue Bias	VWB:BBS****	Not avail	QWB:BBS	QWB:BBS****	Not avail	-127 ~ 0000 ~ 0128	0 ~ 255 Available when Color Temperature is USER1 or USER2.	
		Gamma	VWB:GMM**	Not avail	QWB:GMM	QWB:GMM**	Not avail	20 / 22 / 24 / 26 / DC	2.0 / 2.2 / 2.4 / 2.6 / DICOM Not avail : when Color Temperature is NTV(Native) DC : Inquiry only , when Picture Mode is DCM(DICOM).	
		Dynamic Contrast	VPC:DCO**	Not avail	QPC:DCO	QPC:DCO**	Not avail	00 ~ 10	0 ~ 10	
		Color Enhancement	VPC:PAJ*	Not avail	QPC:PAJ	QPC:PAJ*	Not avail	0 / 1	OFF / Low / Mid / High	
		Refine enhancer	VPC:SRC*	Not avail	QPC:SRC	QPC:SRC*	Not avail	0 / 1 / 2 / 3	OFF / Low / Mid / High	
		Gradation smoother	VPC:GRS*	Not avail	QPC:GRS	QPC:GRS*	Not avail	0 / 1	0 : off / 1 : on	
M e m o r y f u n c t i o n	Memory function	Memory delete	VPF:DEL**	Not avail				01 ~ 08	Memory No.1 - Memory No.8	
		Memory load	VPF:LOD**	Not avail					01 ~ 08	Memory No.1 - Memory No.8
		Memory name change	VPF:NAM** *...*	Not avail	QPF:NAM**	QPF:NAM** *...*	Not avail	01 ~ 08 space ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~	Memory No.1 - Memory No.8 Memory name(Max 20 Parameters)	
		Memory save	VPF:SAV** *...*	Not avail					01 ~ 08 space ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~	Memory No.1 - Memory No.8 Memory name(Max 20 Parameters)
		Memory state			QPF:STA	QPF:STA*****	Not avail		-/0 (Memory No.1- No.08)	Unused/Use
S o u n d	Sound Adjustment	Output Select	AAC:OUT***	Not avail	QAC:OUT	QAC:OUT***	Not avail	SPO / LNO	SPEAKER-OUT / LINE-OUT	
		Sound Mode	AAC:MEN***	Not avail	QAC:MEN	QAC:MEN***	Not avail	STD (AUT) / DYN / CLR	STANDARD / DYNAMIC / CLEAR Available when Output Select is SPEAKER-OUT.	
		Bass	AAC:BAS***	Not avail	QAC:BAS	QAC:BAS***	Not avail	-20 ~ 000 ~ +20(020)	Available when Output Select is SPEAKER-OUT.	
		Treble	AAC:TRE***	Not avail	QAC:TRE	QAC:TRE***	Not avail	-20 ~ 000 ~ +20(020)	Available when Output Select is SPEAKER-OUT.	
		Balance	AAC:BAL***	Not avail	QAC:BAL	QAC:BAL***	Not avail	-20 ~ 000 ~ +20(020)	Available when Output Select is SPEAKER-OUT.	
		Surround	AAC:SUR***	Not avail	QAC:SUR	QAC:SUR***	Not avail	MON / OFF	ON / OFF Available when Output Select is SPEAKER-OUT.	
P o s i t i o n	Position/Size Adjustment	Horizontal Position	DGE:HPO****	Not avail	QGE:HPO	QGE:HPO****	Not avail	-100 ~ 0000 ~ +100(0100)	H-Pos : -100 - 0000 - +100(0100)	
		Horizontal Size	DGE:HSZ****	Not avail	QGE:HSZ	QGE:HSZ****	Not avail	-100 ~ 0000 ~ +100(0100)	H-Size : -100 - 0000 - +100(0100)	
		Vertical Position	DGE:VPO****	Not avail	QGE:VPO	QGE:VPO****	Not avail	-100 ~ 0000 ~ +100(0100)	V-Pos : -100 - 0000 - +100(0100)	
		Vertical Size	DGE:VSZ****	Not avail	QGE:VSZ	QGE:VSZ****	Not avail	-100 ~ 0000 ~ +100(0100)	V-Size : -100 - 0000 - +100(0100)	
		Clock Phase	DGE:CLK***	Not avail	QGE:CLK	QGE:CLK***	Not avail	00 ~ 30	0 ~ 30	
		Dot Clock	DGE:DCL***	Not avail	QGE:DCL	QGE:DCL***	Not avail	-5 ~ 00 ~ +5(05)	-5 ~ 5	
		1:1 Pixel Mode	DGE:DBD*	Not avail	QGE:DBD	QGE:DBD*	Not avail	0 / 1	0:OFF / 1:ON	
		Overscan	DGE:OVS*	Not avail	QGE:OVS	QGE:OVS*	Not avail	0 / 1	0:OFF / 1:ON	
		Pos./Size Lump Setting	DGE:PSZ**** **** **** ****	Not avail	QGE:PSZ	QGE:PSZ**** **** **** ****	Not avail	-100 ~ 0000 ~ +100(0100), -100 ~ 0000 ~ +100(0100), -100 ~ 0000 ~ +100(0100), -100 ~ 0000 ~ +100(0100)	H-Pos : -100 - 0000 - +100(0100) H-Size : -100 - 0000 - +100(0100) V-Pos : -100 - 0000 - +100(0100) V-Size : -100 - 0000 - +100(0100)	
		Auto Setup	DGE:ASU *	Not avail	QGE:ASU	QGE:ASU **	Not avail	Control: 1 Inquiry: OK / NG / OF / NW	Control: 1:Execution start Inquiry: OK / NG / OF(Un-performing or when not effective) / NW(adjusting)	

