

SICP User Manual [NSV -Series]

DVI 01-01	DVI 02-02	DVI 03-03	DVI 04-04	DVI 05-05
DVI 06-06	PC 07-01	PC 08-02	PC 09-03	DVI 10-10
OVI 11-11	PC 12-04	PC 13-05	PC 14-06	DVI 15-15
DVI 16-16	PC 17-07	PC 18-08	PC 19-09	DVI 20-20
DVI 21-21	DVI 22-22	DVI 23-23	DVI 24-24	DVI 25-25
elect Source				
		DP 🗹 EDIT	Clear All	Send All Stop

Before operating the unit, please read this manual thoroughly, and retain it for future reference



SICP (Serial Interface Communication Protocol)

This document defines all the command and messages exchanged between the Master (a PC or the other controller) and the Slave (the displays).

It also describes the ways to send or read the commands or the messages.

1. Protocol definition

SICP stands for "Serial Interface Communication Protocol".

The protocol is specifically designed to allow data communication in half duplex multi-point environments, but it can also be used for half duplex point-to-point RS-232C communication.

2. Communication characteristics

A half duplex communication is implemented starting from the concept of a master-slave structure, where the display is the slave.

The first action is always taken by the master, which can be either a PC or any controlling device (acting as server) interfaced to the monitor. After sending a command or a request in the appropriate format the master receives from the slave an acknowledgement, which tells the transmitter whether the command is not valid (or not executable, anyway) or it is accepted. In case of a request, the requested information is sent back and it becomes the acknowledgement by itself.

3. How to connect a external equipment

Fema	ale Pin number	Male Pin numl	ber
2 <		>	2
3 <		>	3
5 <		>	5

4. Hardware Protocol

Baud rate : 9600 bps Data bits : 8 bit Parity bits : None Stop bits : 1 bit Handshake : None



Introduction

This manual booklet describes how to manage and utilize the product (Video Wall set) through remote control via RS232 protocol. This will introduce SICP V3.01 (Software that enables you to control the Video Wall via serial) and various applications will be possible with this software. As per different way of customizing, the functions and specifications of each product may vary.

Notice: Please extract VBRunTimesR7.zip and install the program on VISTA, WIN7/8/10 before installing SICP.

Installing SICP V3.01

Run the file named "**SICP 301GPOSet up.exe**" and follow the instruction below. If you have SICP program installed previously, delete the previous one and re-install the new one.





Select the folder in which you wish to save the file. Press "Install" after selecting the desired folder.



Wait until the installation is complete.

Once installation is complete, go to "Start" Menu -> Programs -> SICP V4.01 to run the program



Running SICP V3.01 and Structure

Go to "Start" Menu -> Programs -> SICP V3.01 to run the program.

g p	🗊 SICP PROGRAM (Version 3.01)													
G	le File	Contro	ol Mode								2			
	Progress 100 % Horizontal Vertical P1 COM3 Disconnect 10 10 10 P2 COM5 P2 Start ID 4											Disconnect		
4	4)anel Configration (5)													
ľ	DVI 01-01	DVI 02-02	DVI 03-03	DVI 04-04	DVI 05-05	DVI 06-06	DVI 07-07	DVI 08-08	DVI 09-09	DVI 10-10	Ť	Set ID: 1	• 「	All Set
	DVI 11-11	DVI 12-12	DVI 13-13	DVI 14-14	DVI 15-15	DVI 16-16	DVI 17-17	DVI 18-18	DVI 19-19	DVI 20-20	(6)	Control	Remocon	Slide
	DVI 21-21	DVI 22-22	DVI 23-23	DVI 24-24	DVI 25-25	DVI 26-26	DVI 27-27	DVI 28-28	DVI 29-29	DVI 30-30	Ĭ	Power Co	ntrol	
	DVI 31-31	DVI 32-32	DVI 33-33	DVI 34-34	DVI 35-35	DVI 36-36	DVI 37-37	DVI 38-38	DVI 39-39	DVI 40-40		On Source Co		Off
	DVI 41-41	DVI 42-42	DVI 43-43	DVI 44-44	DVI 45-45	DVI 46-46	DVI 47-47	DVI 48-48	DVI 49-49	DVI 50-50		DVI		DP
	DVI 51-51	DVI 52-52	DVI 53-53	DVI 54-54	DVI 55-55	DVI 56-56	DVI 57-57	DVI 58-58	DVI 59-59	DVI 60-60		PC		HDMI
	DVI 61-61	DVI 62-62	DVI 63-63	DVI 64-64	DVI 65-65	DVI 66-66	DVI 67-67	DVI 68-68	DVI 69-69	DVI 70-70				
	DVI 71-71	DVI 72-72	DVI 73-73	DVI 74-74	DVI 75-75	DVI 76-76	DVI 77-77	DVI 78-78	DVI 79-79	DVI 80-80				
	DVI 81-81	DVI 82-82	DVI 83-83	DVI 84-84	DVI 85-85	DVI 86-86	DVI 87-87	DVI 88-88	DVI 89-89	DVI 90-90		Remocor	e 1 Lock	Unlock
	DVI 91-91	DVI 92-92	DVI 93-93	DVI 94-94	DVI 95-95	DVI 96-96	DVI 97-97	DVI 98-98	DVI 99-99	DVI 9A-9A		Osd Key	Lock	Unlock
F	Select S	Source	\bigcirc											
	•	DVI PC		□ c □ c	DP 🗆 HDMI	EDIT	Clear	AIIS	end All	Stop				
Ur	hable to d	open se	rial port1	2								201	14-10-31	오후 2:27

