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## GeoBox G413 RS232 Commands

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## 1 PURPOSE

This document describes the UART Protocol between the GeoBox and a Computer (Host). The Protocol is based on a ASCII commands. By using this protocol a Host will be able control the GeoBox on a physical link.

## 2 SCOPE

The physical link is not defined in this document. Therefore the protocol can either be implemented on top of RS-232, USB, Ethernet or other forthcoming communication methods.

### 2.1 RS232 Setting

Baud rate:	9600/115200
Parity check:	None
Data bit:	8
Stop bit:	1
Flow Control:	None

**Table 1**

## 3 FUNCTION TYPE

The Function is grouped in six different function types:

Function type	Comments
Header code	'S': An <i>start</i> function executes an action.
Device ID	'00'- '99': An <i>ID</i> function performs a set operation to the selected device.
Function code	An <i>command</i> function is performed with three defined characters.
Argument	'+' & '-': Adjust or Execution for the command code. 'R': Read back current setting according to the command code.
Value code	'000'-'999': The programmed value for the command code. ('000' for 'R' Argument)
End code	<CR><LF>

**Table 2**

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## 4 COMMAND RETURN CODES

If a valid command is received the GeoBox executes the command and as an acknowledgment it replies to the box by returning a copy of the command with the current value appended.

If the box receives an illegal command, it replies by returning an error message as 'ERR'.

## 5 COMMAND SYNTAX

Every command consists of a command that is ended with a delimiter. The command consists of a *function code*, a *separator*, and an argument.

A *function code* consists of 3-5 ASCII letters and begins with a letter [A-Z], [a-z]

```
|-----Command-----|
```

```
<Header code><Device ID><Function code><Argument><Value code><End code>
```

At the end of this document, the "Table of Serial Commands" lists all valid function codes. Any other combination of characters received before a *delimiter* will result in an error response from the box to the control unit (Host).

### 5.1 Command Example

Select the HDMI1 Input Source Regardless the Box ID:

```
ASCII: S00INP+001<CR><LF>
HEX: 53 30 30 49 4E 50 2B 30 30 31 0D 0A
```

Load Profile 1 to the Box With ID 1:

```
ASCII: S01PFL+000<CR><LF>
HEX: 53 30 31 50 46 4C 2B 30 30 31 0D 0A
```

Set Left Edge Overlap to +1000:

```
ASCII: S00OLE1000<CR><LF>
HEX: 53 30 30 4F 4C 45 31 30 30 30 0D 0A
```

Set Left Edge Overlap to -1000:

```
ASCII: S01OLE9000<CR><LF>
HEX: 53 30 30 4F 4C 45 39 30 30 30 0D 0A
```

## 6 ERROR SYNTAX

If an command isn't available the box response with an error message:

```
|-----Command-----|
```

```
<Header code><Device ID><ERR><Argument><Value code><End code>
```

### 6.1 Error Example

```
ASCII: S00ERR+000<CR><LF>
HEX: 53 30 30 45 52 52 2B 30 30 30 0D 0A
```

## 7 TABLE OF FUNCTIONS

Function	Code	Value	Default	Remarks
Virtual IR Key	VKY			0: 0
				1: 1
				2: 2
				3: 3
				4: 4
				5: 5
				6: 6
				7: 7
				8: 8
				9: 9
				10: POWER
				11: MUTE
				12: HDMI-1
				13: VGA
				14: HDMI-2
				17: DisplayPort
				20: INFO
				21: RETURN
				22: MENU
				23: EXIT
				24: LEFT
				25: RIGHT
				26: UP
				27: DOWN
				28: ENTER
				30: 1080P
				40: 4 CORNER
				41: WARP
				42: PATTERN
				43: OSD TIME OUT
				44: VIDEO WALL
				46: PROFILE
				60: CH-1
				61: CH-2
				62: CH-3
				63: CH-4
				64: MODE-1
				65: MODE-2
				66: MODE-3
				67: MODE-4
				70: OVERLAP