TYPE	Function	Control Command		Inquiry Command			Range and kind of parameter Call-back	Explanation	
		Transmission Command[:Parameters]	Standby	Transmission Command[:Parameters]	Reply Command[:Parameters]	Standby			
SETUP	Network Settings	DIGITAL LINK STATUS		QSU:DLS	QSU:DLS* * --** --**		0 / 1 / 2 / 3 0 / 1 / 2 -00 ~ -99 -00 ~ -99	No connect / Digital Link / LPM / Ethernet No HDMI / HDMI (No HDCP) / HDMI (HDCP) Minimum Signal Quality Maximum Signal Quality (Example) QSU:DLS%1%2-%3%4-%5%6 %1: Link Status %2:HDMI Signal Status (correspond to HDMI Status) %3%4:Signal Quality MIN (00-99) %5%6:Signal Quality MAX (00-99)	
		AMX D.D.	SSU:ADD*	Not avail	QSU:ADD	QSU:ADD*	Not avail	0 / 1	OFF / ON
		Crestron ConnectedTM	SSU:CRV*	Not avail	QSU:CRV	QSU:CRV*	Not avail	0 / 1	OFF / ON
		Extron XTP	SSU:EXP*	Not avail	QSU:EXP	QSU:EXP*	Not avail	0 / 1	OFF / ON
		USB memory network settings	SSU:UNS*	Not avail	QSU:UNS	QSU:UNS*	Not avail	0 / 1	Prohibit / Permit
		Reset	SSU:LRT	Not avail					
SETUP	Display ID Setup	Multi control auto setting(DIGITAL LINK)	SID:MAS*** + *	Not avail	QID:MAS	QID:MAS*** +	Not avail	(000).001~100,AUT 0 / 1 0 / 1	Display ID 000~100 : DisplayID (000 is the only Inquiry Command.) AUT : Auto (AUT is the only Control Command.) + : Changing Network Control Control 0 : No (Maintains the settings.) 1 : Yes (Switches[Network control] to [On] when it is set to [Off], and switches [DHCP] to [On]) Reply 0 : [Network control] is [Off] 1 : [Network control] is [On] * : Changing Serial/IR terminal (Control command only) 0 : No 1 : Yes * Only when sending the control command to the top display that daisy chain by DIGITAL LINK. Regardless of the Onscreen display setting, the OSD is displayed. Next command is available after the OSD is cleared and further 1 second has elapsed.
		Display ID Auto Setup	SID:SID*	Not avail	QID:SID	QID:SID*	Not avail	0 / 1	OFF / ON
		Serial ID Setup (Serial ID Function and Display ID)	SIF:* ***	Not avail	QIF	QIF:* ***	Not avail	0 / 1 000 ~ 100	OFF / ON Display ID
		IDDisplay ID			QID: DID	QID: DID***	Not avail	000 ~ 100	Display ID
		Control settings	IR Control(setting)	SCT:IRC***	Not avail	QCT:IRC	QCT:IRC***	Not avail	AUT / B11 / DL1	Auto / Built in / DIGITAL LINK
		IR Control(actual operation)			QCT:IRA	QCT:IRA***	Not avail	IR1 / B11 / DL1	IR IN / Built-in / DIGITAL LINK
		IR Out	SCT:IRO***	Not avail	QCT:IRO	QCT:IRO***	Not avail	IR1 / DL1	IR-out / DIGITAL LINK
		Serial Control	SCT:SEC***	Not avail	QCT:SEC	QCT:SEC***	Not avail	SE1 / DL1	Serial in / DIGITAL LINK
		Serial Out	SCT:SEO***	Not avail	QCT:SEO	QCT:SEO***	Not avail	SE1 / DL1	Serial out / DIGITAL LINK
		Serial Response(Normal)	SCT:RIN*	Not avail	QCT:RIN	QCT:RIN*	Not avail	0 / 1	OFF / ON
		Serial Response(ID ALL)	SCT:RIA*	Not avail	QCT:RIA	QCT:RIA*	Not avail	0 / 1	OFF / ON
		Serial ID Group	SCT:SIG*	Not avail	QCT:SIG	QCT:SIG*	Not avail	A / B / C / D / E / F / G	A / B / C / D / E / F / G
		Serial Response(ID Group)	SCT:RIG*	Not avail	QCT:RIG	QCT:RIG*	Not avail	0 / 1	OFF / ON
		Serial Daisy Chain Position	SCT:DCP***	Not avail	QCT:DCP	QCT:DCP***	Not avail	TOP / DEF / END	TOP / --- / END
	Signal	3D Y/C Filter	SSG:YCS*	Not avail	QSG:YCS	QSG:YCS*	Not avail	0 / 1	OFF / ON
		Color System	SSG:COS ***	Not avail	QSG:COS	QSG:COS ***	Not avail	NTS / PAL / SCM / 4NT / MPA / NPA / AUT	NTSC / PAL / SECAM / NTSC4.43 / PAL-M / PAL-N / AUTO
		Sync Signal Setting	SSG:SNC ***	Not avail	QSG:SNC	QSG:SNC ***	Not avail	HAV / GRN / HVS	Only PC input Auto detection / Sync On Green / Hvsync