- 1. Progress Bar: Shows the status of RS-232 communication
- 2. Horizontal & Vertical: Select Horizontal & Vertical count of sets in array.
- 3. Communication: Select the COM Port connected to the PC.
- 4. Panel Configuration: Indicates information such as display configuration, source, Set ID and display sequence number.
- 5. Set ID: Shows the Set ID selected for control.
- 6. Control Button: Set of control buttons/functions.
- 7. Edit tools: Set of editing tools.



Connect & Disconnect

- Users can connect RS-232 input and control from your PC using an RS232 Cable.
- Select the Port into which PC is connected (refer to ③ in the image on previous page) and click "connect" button.

If connected properly, the indicator in box ④ will turn BLUE (from RED). If not connected properly, one of the following messages will appear:

- *"Unable to open serial port": The port may not be available on your PC, or another program may be running under this port.
- *"Cannot connect with Easy DID System": RS232 Cable may not be connected properly or Set ID may be incorrect. Re-check on Set ID.

Multi-vision Control

Users can control each display separately. First, select the display you wish to control by selecting Set ID. You may click on it (Refer to box ④ in the image on the previous page) or select it from the drag-down menu (Refer to ⑤ in the image on the previous page). Users may conduct the following functions on the selected set:

Control	Remocon	Slide					
Power Con	trol						
On		Off					
Source Co	ntrol						
DVI DP							
PC							
Lock Mode							
Lock Mode Remocon	Lock	Unlock					

1) Basic Control

- Select "Control" Tab as shown to the left

Power Control: Powers the Set On/Off Source Control: Selects Source Sound Mute: Turns Mute On/Off Lock Mode: Locks or unlocks the IR/control key.



2) Virtual Remocon (Remote Controller)



- Select the "Remocon" Tab as shown to the left.
- This virtual remote controller controls sets (displays) via RS-232 in the same manner that a physical remote controller would.

Note: Functions in Slide Tab will be described in "6. Slide Function"

3) Color Setting

SeciD: 1	
HDMI Color Sett	ting
SUB-BRT	092
R-OFF SET	112
G-OFF SET	110
B-OFF SET	110
SUB-CON	150
R-GAIN	170
G-GAIN	170
B-GAIN	170
Read	Write

 Users may access the "Color Setting" mode only after entering Supervisor Mode. In order to enter Supervisor mode, go to "Control Mode" in the toolbar (top) and select "Setting Mode"

- Hot key: Ctrl+F2.

🛱 Warning	×
Change Super	rvisor Mode ?
ОК	Cancel

- Click "OK"

 Adjust color values (0~255). The color will be optimized during production & Quality Assurance. Adjusting color values is not recommended without prior consultation with GPO US.



4) Edge Setting

MultiVision F	unction		
Sequence	1	SET	
H-SetCount	1	SET	
V-SetCount	1	SET	
H-Edge Adj	30	SET	
V-Edge Adj	40	SET	
Input Video	0	SET	

 Users can access "Edge Setting" only if after entering Supervisor Mode. In order to enter Supervisor mode, go to "Control Mode" in the tool bar (top) and select "Setting Mode"

- Hot key: Ctrl+F3.