				71: RESET
				72: ALL (Input Source/Output Resolution)
				73: TOP LH
				74: TOP RH
				75: RATIO
				76: POSITION
				77: SHIFT
Power	PWR	RANGE: 0~1	1	0: Power Off
				1: Power On
Brightness	BRI	RANGE: 0~100	50	
Contrast	CON	RANGE: 0~100	75	
Hue	HUE	RANGE: 0~100	50	(Video Color Space Only)
Saturation	XAT	RANGE: 0~100	50	(Video Color Space Only)
Sharpness	XHA	RANGE: 0~100	0	
Color Temperature	CLR	RANGE: 0~3	0	0: Reddish
				1: Neutral
				2: Bluish
				3: Custom
Red Gain	RGN	RANGE: 0~100	100	
Green Gain	GGN	RANGE: 0~100	100	
Blue Gain	BGN	RANGE: 0~100	100	
Scaling Ratio	SCL	RANGE:0~1	0	0: Full Screen
				1: Original Aspect Ratio
Input Source	INP	RANGE: 0~2	2	0: HDMI-1
				1: HDMI-2
				2: DisplayPort
				3: VGA
Video Wall Output Mode	OPM	RANGE: 245~254	245	245: Mode Index 1
				246: Mode Index 2
				247: Mode Index 3
				248: Mode Index 4
				249: Mode Index 5
				250: Mode Index 6
				251: Mode Index 7
				252: Mode Index 8
				253: Mode Index 9
				254: Mode Index 10
Orientation	ORI	RANGE: 0~5	0	0: Normal
				1: 90 degree (not available for 4K60 )
				2: 270 degree (not available for 4K60 )
				3: H Mirror
				4: V Mirror
				5: HV Mirror

PIP On/Off	PIO	RANGE: 0-2	0	0: Off
				1: PIP
				2: POP
PIP Size	PIZ	RANGE: 0-100	0	0: 1/6 (320x180)
				44: 1024x576 (ratio:full)
				100: Full (1920x1080)
PIP Horizontal Position	PIH	RANGE: 0-100	0	
PIP Vertical Position	PIV	RANGE: 0-100	0	
PIP Display Ratio	PIR	RANGE: 0-1	0	0: Full
				1: Aspect Ratio
PIP Input Source	PIT	RANGE: 0-4		
PIP Orientation	POR	RANGE: 0,3,4,5	0	0: Normal
				3: H Mirror
				4: V Mirror
				5: HV Mirror
Input Source	INP	RANGE: 0~2	2	0: HDMI-1
				1: HDMI-2
				2: DisplayPort
				3: VGA
Profile Save	PFX	RANGE: 0~4		0: Index 1
				1: Index 2
				2: Index 3
				3: Index 4
				4: Index 5
Profile Load	PFL	RANGE: 0~4		0: Index 1
				1: Index 2
				2: Index 3
				3: Index 4
				4: Index 5
Horizontal Zoom	HZM	RANGE: 0~14	0	
Vertical Zoom	VZM	RANGE: 0~14	0	
Horizontal Pan	HPN	RANGE: 0~14	0	
Vertical Pan	VPN	RANGE: 0~14	0	
Overlap Left Edge	OLE	RANGE: +/-1800	0	-1: 9001, -1800: 9800
Overlap Right Edge	ORE	RANGE: +/-1800	0	
Overlap Top Edge	OTE	RANGE: +/-1800	0	
Overlap Bottom Edge	OBE	RANGE: +/-1800	0	
Language	LNG	RANGE: 0~2	0	0: English
				1: Simplified Chinese
				2: Traditional Chinese
Reset Settings	RXT	RANGE: 1~2		1: Reset All Settings
				2: Reset Video Wall Settings
Audio Mute	MUT	RANGE: 0~1		0: Mute Off
				1: Mute On