TYPE	Function	Control Command		Inquiry Command		Range and kind of parameter Call-back	Explanation	
		Transmission Command[:Parameters]	Standby	Transmission Command[:Parameters]	Reply Command[:Parameters]			Standby
Signal	Cinema Reality (3:2 Pull Down)	SSG:DCR*	Not avail	QSG:DCR	QSG:DCR*	Not avail	0 / 1	OFF / ON
	XGA Mode	SSG:XGA*	Not avail	QSG:XGA	QSG:XGA*	Not avail	1 / 2 / 3 / 4	1024x768 / 1280x768 / 1366x768 / Auto
	Noise Reduction	SSG:NRS***	Not avail	QSG:NRS	QSG:NRS***	Not avail	OFF / AUT / LOW / MID / HIGH	OFF / Auto / Low / Middle / High
	MPEG Noise Reduction	SSG:MNR***	Not avail	QSG:MNR	QSG:MNR***	Not avail	OFF / LOW / MID / HIGH	OFF / Low / Middle / High
	Signal Range	SSG:HRC***	Not avail	QSG:HRC	QSG:HRC***	Not avail	VID / FUL / AUT	Video / FULL / Auto DVI1/DVI2:"Auto" not avail
	Component/RGB-IN Select	SSU:CMP***	Not avail	QSU:CMP	QSU:CMP***	Not avail	YBR/RGB	YBR Signal / RGB Signal Available when PCI/YP1 is selected.
	YUV/RGB-IN Select	SSU:DYR***	Not avail	QSU:DYR	QSU:DYR***	Not avail	YUV/RGB	YUV Signal / RGB Signal Available when HDMI/DisplayPort/DIGITAL LINK/DVI1/DVI2 is selected.
	Input Level	VWB:ILV***	Not avail	QWB:ILV	QWB:ILV***	Not avail	-16 ~ 000 ~ +16(016)	-
	Multi dynamic backlight settings - Multi dynamic backlight	SMD:MDB*	Not avail	GMD:MDB	GMD:MDB*	Not avail	0 / 1	Auto / On
	Multi dynamic backlight settings - Input of linked "Child"	SMD:ILC***	Not avail	GMD:ILC	GMD:ILC***	Not avail	HM1 / DP1 / DL1 / DV1 / DV2	HM1 : HDMI DP1 : DisplayPort DL1 : DIGITAL LINK DV1 : DVI-D1 DV2 : DVI-D2
Multi dynamic backlight settings - Add "Child"	SMD:IPA *** *** *** ***	Not avail				000~255 000~255 000~255 000~255	*** : Target IP Address 1st BYTE *** : Target IP Address 2nd BYTE *** : Target IP Address 3rd BYTE *** : Target IP Address 4th BYTE Available when Multi dynamic backlight is On.	
Multi dynamic backlight settings - Delete all of "Child"	SMD:IPD	Not avail						
Color matching	Color matching function	SSU:CMG* * **** **** ****	Not avail	QSU:CMG*	QSU:CMG* * **** **** ****	Not avail	* : R/Y/G/C/B/M * : 0 / 1 (Test Pattern) **** :R 0000 ~ 2048 **** :G 0000 ~ 2048 **** :B 0000 ~ 2048	Red / Yellow / Green / Cyan / Blue / Magenta Off / On (Test Pattern) Please check the instruction manual about the range of each color.
	Color matching function reset	SSU:CGR	Not avail	-	-	Not avail		Restores each adjustment of all color selections to default.
Screensaver	Screensaver ON/OFF	OSP:SCR*	Not avail	QSP:SCR	QSP:SCR*	Not avail	0 / 5	0:(stop) / 5:(operating)
	Screensaver Mode	SSC:MOD*	Not avail	QSC:MOD	QSC:MOD*	Not avail	0 / 1 / 2 / 3 / 4	0:OFF / 1:Interval / 2:Time Designation / 3:ON / 4:Standby after Screensaver
	Interval Screensaver	SSC:INT**** ****	Not avail	QSC:INT	QSC:INT**** ****	Not avail	0000 ~ 2359 0000 ~ 2359	Periodic time Operating time
	Time Designation Screensaver	SSC:TIM**** ****	Not avail	QSC:TIM	QSC:TIM**** ****	Not avail	0000 ~ 2359 0000 ~ 2359	Start time Finish time
Standby after Screensaver	SSC:AOF****	Not avail	QSC:AOF	QSC:AOF****	Not avail	0000 ~ 2359	Time of operation(hour:minute)	
Input Label	Set Label for Current Input	SSU:TLA***	Not avail	QSU:TLA	QSU:TLA***	Not avail	INP / PCN / DV1 / DV2 / DV3 / BD1 / BD2 / BD3 / CTV / VCR / STB / SKP	reset input name(Except PC) / reset input name(for PC) DVD1 / DVD2 / DVD3 / Blu-ray1 / Blu-ray2 / Blu-ray3 / CATV / VCR / STB / (Skip) Available when Input is not USB.
	Set Label for EACH INPUT	SSU:TLA+*****	Not avail	QSU:TLA+++	QSU:TLA +++ ***	Not avail	+++ HM1 / DP1 / DL1 / DV1 / DV2 / PC1 / YP1 / VD1 *** INP / DV1 / DV2 / DV3 / BD1 / BD2 / BD3 / CTV / VCR / STB / SKP	INPUT HDMI / DisplayPort / DIGITAL LINK / DVI-D1 / DVI-D2 / PC / COMPONENT (RGB) / VIDEO (reset input name) / DVD1 / DVD2 / DVD3 / Blu-ray1 / Blu-ray2 / Blu-ray3 / CATV / VCR / STB / (Skip)
Power Management Settings	Power Management Mode	SSU:ECS*	Not avail	QSU:ECS	QSU:ECS*	Not avail	0 / 1	CUSTOM / ON
	No Signal Power Off	SSU:AOF*	Not avail	QSU:AOF	QSU:AOF*	Not avail	0 / 1	Disable / Enable
	HDMI Power Management	SSU:D1H*	Not avail	QSU:D1H	QSU:D1H*	Not avail	0 / 1	OFF / ON
	DIGITAL LINK Power Management	SSU:D1L*	Not avail	QSU:D1L	QSU:D1L*	Not avail	0 / 1	OFF / ON
	DVI-D1 Power Management	SSU:D1V*	Not avail	QSU:D1V	QSU:D1V*	Not avail	0 / 1	OFF / ON
	DVI-D2 Power Management	SSU:D2V*	Not avail	QSU:D2V	QSU:D2V*	Not avail	0 / 1	OFF / ON
	PC Power Management	SSU:DPM*	Not avail	QSU:DPM	QSU:DPM*	Not avail	0 / 1	OFF / ON
Extended standby mode	SSU:ESM*	Not avail	QSU:ESM	QSU:ESM*	Not avail	0 / 1	OFF / ON	