- Click "OK"
- Commands are writable only (not readable).



<OSD Menu>

- < Others >
- Display Sequence: position of display within context of the array (example below)





- H-Set Count (Horizontal Set Count): Number of displays in array horizontally (counting left-to-right) E.g. Diagram of array on previous page shows H-Set Count of "3"

V-Set Count (Vertical Set Count):): Number of displays in array vertically (counting top-to-bottom) E.g. Diagram of array on previous page shows V-Set Count of "3"

- H-Edge Adj (Horizontal Edge Adjust): Set the horizontal gap between displays in Video Wall (value range: 0~200)



- V-Edge Adj (Vertical Edge Adjust): Set the vertical gap of displays in Video Wall (0~200)





HDMI Video Input format: Select video format of HDMI input data
0: RGB444
1: YPbPr444
2: YPbPr422

*HDMI Video Input format issues often manifest themselves in the form of a magenta/pink tint on display panels. If this issue arises, check the type of source being used. If, for example, a Blu-Ray player is being used, the HDMI Input Format on the displays must be set to "1" (default value is "0").

👩 SICP P	ROGRAM (Version 4.00)	_	_		- - X	1	Click "Control
Slide File	Control Mode					1.	
	✓ Panel Control Mode	Ctrl+F1	Com Mode		Disconnect	_	Mode"
IP [Color Setting Mode	Ctrl+F2	© RS-232 © TCP/IP	Use Port2	Disconnect	→ 2.	Select "Other
Port	Others Setting Mode	Ctrl+F3	Vertical 2	P2 COM1 - P2 Star	t ID 16		setting" mode
Panel	Auto Calibration	Ctrl+F4		, <u> </u>			
DVIO	1-01	DVI 02-02		Set ID: 1 -	All Set		
				Comment Democra	Clida		
				Control Remocon	Silde		
				Power Control			
				On	Off		
				Source Control			
	000000000000000000000000000000000000000						
Slide File	Control Mode	_	_				
Shacthe	Network	Status	Com Mode				
IP 1	92.168.100.129		© RS-232	P1 COM3 V	Disconnect		
Port 5	000 Lorizonta		Vertical 2	P2 COM1 P2 Start	t ID 16		
Panel C	Configuration	· · ·		,			
DVI 01	1-01	DVI 02-02		Set ID: 1 -	All Set		
					8		
				- MultiVision Function	т		
				Sequence 1	SET		
				H-SetCount 1	SET Z		
DVI 03	3-03	DVI 04-04		V-SetCount 1	SET I		
				H-Edge Adj 30	SET 🛱		
				V-Edge Adj 40	SET		
				Input Video 0	SET	3. Cl	nange the input
					물	vic	leo format. (Ex. PC :
					N	0	Blu-Bay player: 1)
						Ο,	bia nay player. I)
Select	Source						
		EDIT Clear	All Send All Stop	Progress	100 %		
Linable to	onen serial nort1			10/14/2012	11:20 AM		
Conduie to	opon ochar porti.			10/14/2013	11.20740		

SICP program



Slide Function

1) Edit

1

DVI 06-06 DVI 07.07 DVI 08-08 DVI 09-09 DVI 10-10 3	VI 06-06	PC 07-01	PC 08-02	PC 09-03	DVI
3 DVI 11-11 DVI 12-12 DVI 13-13 DVI 14-14 DVI 15-15	W/I 41.11				
		PC 12-04	PC 13-05	PC 14-06	DVI 1
DVI 16-16 DVI 17-17 DVI 18-18 DVI 19-19 DVI 20-20	VI 16-16	PC 17-07	PC 18-08	PC 19-09	DVI 2
	VI 21-21	DVI 22-22	DVI 23-23	DVI 24-24	DVI 2
	ect Nource				

Example> When users wish to display a 5X5 background from DVI input and display 3X3 (in the center) from VGA input.

- Click on Edit box as described in $(\underline{1})$ on the image above.
- Select PC as described in ② on the image above.
- Select the area by clicking and dragging as described in ③ of the image above.
- The complete image will appear as the image on the top/right.

Send: Press "Send All" in order to test the settings entered in order to decide if the adjustments are satisfactory.

Initialize: Select the "DVI" bubble in the "Edit" tool and press "Set All" in order to initialize.