Menu Time Out Time	MTO	RANGE: 0~60	0	0: Menu Time Out Off 60: Menu Time Out After 60 Seconds
Logo Time Out Time	LTO	RANGE: 0~60	10	0: Disable Start-up Logo
Standby Time	STT	RANGE: 0~120	0	0: Disable Power Saving
Black Screen (no input signal)	BLK	RANGE: 0~1	0	0: Blue Screen 1: Black Screen
Box ID	BID	RANGE: 0~99	0	
EDID (Current Input Source)	EDI	RANGE: 0~13	0	0: 3840x2160 60Hz (VIC 97) 1: 3840x2160 30Hz (VIC 95) 2: 1920x1080 60Hz (VIC 16) 3: 1024x768 60Hz (VESA) 4: 1280x720 60Hz (VIC 4) 5: 1280x800 60Hz (VESA) 6: 1920x1200 60Hz (VESA RB) 7: 1920x2160 60Hz (CVT RB) 8: 2560x1440 60Hz (VESA RB) 9: 2560x1600 60Hz (VESA RB) 10: 3840x1080 60Hz (CVT RB) 11: 3840x2400 60Hz (CVT RB) 12: 3840x2400 30Hz (CVT RB) 13: Customize (CVT RB)
HDMI-1 EDID	H1E	RANGE: 0~13	0	0: 3840x2160 60Hz (VIC 97) 1: 3840x2160 30Hz (VIC 95) 2: 1920x1080 60Hz (VIC 16) 3: 1024x768 60Hz (VESA) 4: 1280x720 60Hz (VIC 4) 5: 1280x800 60Hz (VESA) 6: 1920x1200 60Hz (VESA RB) 7: 1920x2160 60Hz (CVT RB) 8: 2560x1440 60Hz (VESA RB) 9: 2560x1600 60Hz (VESA RB) 10: 3840x1080 60Hz (CVT RB) 11: 3840x2400 60Hz (CVT RB) 12: 3840x2400 30Hz (CVT RB) 13: Customize (CVT RB)
HDMI-2 EDID	H2E	RANGE: 0~13	0	0: 3840x2160 60Hz (VIC 97) 1: 3840x2160 30Hz (VIC 95) 2: 1920x1080 60Hz (VIC 16) 3: 1024x768 60Hz (VESA) 4: 1280x720 60Hz (VIC 4) 5: 1280x800 60Hz (VESA) 6: 1920x1200 60Hz (VESA RB) 7: 1920x2160 60Hz (CVT RB)

				8: 2560x1440 60Hz (VESA RB)
				9: 2560x1600 60Hz (VESA RB)
				10: 3840x1080 60Hz (CVT RB)
				11: 3840x2400 60Hz (CVT RB)
				12: 3840x2400 30Hz (CVT RB)
				13: Customize (CVT RB)
DP EDID	DPE	RANGE: 0~13	0	0: 3840x2160 60Hz (VIC 97)
				1: 3840x2160 30Hz (VIC 95)
				2: 1920x1080 60Hz (VIC 16)
				3: 1024x768 60Hz (VESA)
				4: 1280x720 60Hz (VIC 4)
				5: 1280x800 60Hz (VESA)
				6: 1920x1200 60Hz (VESA RB)
				7: 1920x2160 60Hz (CVT RB)
				8: 2560x1440 60Hz (VESA RB)
				9: 2560x1600 60Hz (VESA RB)
				10: 3840x1080 60Hz (CVT RB)
				11: 3840x2400 60Hz (CVT RB)
				12: 3840x2400 30Hz (CVT RB)
				13: Customize (CVT RB)
VGA EDID	VGE	RANGE: 0~13	2	2: 1920x1080 60Hz (VIC 16)
				3: 1024x768 60Hz (VESA)
				4: 1280x720 60Hz (VIC 4)
				5: 1280x800 60Hz (VESA)
				6: 1920x1200 60Hz (VESA RB)
				13: Customize (CVT RB)
HDMI-1 Customize EDID Width	H1W	1024~3840	1920	
HDMI-1 Customize EDID Height	H1V	720~2400	1080	
HDMI-2 Customize EDID Width	H2W	1024~3840	1920	
HDMI-2 Customize EDID Height	H2V	720~2400	1080	
DP Customize EDID Width	DPW	1024~3840	1920	
DP Customize EDID Height	DPV	720~2400	1080	
VGA Customize EDID Width	VGW	1024~3840	1920	
VGA Customize EDID Height	VGW	720~2400	1080	
Frame Sync (Frame Lock)	FLO	RANGE: 0~2	1	0: Normal (fixed video latency)
				1: Fast (dynamic video latency)
				2: Disable (free-run mode)
Input Signal Status	IPT	RANGE: 0~1		0: [0000] no input signal
				1: [0001] input signal
Output Signal Status	OPT	RANGE: 0~15		0: [0000] no output signal on TV1~TV4
				1: [0001] output signal on TV1
				15: [1111] output signal on TV1~TV4
Mode Type	MTP	RANGE 0-24	0	Select the VideoWall type