TYPE	Function	Control Command		Inquiry Command		Range and kind of parameter Call-back	Explanation	
		Transmission Command[:Parameters]	Standby	Transmission Command[:Parameters]	Reply Command[:Parameters]			Standby
Function Button Settings	Function Group	OSP:KGR***	Not avail	OSP:KGR	OSP:KGR***	Not avail	INP / MEM / ACT	INPUT / MEMORY / ACTION & MENU (SHORTCUT)
	Function Button Settings	OSP:KFN* ***	Not avail	OSP:KFN*	OSP:KFN* ***	Not avail	1 - 9 , 0 (ACTION & MENU) SIG / SSV / SUT / ECO / LNS / OSH / MLT / DZM / DID (INPUT) HM1 / DP1 / DL1 / DV1 / DV2 / PC1 / YP1 / VD1 / UD1	setup to FUNCTION KEY 1 - setup to FUNCTION KEY 9, setup to FUNCTION KEY 0 (ACTION & MENU) Signal menu / Screensaver menu / Timer setup menu / Power management mode menu / Network settings menu / AV Mute / Multi Display menu / Digital Zoom / Display ID & Display Name (INPUT) HDMI / DisplayPort / DIGITAL LINK / DVI-D1 / DVI-D2 / PC / COMPONENT (RGB) / VIDEO / USB
Startup image settings	Display setting	SCI:SIM*	Not avail	QCI:SIM	QCI:SIM*	Not avail	0 / 1	OFF / ON
	Image select	SCI:SCG*	Not avail	QCI:SCG	QCI:SCG*	Not avail	0 / 1	0 : Default image 1 : User image
Multi Display Setup	Multi Display ON/OFF	MDC:*	Not avail	QDC:EXP	QDC:EXP*	Not avail	0 / 1	OFF / ON
	Multi Display Setup (Detail)	MDC:EXP* ** ** *** *** ***	Not avail	QDC:EXP	QDC:EXP* ** ** *** *** ***	Not avail	0 / 1, 01 ~ 10, 01 ~ 10, 000 ~ 100, 000 ~ 100, 001 ~ 010 ~ 011 ~ 090 ~ 091 ~ 100	OFF / ON, Horizontal Scale 1 ~ 10, Vertical Scale 1 ~ 10, Bezel H Adjustment 0 ~ 100 Bezel V Adjustment 0 ~ 100 Location A1 ~ A10 ~ B1 ~ I10 ~ J1 ~ J10
	Frame control	MDC:FCT*	Not avail	QDC:FCT	QDC:FCT*	Not avail	0 / 1 / 2 / 3 / 4 / 5	Auto / 1 / 2 / 3 / 4 / 5
Timer Setup	Reverse scan	MDC:RVS*	Not avail	QDC:RVS	QDC:RVS*	Not avail	0 / 1	OFF/ON
		TIM:PRG** * *** *** **** ***	Not avail	QIM:PRG**	QIM:PRG** * *** *** ***	Not avail	01 ~ 20, 0 / 1, SUN / MON / TUE / WED / THU / FRI / SAT / EVD, PON / POF, 0000 2359, HM1/DP1/DL1/DV1/DV2/PC1/YP1/VD1/UD1	Program number1 ~ 20, 0:OFF / 1:ON, Inquiry Command reply. A lower parameter is not given when the upper setup is "OFF." (a day of the week):Sunday / Monday / Tuesday / Wednesday / Thursday / Friday / Saturday / Everyday (Action type)PON:ON / POF:OFF, Time (hour, minute) (start-up input) HDMI / DisplayPort / DIGITAL LINK / DVI-D1 / DVI-D2 / PC / COMPONENT (RGB) / VIDEO / USB
Date and time	Present Day			QIM:DAY	QIM:DAY***	Not avail	SUN / MON / TUE / WED / THU / FRI / SAT	(a day of the week): Sunday / Monday / Tuesday / Wednesday / Thursday / Friday / Saturday
	Present Time			QIM:NOW	QIM:NOW****	Not avail	0000 ~ 2359	Present time (hour:minute)
	Date and time	TIM:DAT**** ** ** ** **	Not avail	QIM:DAT	QIM:DAT**** ** ** ** **	Not avail	YYYY : 2015 ~ 2099 MM : 01 ~ 12 DD : 01 ~ 31 hh : 00 ~ 23 mm : 00 ~ 59	(Year) (Month) (Day) (Hour) (Minute) format is "YYYYMMDDhhmm"
Input search	Input search	ISH:FNC***	Not avail	QSH:FNC	QSH:FNC***	Not avail	OFF / ALL / PRI / IDC	OFF / ALL inputs / Custom / Input detection
	1st search input	ISH:PRI***	Not avail	QSH:PRI	QSH:PRI***	Not avail	NON / HM1 / DP1 / DL1 / DV1 / DV2 / PC1 / YP1 / VD1 / UD1	(None) / HDMI / DisplayPort / DIGITAL LINK / DVI-D1 / DVI-D2 / PC / COMPONENT (RGB) / VIDEO / USB
	2nd search input	ISH:SCI***	Not avail	QSH:SCI	QSH:SCI***	Not avail	***:HM1 / DL1 / DV1 / DV2 / PC1 +:0 / 1	HDMI / DIGITAL LINK / DVI-D1 / DVI-D2 / PC OFF / ON
	Detect input	ISH:DIN*** +	Not avail	QSH:DIN***	QSH:DIN****	Not avail		
	Changing delay	ISH:CGD**	Not avail	QSH:CGD	QSH:CGD**	Not avail	00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10	00 : OFF 01~10 : changing time(sec)
Failover / Failback (Backup Input Setup)	Input Change Mode Off	SBI:OFF (NON NON *)	Not avail	QBI	QBI:OFF NON NON *	Not avail	0 / 1	0: Disable / 1 : Enable (Auto switch back mode)
	Input Change Mode Quick	SBI:QIC (*** *** ***)	Not avail	QBI	QBI:QIC *** *** ***)	Not avail	NON /HM1/DL1/DV1/DV2 NON /HM1/DL1/DV1/DV2 0 / 1	(Primary backup input) (Secondary backup input) 0: Disable / 1 : Enable (Auto switch back mode)
	Input Change Mode Normal	SBI:NOR (*** *** ***)	Not avail	QBI	QBI:NOR *** *** ***)	Not avail	NON /HM1/DL1/DV1/DV2/PC1/YP1/VD1/UD1 NON /HM1/DL1/DV1/DV2/PC1/YP1/VD1/UD1 0 / 1	(Primary backup input) (Secondary backup input) 0: Disable / 1 : Enable (Auto switch back mode)