Add & Delete in Slide Schedule

Control I	Remocon Slide
Slide Show Co	ontrol
00 <u>+</u> min	001:05x05 00:10 002:05x05 00:10
10 ÷sec	003:05x05 00:10
Add	
Remove	
Remove All	
Play Slide	,
Start	Stop

Slide (Layout) scheduling: Users set intervals/schedules for each "slide"/layout separately.

Users cannot change the sequence of play after initial scheduling is activated, so the schedule must be arranged and finalized prior to clicking "Start".

"Add" button: Inserts the edits (slides)

- "Remove" button: Removes highlighted slide
- "Remove All" button: Removes the entire slide schedule

2) Play

Click the "Start" icon (refer to the image above) to begin schedule and click "Stop" icon if you wish to stop the scheduled cycle of slides/layouts.

- Repeat: Check "Repeat" to loop schedule continuously.

3) File Management

Users may save layouts and replay the saved schedules. Users must save after completing scheduling.

- Save a file: Go to "Slide File" (top left of SICP program GUI) and press "File Save" in order to save the file in the folder you wish to select. The file format is *.sld.
- Open a file: Go to "Slide File" and press "File Open" in order to open the slide you wish to play back.



Transmission Formats

This is the format that the computer will send to the display to execute commands.

The format for this command transmission is as follows (total 13 byte):

ex) <STX>001PWRWOFF0<ETX> (Set ID: 1, Power Off Send)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	1	Р	W	R	W	0	F	F	0	0x0d
Hex	ASCII (capital letter)										Hex	

- STX : Start of Text (0x0f)
- ID1 ~ ID3 : Set ID (001~100)
- CM1 ~ CM3 : Command (PWR, MIN, MUT, RML, KPL.....)
- R/W : Read/Write ^{Only use "Read"(R)} or "Write" (W) as set forth in this document
- DA1 ~ DA3 : Data (Values)
- IND : Index
- ETX : End of Text (0x0d)

OK Acknowledgement

An acknowledgement will be sent by the display to the computer to verify that the command has

been successfully received and executed. This format for this acknowledgement is as follows:

ex) <STX>001PWR#OFF#<ETX> (Set ID : 1 , Power Off Acknowledgement)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	1	Р	W	R	#	0	F	F	#	0x0d
Hex	ASCII (capital letter)										Hex	

Error Acknowledgement

The Error Values will be sent by the display to the computer to verify that the command has

been successfully received and executed.

This format for this Error Values is as follows:

ex) <STX>001PWRERROR<ETX> (Set ID:1, Power Off Error)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	1	Р	W	R	E	R	R	0	R	0x0d
Hex					ASC	II (capita	l letter)					Hex



How to choose display ID number

Read Set ID Number

* Attention : "Read Set ID" Function requires serial connection to only one display (1 pc : 1 display)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	F	F	F	S	I	D	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											

- ID1 ~ ID3 : "FFF" (Set ID)

- DA1 ~ DA3 : "000" (Don't care)

Ex) <STX>FFFSIDR0000<ETX> (Read Set ID)

Acknowledgement => <STX>001SID#001#<ETX> (Set ID : 1)

Write Set ID Number

* Attention : Write Set ID Function requires serial connection to only one display (1 pc : 1 display)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	F	F	F	S	I	D	W				0	0x0d
Hex		ASCII (capital letter)										

- ID1 ~ ID3 : "FFF" (Set ID)

- DA1 ~ DA3 : "001" (Set ID Number)

Ex) <STX>FFFSIDW0010<ETX> (Write Set ID:1)

Acknowledgement => <STX>001SID#001#<ETX>

Command List

Power On/Off (PWR)

STX	ID1	ID2	ID3	CM1	CM2	СМЗ	R/W	DA1	DA2	DA3	IND	ETX
0x0f				Р	w	R	W				0	0x0d
Hex	ASCII (capital letter)											Hex

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "-ON" : Power On / "OFF" : Power Off

```
Ex) <STX>001PWRWOFF0<ETX> ( Power Off )
```

```
Acknowledgement => <STX>001PWR#OFF#<ETX>
```

Note: Do not substitute "R" for "W" in the "R/W" column in order to read display power state..