Mode Loop Range	MLR	RANGE 0-9	0	Index 1 to Index 10
Mode LoopTime	MLT	RANGE 0-600	0	Set the time in second for Mode demo
Mode Index1 TV1 TL Horizontal Position	XAA	RANGE 0-1920	0	Ex: S00XAA1920
Mode Index1 TV1 TL Vertical Position	YAA	RANGE 0-1080	0	
Mode Index1 TV1 TR Horizontal Position	UAA	RANGE 0-1920	1920	
Mode Index1 TV1 TR Vertical Position	VAA	RANGE 0-1080	0	
Mode Index1 TV2 TL Horizontal Position	XAB	RANGE 0-1920	0	
Mode Index1 TV2 TL Vertical Position	YAB	RANGE 0-1080	0	
Mode Index1 TV2 TR Horizontal Position	UAB	RANGE 0-1920	1920	
Mode Index1 TV2 TR Vertical Position	VAB	RANGE 0-1080	0	
Mode Index1 TV3 TL Horizontal Position	XAC	RANGE 0-1920	0	
Mode Index1 TV3 TL Vertical Position	YAC	RANGE 0-1080	0	
Mode Index1 TV3 TR Horizontal Position	UAC	RANGE 0-1920	1920	
Mode Index1 TV3 TR Vertical Position	VAC	RANGE 0-1080	0	
Mode Index1 TV4 TL Horizontal Position	XAD	RANGE 0-1920	0	
Mode Index1 TV4 TL Vertical Position	YAD	RANGE 0-1080	0	
Mode Index1 TV4 TR Horizontal Position	UAD	RANGE 0-1920	1920	
Mode Index1 TV4 TR Vertical Position	VAD	RANGE 0-1080	0	
Mode Index2 TV1 TL Horizontal Position	XBA	RANGE 0-1920	0	
Mode Index2 TV1 TL Vertical Position	YBA	RANGE 0-1080	0	
Mode Index2 TV1 TR Horizontal Position	UBA	RANGE 0-1920	1920	
Mode Index2 TV1 TR Vertical Position	VBA	RANGE 0-1080	0	
Mode Index2 TV2 TL Horizontal Position	XBB	RANGE 0-1920	0	
Mode Index2 TV2 TL Vertical Position	YBB	RANGE 0-1080	0	
Mode Index2 TV2 TR Horizontal Position	UBB	RANGE 0-1920	1920	
Mode Index2 TV2 TR Vertical Position	VBB	RANGE 0-1080	0	
Mode Index2 TV3 TL Horizontal Position	XBC	RANGE 0-1920	0	
Mode Index2 TV3 TL Vertical Position	YBC	RANGE 0-1080	0	
Mode Index2 TV3 TR Horizontal Position	UBC	RANGE 0-1920	1920	
Mode Index2 TV3 TR Vertical Position	VBC	RANGE 0-1080	0	
Mode Index2 TV4 TL Horizontal Position	XBD	RANGE 0-1920	0	
Mode Index2 TV4 TL Vertical Position	YBD	RANGE 0-1080	0	
Mode Index2 TV4 TR Horizontal Position	UBD	RANGE 0-1920	1920	
Mode Index2 TV4 TR Vertical Position	VBD	RANGE 0-1080	0	
Mode Index3 TV1 TL Horizontal Position	XCA	RANGE 0-1920	0	
Mode Index3 TV1 TL Vertical Position	YCA	RANGE 0-1080	0	
Mode Index3 TV1 TR Horizontal Position	UCA	RANGE 0-1920	1920	
Mode Index3 TV1 TR Vertical Position	VCA	RANGE 0-1080	0	
Mode Index3 TV2 TL Horizontal Position	XCB	RANGE 0-1920	0	
Mode Index3 TV2 TL Vertical Position	YCB	RANGE 0-1080	0	
Mode Index3 TV2 TR Horizontal Position	UCB	RANGE 0-1920	1920	
Mode Index3 TV2 TR Vertical Position	VCB	RANGE 0-1080	0	
Mode Index3 TV3 TL Horizontal Position	XCC	RANGE 0-1920	0	