S E T U P

TYPE	Function	Control Command		Inquiry Command		Range and kind of parameter Call-back	Explanation			
		Transmission Command[:Parameters]	Standby	Transmission Command[:Parameters]	Reply Command[:Parameters]			Standby		
S E T U P	Failover / Failback (Backup Input Setup)	Changing mode	SBI:CHM*	Not avail	QBI:CHM	QBI:CHM*	Not avail	2 / 1 High speed / Normal speed When [Quick] is selected, [Changing mode] can be adjusted.		
		Backup Input Status			QBI:STS	QBI:STS * *** *	Not avail	0 / 1 HM1/DL1/DV1/DV2/PC1/YP1/VD1/UD1 0 / 1 / 2 0: inactive / 1: active (Status) Main Input 0: Main Input / 1: Primary Backup input / 2: Secondary Backup input (Current Input Status)		
		Backup Input Signal Status			QBI:SIG	QBI:SIG * * *	Not avail	0 / 1 0 / 1 0 / 1 0: no signal / 1: not no signal (Main input) 0: no signal / 1: not no signal (Primary backup input) 0: no signal / 1: not no signal (Secondary backup input) When Input change mode is not Off		
		Manual Switch Back	BIP:FSB	Not avail					Enable when Input change mode is not Off and Auto switch back mode is Disable.	
USB media player Setup	USB media player	SUS:UMP*	Not avail	QUS:UMP	QUS:UMP*	Not avail	0 / 1	Disable / Enable		
	Video Playback Mode	SUS:VPB*	Not avail	QUS:VPB	QUS:VPB*	Not avail	0 / 1	Standard / Adjust		
	Resume play	SUS:RSP*	Not avail	QUS:RSP	QUS:RSP*	Not avail	0 / 1	OFF / ON		
	Slide show duration	SUS:SSD***	Not avail	QUS:SSD	QUS:SSD***	Not avail	005 ~ 600	5 ~ 600 seconds (5 second unit)		
O p t i o n s M e n u	Options Menu	On screen display	OSP:OSD*	Not avail	QSP:OSD	QSP:OSD*	Not avail	0 / 1	OFF / ON	
		Initial input	OSP:IIN***	Not avail	QSP:IIN	QSP:IIN***	Not avail	OFF / HM1 / DP1 / DL1 / DV1 / DV2 / PC1 / YP1 / VD1 / UD1	OFF / HDMI1 / DisplayPort / DIGITAL LINK / DV11 / DV12 / PC / COMPONENT (RGB) / VIDEO / USB	
		Initial VOL level	OSP:IVL****	Not avail	QSP:IVL	QSP:IVL****	Not avail	0 / 1, 000 ~ 100	OFF / ON, 0 ~ 100	
		Maximum VOL level	OSP:MVL****	Not avail	QSP:MVL	QSP:MVL****	Not avail	0 / 1, 000 ~ 100	OFF / ON, 0 ~ 100	
		Input lock	OSP:INL***	Not avail	QSP:INL	QSP:INL***	Not avail	OFF / HM1 / DP1 / DL1 / DV1 / DV2 / PC1 / YP1 / VD1 / UD1	OFF / HDMI1 / DisplayPort / DIGITAL LINK / DV11 / DV12 / PC / COMPONENT (RGB) / VIDEO / USB	
		Button lock	OSP:BTI***	Not avail	QSP:BTI	QSP:BTI***	Not avail	OFF / MEN / ALL	OFF / MENU&ENTER / ON	
		Controller User level	OSP:RCM*	Not avail	QSP:RCM	QSP:RCM*	Not avail	0 / 1 / 2 / 3	OFF / User1 / User2 / User3	
		PC auto setting	OSP:PAS*	Not avail	QSP:PAS	QSP:PAS*	Not avail	0 / 1	OFF / ON	
		Off-timer function	OSP:OFT*	Not avail	QSP:OFT	QSP:OFT*	Not avail	0 / 1	OFF / ON	
		Initial Startup	OSP:ISU***	Not avail	QSP:ISU	QSP:ISU***	Not avail	LST PON STB	LST : Last memory(return to a front state) PON : ON STB : STANDBY	
		Clock Display	OSP:CLK*	Not avail	QSP:CLK	QSP:CLK*	Not avail	0 / 1	OFF / ON	
		Power on message(No activity power off)	OSP:NAP*	Not avail	QSP:NAP	QSP:NAP*	Not avail	0 / 1	OFF / ON	
		Power on message(Power management)	OSP:PMM*	Not avail	QSP:PMM	QSP:PMM*	Not avail	0 / 1	OFF / ON	
		LAN Control Protocol	OSP:LPN***	Not avail	QSP:LPN	QSP:LPN***	Not avail	LP1 / LP2	Protocol1 / Protocol2	
		Audio input select	for Current Input	SAI: A+++	Not avail	QAI:	QAI: V*** A+++	Not avail	*** HM1 / DP1 / DL1 / DV1 / DV2 / PC1 / YP1 / VD1 +++ HM1 / DP1 / DL1 / PC1 / VD1 / NAD	HDMI / DisplayPort / DIGITAL LINK / DV1-D1 / DV1-D2 / PC / COMPONENT (RGB) / VIDEO HDMI / DisplayPort / DIGITAL LINK / AUD101 / AUD102 / NO AUDIO
			for EACH INPUT	SAI: V*** A+++	Not avail	QAI:V***	QAI: V*** A+++	Not avail	*** HM1 / DP1 / DL1 / DV1 / DV2 / PC1 / YP1 / VD1 +++ HM1 / DP1 / DL1 / PC1 / VD1 / NAD	HDMI / DisplayPort / DIGITAL LINK / DV1-D1 / DV1-D2 / PC / COMPONENT (RGB) / VIDEO HDMI / DisplayPort / DIGITAL LINK / AUD101 / AUD102 / NO AUDIO
Long life settings	Long life mode	SLS:LLS*	Not avail	QLS:LLS	QLS:LLS*	Not avail	0 / 1 / 2	OFF / ON1 / ON2		
	Auto brightness adjustment	SLS:LAL*	Not avail	QLS:LAL	QLS:LAL*	Not avail	0 / 1	OFF / ON Available when Long life mode is OFF.		
Information Timing	No Signal Warning	SIT:NSW*	Not avail	QIT:NSW	QIT:NSW*	Not avail	0 / 1	0: Off / 1:On On:display sends out the no signal warning. (QST:NSW*)		
	No Signal Warning Timing	SIT:SWT**	Not avail	QIT:SWT	QIT:SWT**	Not avail	01 ~ 60	01 ~ 60 (minutes)		
	Query status :No Signal Warning Timing	-	Not avail	QST:NSW	QST:NSW*	Not avail	0/1	1: No Signal Warning: 0: No waring for this function.		
	Message of No Signal Warning (Auto) While RS-232C controls: message sent on the display automatically.	-	Not avail	-	QST:NSW*	Not avail	0/1	1: No Signal Warning: 0: No waring for this function.		