Remote Control Lock On/Off (RML)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				R	м	L	W				0	0x0d
Hex	ASCII (capital letter)										Hex	

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "-ON" : Lock On / "OFF" : Lock Off

Ex) <STX>001RMLW-ON0<ETX> (Lock On)

Acknowledgement => <STX>001RML#-ON#<ETX>

Keypad Control Lock On/Off (KPL)

STX	ID1	ID2	ID3	CM1	CM2	СМЗ	R/W	DA1	DA2	DA3	IND	ETX
0x0f				к	Р	L	W				0	0x0d
Hex	ASCII (capital letter)										Hex	

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "-ON" : Lock On / "OFF" : Lock Off

Ex) <STX>001KPLW-ON0<ETX> (Lock ON)

Acknowledgement => <STX>001KPL#-ON#<ETX>

Source Change (MIN)

STX	ID1	ID2	ID3	CM1	CM2	СМЗ	R/W	DA1	DA2	DA3	IND	ETX
0x0f				М	I	N	W				0	0x0d
Hex	ASCII (capital letter)										Hex	

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "DVI" : DVI / "HDM" HDMI / " -PC" : VGA (D-SUB) / "-DP" : DisplayPort

```
Ex) <STX>001MINWDVI0<ETX> (Source DVI)
```

```
Acknowledgement => <STX>001MIN#DVI#<ETX>
```



Virtual Remote Control (RMT)

STX	ID1	ID2	ID3	CM1	CM2	СМЗ	R/W	DA1	DA2	DA3	IND	ETX
0x0f				R	М	т	W				0	0x0d
Hex					ASC	II (capital	letter)					Hex

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "MEN" (Menu) "SOU" (Source) "LEF" (Left & Volume-) "RIG" (Right & Volume+) "ENT" (Enter) "-UP" (Up) "DOW" (Down) "EXI" (Exit)

Ex) <STX>001RMTWSOU0<ETX> (Remote Source Button) Acknowledgement => <STX>001RMT#SOU#<ETX>

Horizontal Set Count (HSC)

STX	ID1	ID2	ID3	CM1	CM2	СМЗ	R/W	DA1	DA2	DA3	IND	ETX
0x0f				Н	s	С	W				0	0x0d
Hex					ASC	II (capital	letter)					Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "010"

Ex) <STX>001HSCW0100<ETX> (H-Set Count 10) Acknowledgement => <STX>001HSC#010#<ETX>

♦ VGA Auto Adjust (AUT)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				Α	U	т	W				0	0x0d
Hex					ASC	II (capita	l letter)					Hex

-ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "-PC"

Ex) <STX>001AUTW-PC0<ETX> (VGA Auto)

Acknowledgement => <STX>001AUT#-PC#<ETX>



Vertical Set Count (VSC)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				v	S	С	W				0	0x0d
Hex	ASCII (capital letter)										Hex	

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "010"

Ex) <STX>001VSCW0100<ETX> (V-Set Count 10) Acknowledgement => <STX>001VSC#010#<ETX>

Display Sequence (SDS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				S	D	S	W				0	0x0d
Hex	ASCII (capital letter)											Hex

⁻ ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "100"

Ex) <STX>001SDSW0010<ETX> (Display Sequence 1) Acknowledgement => <STX>001SDS#001#<ETX>

Horizontal Edge Adjust (HEG)

STX	ID1	ID2	ID3	CM1	CM2	СМЗ	R/W	DA1	DA2	DA3	IND	ETX
0x0f				Н	Е	G	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "010"

Ex) <STX>001HEGW0300<ETX> (H-Edge Adjust 30) Acknowledgement => <STX>001HEG#030#<ETX>



Vertical Edge Adjust (VEG)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				v	Е	G	W				0	0x0d
Hex	ASCII (capital letter)											

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "000" ~ "200"

Ex) <STX>001VEGW0400<ETX> (V-Edge Adjust 40)

Acknowledgement => <STX>001VEG#040#<ETX>

HDMI Input format (IVF)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				I	V	F	W				0	0x0d
Hex	ex ASCII (capital letter)											
~ 101												

- ID1 ~ ID3 : Set ID ("001" ~ "100")

-DA1 ~ DA3 : "R44"	: RGB444
"Y44"	: YPbPr444
"Y22"	: YPbPr422

Ex) <STX>001IVFWR440<ETX> (HDMI Input format RGB444)

Acknowledgement => <STX>001IVF#R44#<ETX>

Color Adjust DVI (FCD)