Mode Index3 TV3 TL Vertical Position	YCC	RANGE 0-1080	0	
Mode Index3 TV3 TR Horizontal Position	UCC	RANGE 0-1920	1920	
Mode Index3 TV3 TR Vertical Position	VCC	RANGE 0-1080	0	
Mode Index3 TV4 TL Horizontal Position	XCD	RANGE 0-1920	0	
Mode Index3 TV4 TL Vertical Position	YCD	RANGE 0-1080	0	
Mode Index3 TV4 TR Horizontal Position	UCD	RANGE 0-1920	1920	
Mode Index3 TV4 TR Vertical Position	VCD	RANGE 0-1080	0	
Mode Index4 TV1 TL Horizontal Position	XDA	RANGE 0-1920	0	
Mode Index4 TV1 TL Vertical Position	YDA	RANGE 0-1080	0	
Mode Index4 TV1 TR Horizontal Position	UDA	RANGE 0-1920	1920	
Mode Index4 TV1 TR Vertical Position	VDA	RANGE 0-1080	0	
Mode Index4 TV2 TL Horizontal Position	XDB	RANGE 0-1920	0	
Mode Index4 TV2 TL Vertical Position	YDB	RANGE 0-1080	0	
Mode Index4 TV2 TR Horizontal Position	UDB	RANGE 0-1920	1920	
Mode Index4 TV2 TR Vertical Position	VDB	RANGE 0-1080	0	
Mode Index4 TV3 TL Horizontal Position	XDC	RANGE 0-1920	0	
Mode Index4 TV3 TL Vertical Position	YDC	RANGE 0-1080	0	
Mode Index4 TV3 TR Horizontal Position	UDC	RANGE 0-1920	1920	
Mode Index4 TV3 TR Vertical Position	VDC	RANGE 0-1080	0	
Mode Index4 TV4 TL Horizontal Position	XDD	RANGE 0-1920	0	
Mode Index4 TV4 TL Vertical Position	YDD	RANGE 0-1080	0	
Mode Index4 TV4 TR Horizontal Position	UDD	RANGE 0-1920	1920	
Mode Index4 TV4 TR Vertical Position	VDD	RANGE 0-1080	0	
Mode Index5 TV1 TL Horizontal Position	XEA	RANGE 0-1920	0	
Mode Index5 TV1 TL Vertical Position	YEA	RANGE 0-1080	0	
Mode Index5 TV1 TR Horizontal Position	UEA	RANGE 0-1920	1920	
Mode Index5 TV1 TR Vertical Position	VEA	RANGE 0-1080	0	
Mode Index5 TV2 TL Horizontal Position	XEB	RANGE 0-1920	0	
Mode Index5 TV2 TL Vertical Position	YEB	RANGE 0-1080	0	
Mode Index5 TV2 TR Horizontal Position	UEB	RANGE 0-1920	1920	
Mode Index5 TV2 TR Vertical Position	VEB	RANGE 0-1080	0	
Mode Index5 TV3 TL Horizontal Position	XEC	RANGE 0-1920	0	
Mode Index5 TV3 TL Vertical Position	YEC	RANGE 0-1080	0	
Mode Index5 TV3 TR Horizontal Position	UEC	RANGE 0-1920	1920	
Mode Index5 TV3 TR Vertical Position	VEC	RANGE 0-1080	0	
Mode Index5 TV4 TL Horizontal Position	XED	RANGE 0-1920	0	
Mode Index5 TV4 TL Vertical Position	YED	RANGE 0-1080	0	
Mode Index5 TV4 TR Horizontal Position	UED	RANGE 0-1920	1920	
Mode Index5 TV4 TR Vertical Position	VED	RANGE 0-1080	0	
Mode Index6 TV1 TL Horizontal Position	XFA	RANGE 0-1920	0	
Mode Index6 TV1 TL Vertical Position	YFA	RANGE 0-1080	0	
Mode Index6 TV1 TR Horizontal Position	UFA	RANGE 0-1920	1920	
Mode Index6 TV1 TR Vertical Position	VFA	RANGE 0-1080	0	