TYPE	Function	Control Command		Inquiry Command		Range and kind of parameter Call-back	Explanation
		Transmission Command[:Parameters]	Standby	Transmission Command[:Parameters]	Reply Command[:Parameters]			Standby
Options Menu	No Signal Error	SIT:NSE*	Not avail	QIT:NSE	QIT:NSE*	Not avail	0 / 1 0: Off /1:On On:display sends out the no signal error.. (QST:NSE*)
	No Signal Error Timing	SIT:SET**	Not avail	QIT:SET	QIT:SET**	Not avail	01 ~ 90 01 ~ 90 (minutes)
	Query status :No Signal Error Timing	-	Not avail	QST:NSE	QST:NSE*	Not avail	0/1 1: No Signal Error 0: No error for this function.
	Message of No Signal Error Timing (Auto) While RS-232C controls: message sent on the display automatically.	-	Not avail	-	QST:NSE*	Not avail	0/1 1: No Signal Error 0: No error for this function.
	Temperature Warning	SIT:TPW*	Not avail	QIT:TPW	QIT:TPW*	Not avail	0 / 1 0: Off /1:On On:display sends out the warning temperature.. (QST:TO*)
	Query status :Temperature warning	-	Not avail	QST:TO	QST:TO*	Not avail	0/1 1: "HIGH TEMPERATURE-MODE". *Please check the condition. 0: "NORMAL-MODE".
	Message of Temperature warning (Auto) While RS-232C controls: message sent on the display automatically.	-	Not avail	-	QST:TO*	Not avail	0/1 1: "HIGH TEMPERATURE-MODE". *Please check the condition. 0: "NORMAL-MODE".
Others	Recall	DDS	Not avail				Recall
	Display ID / Display name	DDS:DID	Not avail				Display ID / Display name
	Audio Mute	AOC:*	Not avail				MUTE OFF / MUTE ON
	OSD Clear	VDO	Not avail				OSD Clear
	digital zoom	DZM:* * * *	Not avail	QDZ	QDZ:* * * *	Not avail	0 / 1, 1 / 2 / 3 / 4, 1 / 2 / 3 / 4 / 5, 1 / 2 / 3 / 4 / 5
	Off Timer	ZOT:**	Not avail				00 ~ 90 0 ~ 90(minutes)
	USB media player Skip to the next playback file	UMP:NXT	Not avail	-	-	Not avail	Play next content Available using USB media player
	USB media player Skip to the previous playback file	UMP:PRE	Not avail	-	-	Not avail	Play previous content Available using USB media player
	USB media player Playback again from top of the file	UMP:RPY	Not avail	-	-	Not avail	Play top of the content Available using USB media player
	Inquiry about Signal Status of input signal	-	-	QST:SGS	QST:SGS*	Not avail	0 / 1 / 2 Signal Status information 0: Valid signal 1: No signal 2: Unsupported signal
	Inquiry about Signal Frequency of input signal			QFR	QFR:H***,** V***,**	Avail	000.00 ~ 999.99, 000.00 ~ 999.99
	Inquiry about Signal Format of input signal			QSF	QSF:***** **	Avail	MAX 20 Characters Signal format information
	DIGITAL LINK Inquiry about detail of DIGITAL LINK status			QST:DLD	QST:DLD* *** * --* --* --* --* --* --* --*	Not avail	0 / 1 / 2 / 3 000-225, <20 0 / 1 / 2 -00 ~ -99 -00 ~ -99 -00 ~ -99 -00 ~ -99 -00 ~ -99 -00 ~ -99 -00 ~ -99
	Auto Command Send Setting	RCM:* *					0 / 1 0 / 1 (Number of parameters is 1 to 2.)
	Inquiry about Model Name			QMN	QMN:*****	Avail	55F16
	Inquiry about Model			QID	QID: ** ***. *	Avail	55 VF1H J / U / W / C
	Software Version Main MCU			QRV	QRV: *.*.*.* VF1H	Avail	*Example 1.0000 VF1H
Software Version Sub MCU			QRV:STB	QRV:STB **.*.*	Avail	*Example 01.00	
Software Version EEPROM			QRV:EEP	QRV:EEP **.*.*	Avail	*Example 01.00	
Software Version HDBaseT RX			QRV:HBT	QRV:HBT **.*.*.*	Avail	*Example 30.90_000C	

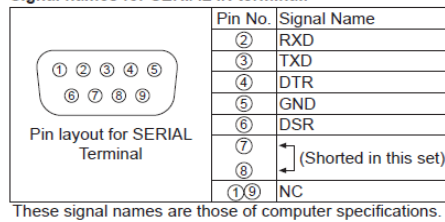
TYPE	Function	Control Command		Inquiry Command			Range and kind of parameter Call-back	Explanation
		Transmission Command[:Parameters]	Standby	Transmission Command[:Parameters]	Reply Command[:Parameters]	Standby		
Others	Software Version Digital Link RX			QRV:DLR	QRV:DLR **.*.*.****	Avail	*Example 30.90.000C	Version Common with the Software Version HDBaseT RX
	Software Version Digital Link TX			QRV:DLT	QRV:DLT **.*.*.****	Avail	*Example 30.90.000C	Version
	Serial number			QSN	QSN:*****	Avail	(9 to 15 figures of the ASCII characters)	(Alphanumeric character), (capital letter of the alphabet), (Blank), '-', (0x30-0x39, 0x41-0x5a, 0x20, 0x2d)
	LAN data Cloning - Write protect	LCL:WRP*	Not avail	QCL:WRP	QCL:WRP*	Not avail	0 / 1	OFF / ON
	SOS History			QSS	QSS:*. **. **. **. **. **	Avail	00 ~ FF. 00 ~ FF. 00 ~ FF. 00 ~ FF. 00 ~ FF. 00 ~ FF.	Number of times First time SOS classification 2nd SOS classification 3n time SOS classification 3n+1st SOS classification 3n+2nd SOS classification In the 10th time, it is arranged as follows. First time SOS classification 2nd SOS classification 9th SOS classification 10th SOS classification 8th SOS classification
	Inquiry about SOS Status			QSS:STS	QSS:STS***	Avail	NON / ERR / EXT	no SOS history / SOS generating / SOS history exists