STX	ID1	ID2	ID3	CM1	CM2	СМЗ	R/W	DA1	DA2	DA3	IND	ETX	
0x0f				F	С	D						0x0d	
Hex					ASC	II (capita	l letter)					Hex	
- ID1 ′	- ID1 ~ ID3 : Set ID ("001" ~ "100")												
- DA1 ~ DA3 : "000" ~ "255" (Color Value)													
- R/W	: "W"	(Write	e)										
	"R" (Read)											
-IND :	"0"(Sub-Br	ightne	ss)									
	"1" (R-Offset)												
	"2" (G-Offset)												
	"3" (B-Offs	et)										
	"4" (5	Sub-Co	ntrast)									
	"5" (R-Gain)										
	"6" (G-Gair	ı)										
	"7" (B-Gain)										
Ex) <s< td=""><td>TX>00</td><td>1FCDV</td><td>V1004<</td><td><etx> (</etx></td><td>Write</td><td>: DVI S</td><td>ub-Con</td><td>trast 1</td><td>00)</td><td></td><td></td><td></td></s<>	TX>00	1FCDV	V1004<	<etx> (</etx>	Write	: DVI S	ub-Con	trast 1	00)				
Ackno	wledg	ement	=> <s< td=""><td>TX>001</td><td>FCD#1</td><td>004<et< td=""><td>·X></td><td></td><td>-</td><td></td><td></td><td></td></et<></td></s<>	TX>001	FCD#1	004 <et< td=""><td>·X></td><td></td><td>-</td><td></td><td></td><td></td></et<>	·X>		-				
Ex) <s< td=""><td>TX>00</td><td>1FCDR</td><td>0002<</td><td>ETX> (</td><td>Read :</td><td>DVI G-0</td><td>Offset)</td><td></td><td></td><td></td><td></td><td></td></s<>	TX>00	1FCDR	0002<	ETX> (Read :	DVI G-0	Offset)						
Ackno	wledg	ement	=> <s< td=""><td>TX>001</td><td>LFCD#1</td><td>102<et< td=""><td>X> (G-</td><td>Offset</td><td>:110)</td><td></td><td></td><td></td></et<></td></s<>	TX>001	LFCD#1	102 <et< td=""><td>X> (G-</td><td>Offset</td><td>:110)</td><td></td><td></td><td></td></et<>	X> (G-	Offset	:110)				

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Color Adjust VGA (D-SUB) (FCP)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3		ETX
0x0f				F	С	Р						0x0d
Hex	ASCII (capital letter)											

```
- ID1 ~ ID3 : Set ID ("001" ~ "100")
```

```
- DA1 ~ DA3 : "000" ~ "255" ( Color Value )
```

```
- R/W : "W" (Write)
```

```
"R" (Read)
```

```
- IND : "0" (Sub-Brightness)
```

```
"1" ( R-Offset )
```

```
"2" (G-Offset)
```

```
"3" (B-Offset)
```

```
"4" (Sub-Contrast)
```

```
"5" (R-Gain)
```

```
"6" (G-Gain)
```

```
"7" ( B-Gain )
```

```
Ex) <STX>001FCAW1004<ETX> (Write : VGA Sub-Contrast 100)
Acknowledgement => <STX>001FCA#1004<ETX>
Ex) <STX>001FCAR0002<ETX> (Read : VGA G-Offset)
Acknowledgement => <STX>001FCA#1102<ETX> (G-Offset : 110)
```

Zoom IN/OUT (ZOM)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	0	Z	0	Μ	W					0x0d
Hex	ASCII (capital letter)											

-ID1 ~ ID3 : Set ID ("000")

-DA1 ~ DA2 : "11" ~ "99" (H- Set Count , V-Set Count) Ex) 3x3 Multivision => 33

-DA3 : "I" or "O" ("I" Zoom IN, "O" Zoom OUT)

-R/W : "W" (Write)

-IND : Don't care

Ex) <STX>000ZOMW22I0<ETX> (2x2, Zoom IN, DVI 1)

Ex) <STX>000ZOMW33O1<ETX> (3x3, Zoom OUT, PC)



Power On/Off Status (PWS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				Р	W	S	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "-ON" : Power On "OFF" : Power Off

Ex) <STX>001PWSR0000<ETX> (Set ID: 1 Read Power Status) Acknowledgement => <STX>001PWR#OFF#<ETX>