■ SERIAL terminal connection

Communication parameters

Signal level	RS-232C compliant
Synchronization method	Asynchronous
Baudrate	9600 bps
Parity	None
Character length	8 bits
Stop bit	1 bit
Flow control	None

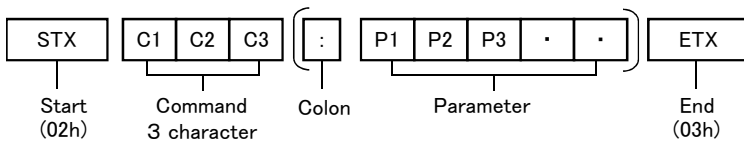
Signal names for SERIAL IN terminal:



type of cable : straight cable

Basic format for control data:

The transmission of control data starts with a STX signal, followed by the command, the parameters, and lastly an ETX signal in that order. If there are no parameters, the colon ":" does not need to be sent.



	00	10	20	30	40	50	60	70
00		DE	0	@	P		p	
01	SH	D1	!	1	A	Q	a	q
02	SX	D2	"	2	B	R	b	r
03	EX	D3	#	3	C	S	c	s
04	ET	D4	\$	4	D	T	d	t
05	EQ	NK	%	5	E	U	e	u
06	AK	SN	&	6	F	V	f	v
07	BL	EB	'	7	G	W	g	w
08	BS	CN	(	8	H	X	h	x
09	HT	EM	)	9	I	Y	i	y
0A	LF	SB	*	:	J	Z	j	z
0B	HM	EC	+	;	K	[	k	{
0C	CL	→	<	L	¥	|	|	
0D	CR	←	=	M]	~	}	
0E	SO	↑	.	>	N	^	n	¯
0F	SI	↓	/	?	O	_	o	°

(Example)

Power on

Character

STX	P	O	N	ETX
-----	---	---	---	-----

Binary

02	50	4F	4E	03
----	----	----	----	----

Picture+85

Character

STX	V	P	C	:	P	I	C	0	8	5	ETX
-----	---	---	---	---	---	---	---	---	---	---	-----

Binary

02	56	50	43	3A	50	49	43	30	38	35	03
----	----	----	----	----	----	----	----	----	----	----	----

Notes:

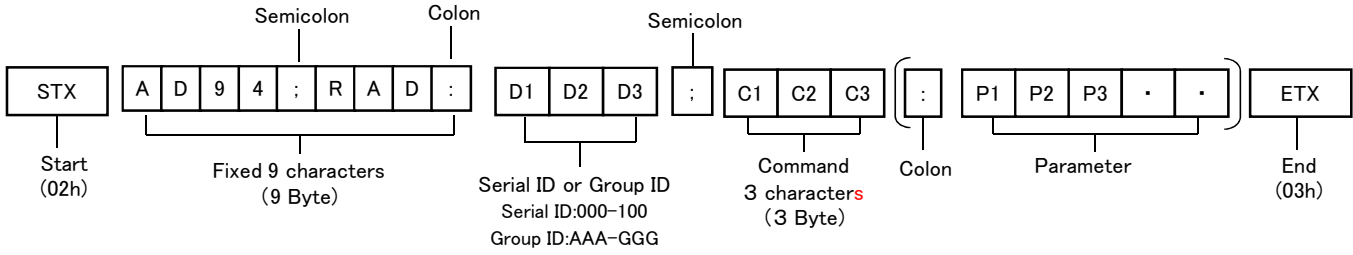
- If an incorrect command is sent, this unit will reply an "ER401" command to the computer.
- If customer send multiple commands, be sure to wait for the response for the first command to come before sending the next command.
- The length of the Parameters are different for each command.
- With the power off(stand-by mode), this display responds to "PON"/"QPW" command only.
- Running the Read user image of Startup image settings, this unit will reply an "ER401" command to the computer.

<When sending command with Display ID>

- When sending command with Display ID, set [Control settings] - [Serial ID function] to "on".
- If Display ID is "0", any ID number in command is acceptable to control. However, the inquiry command is inoperable.
- If serial ID in command is "000", it is acceptable regardless of Display ID of target display. However, the inquiry command is inoperable.
- If a command is sent with serial ID, a response will be sent to the computer only in the following cases.
 - When [display ID and serial ID] is not 0: the display ID needs to match the serial ID.
 - When serial ID is 0: it needs to set [Control settings] - [Serial response(ID all)] to "on".
 - When display ID is 0: it needs to set [Control settings] - [Serial response(ID all)] to "on". and the serial ID is 0.

How to send add "Serial ID"

Serial ID Format	<STX>AD94;RAD:<NUM1><NUM2><NUM3>;*****<ETX> (Serial Control Only)
Group ID Format	(ex.) Serial ID = 1 <STX>AD94;RAD:001;PON<ETX> (ex.) Group ID = A <STX>AD94;RAD:AAA;PON<ETX>



- AD94;RAD: is fixed characters when sending command with ID.
- Serial ID is 3 characters and specified with Display ID which will be controlled.
 - If Display ID is 1, Serial ID is 001.
 - If Display ID is 15, Serial ID is 015.
- Group ID is 3 same characters and specified with Serial ID group which will be controlled.
 - If Serial ID group is A , Group ID is AAA.
 - If Serial ID group is B , Group ID is BBB.
- Sets [Serial control] which terminal to use for input for serial communication.
 - SERIAL IN : SERIAL IN terminal
 - DIGITAL LINK : DIGITAL LINK terminal
- When using daisy chaining, set [Control settings] - [Serial daisy chain position] correctly.
- When using daisy chaining by serial terminal, use a straight cable which pin No.② through ⑧ are hard wired.
- Sets Group ID in [Serial ID Group] of [Control settings] menu. Options are A/B/C/D/E/F/G.
 - Sets whether or not to return a response command when the command with group ID has been received. [Control settings] - [Serial response(ID group)]

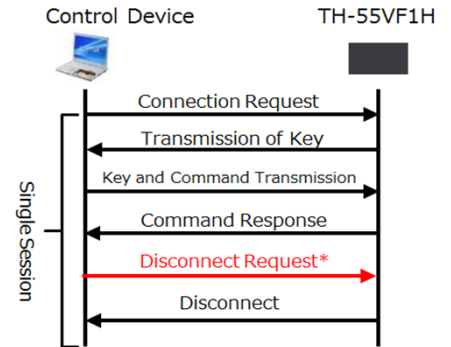
■ Control via LAN

Note :

For security reasons, TH-55VF1H Series displays have a communication specification that prevents unauthorized or malicious third parties from operating the display. It requires network connection request processes for individual commands. The display automatically terminates network communication just after a command response is sent, even if the projector does not receive a disconnect request from your control device software.

To transmit commands sequentially, you need to configure individual control command network connection request processes within your supported control software.

* For security, display instantly terminates communication, even if the control device did not send a disconnect request to the display.



The communication differs whether [Options] - [LAN control protocol] is set to [Protocol 1] or [Protocol 2].

<When [LAN control protocol] is set to [Protocol 1].>

- When the WEB control administrator privileges password has been set (Protect mode)

Connection method

1. Obtain the display's IP address and the port number (Default is 1024), and request connection to the display. (The IP address and the port number can be obtained from menus. For details, see the manual.)
2. The display responds.

Data part	Space	Mode	Space	Random number part	Last terminal symbol
『PDPCONTROL』 (ASCII character string)	『 』 0x20	『 1』 0x31	『 』 0x20	『 zzzzzzzz』 (ASCII code hex number)	(CR) 0x0d
10bytes	1byte	1byte	1byte	8bytes	1byte

3. Hash the following data with the MD5 algorithm, and generate a 32-byte hash value.

『zzzzzzzyyyyy』

zzzzzzzz : 8-byte random number obtained in step 2

yyyyyy : WEB control administrator privileges user password

Command transmission method

Transmit in the following command format.

Transmitted data

Header	Control symbol	Data part	Control symbol	Last terminal symbol
Hash value	(STX) 0x02	Control command (ASCII character string)	(ETX) 0x03	(CR) 0x0d
32bytes	1byte	Undefined	1byte	1byte

Received data

Control symbol	Data part	Control symbol	Last terminal symbol
(STX) 0x02	Control command (ASCII character string)	(ETX) 0x03	(CR) 0x0d
1byte	Undefined	1byte	1byte

•When the WEB control administrator privileges password has not been set (Non protect mode)

Connection method

1. Obtain the display's IP address and the port number (Default is 1024), and request connection to the display.
2. The display responds.

Data part	Space	Mode	Last terminal symbol
『PDPCONTROL』 (ASCII character string)	␣ 0x20	␣ 0x30	(CR) 0x0d
10bytes	1byte	1byte	1byte

Command transmission method

Transmit in the following command format.

Transmitted data

Control symbol	Data part	Control symbol	Last terminal symbol
(STX) 0x02	Control command (ASCII character string)	(ETX) 0x03	(CR) 0x0d
1byte	Undefined	1byte	1byte

Received data

Control symbol	Data part	Control symbol	Last terminal symbol
(STX) 0x02	Control command (ASCII character string)	(ETX) 0x03	(CR) 0x0d
1byte	Undefined	1byte	1byte

<When [LAN control protocol] is set to [Protocol 2].>

•When the WEB control administrator privileges password has been set (Protect mode)

Connection method

1. Obtain the display's IP address and the port number (Default is 1024), and request connection to the display.
2. The display responds.

Data part	Space	Mode	Space	Random number part	Last terminal symbol
『NTCONTROL』 (ASCII character string)	␣ 0x20	␣ 0x31	␣ 0x20	『zzzzzzzz』 (ASCII code hex number)	(CR) 0x0d
9bytes	1byte	1byte	1byte	8bytes	1byte

3. Hash the following data with the MD5 algorithm, and generate a 32-byte hash value.

『xxxxxx:yyyyy:zzzzzzzz』

xxxxxx : WEB control administrator privileges user name

yyyyyy : Above administrator privileges user password

zzzzzzzz : 8-byte random number obtained in step 2

Command transmission method

Transmit in the following command format.

Transmitted data

Header	Data part	Last terminal symbol
Hash value	␣ 0x30 ␣ 0x30 Control command (ASCII character string)	(CR) 0x0d
32bytes	1byte 1byte Undefined	1byte

Received data

Header	Data part	Last terminal symbol
␣ 0x30 1byte	␣ 0x30 Control command (ASCII character string) Undefined	(CR) 0x0d 1byte

•When the WEB control administrator privileges password has not been set (Non protect mode)

Connection method

1. Obtain the display's IP address and the port number (Default is 1024), and request connection to the display.
2. The display responds.

Data part	Space	Mode	Last terminal symbol
『NTCONTROL』 (ASCII character string)	␣ 0x20	␣ 0x30	(CR) 0x0d
9bytes	1byte	1byte	1byte

Command transmission method

Transmit in the following command format.

Transmitted data

Header		Data part	Last terminal symbol
{0}	{0}	Control command	(CR)
0x30	0x30	(ASCII character string)	0x0d
1byte	1byte	Undefined	1byte

Received data

Header		Data part	Last terminal symbol
{0}	{0}	Control command	(CR)
0x30	0x30	(ASCII character string)	0x0d
1byte	1byte	Undefined	1byte

(Note)

When setting to [Protocol 2], the response in the case that sent the inquiry command is omitted the first four characters of command.

Example:

	Control Command		Inquiry Command	
	Transmission Command	Reply Command	Transmission Command	Reply Command
Protocol1	IMS:HMI	IMS	QMI	QMI:HMI
	—	—	QPW	QPW:1
	VPC:PIC100	VPC	QPC:PIC	QPC:PIC100
Protocol2	IMS:HMI	IMS	QMI	HMI
	—	—	QPW	1
	VPC:PIC100	VPC	QPC:PIC	PIC100

For more details of the control via LAN, please obtain from the following web site.
<http://panasonic.net/prodisplays/>