Mode Index6 TV2 TL Horizontal Position	XFB	RANGE 0-1920	0	
Mode Index6 TV2 TL Vertical Position	YFB	RANGE 0-1080	0	
Mode Index6 TV2 TR Horizontal Position	UFB	RANGE 0-1920	1920	
Mode Index6 TV2 TR Vertical Position	VFB	RANGE 0-1080	0	
Mode Index6 TV3 TL Horizontal Position	XFC	RANGE 0-1920	0	
Mode Index6 TV3 TL Vertical Position	YFC	RANGE 0-1080	0	
Mode Index6 TV3 TR Horizontal Position	UFC	RANGE 0-1920	1920	
Mode Index6 TV3 TR Vertical Position	VFC	RANGE 0-1080	0	
Mode Index6 TV4 TL Horizontal Position	XFD	RANGE 0-1920	0	
Mode Index6 TV4 TL Vertical Position	YFD	RANGE 0-1080	0	
Mode Index6 TV4 TR Horizontal Position	UFD	RANGE 0-1920	1920	
Mode Index6 TV4 TR Vertical Position	VFD	RANGE 0-1080	0	
Mode Index7 TV1 TL Horizontal Position	XGA	RANGE 0-1920	0	
Mode Index7 TV1 TL Vertical Position	YGA	RANGE 0-1080	0	
Mode Index7 TV1 TR Horizontal Position	UGA	RANGE 0-1920	1920	
Mode Index7 TV1 TR Vertical Position	VGA	RANGE 0-1080	0	
Mode Index7 TV2 TL Horizontal Position	XGB	RANGE 0-1920	0	
Mode Index7 TV2 TL Vertical Position	YGB	RANGE 0-1080	0	
Mode Index7 TV2 TR Horizontal Position	UGB	RANGE 0-1920	1920	
Mode Index7 TV2 TR Vertical Position	VGB	RANGE 0-1080	0	
Mode Index7 TV3 TL Horizontal Position	XGC	RANGE 0-1920	0	
Mode Index7 TV3 TL Vertical Position	YGC	RANGE 0-1080	0	
Mode Index7 TV3 TR Horizontal Position	UGC	RANGE 0-1920	1920	
Mode Index7 TV3 TR Vertical Position	VGC	RANGE 0-1080	0	
Mode Index7 TV4 TL Horizontal Position	XGD	RANGE 0-1920	0	
Mode Index7 TV4 TL Vertical Position	YGD	RANGE 0-1080	0	
Mode Index7 TV4 TR Horizontal Position	UGD	RANGE 0-1920	1920	
Mode Index7 TV4 TR Vertical Position	VGD	RANGE 0-1080	0	
Mode Index8 TV1 TL Horizontal Position	XHA	RANGE 0-1920	0	
Mode Index8 TV1 TL Vertical Position	YHA	RANGE 0-1080	0	
Mode Index8 TV1 TR Horizontal Position	UHA	RANGE 0-1920	1920	
Mode Index8 TV1 TR Vertical Position	VHA	RANGE 0-1080	0	
Mode Index8 TV2 TL Horizontal Position	XHB	RANGE 0-1920	0	
Mode Index8 TV2 TL Vertical Position	YHB	RANGE 0-1080	0	
Mode Index8 TV2 TR Horizontal Position	UHB	RANGE 0-1920	1920	
Mode Index8 TV2 TR Vertical Position	VHB	RANGE 0-1080	0	
Mode Index8 TV3 TL Horizontal Position	XHC	RANGE 0-1920	0	
Mode Index8 TV3 TL Vertical Position	YHC	RANGE 0-1080	0	
Mode Index8 TV3 TR Horizontal Position	UHC	RANGE 0-1920	1920	
Mode Index8 TV3 TR Vertical Position	VHC	RANGE 0-1080	0	
Mode Index8 TV4 TL Horizontal Position	XHD	RANGE 0-1920	0	
Mode Index8 TV4 TL Vertical Position	YHD	RANGE 0-1080	0	
Mode Index8 TV4 TR Horizontal Position	UHD	RANGE 0-1920	1920	

Mode Index8 TV4 TR Vertical Position	VHD	RANGE 0-1080	0	
Mode Index9 TV1 TL Horizontal Position	XIA	RANGE 0-1920	0	
Mode Index9 TV1 TL Vertical Position	YIA	RANGE 0-1080	0	
Mode Index9 TV1 TR Horizontal Position	UIA	RANGE 0-1920	1920	
Mode Index9 TV1 TR Vertical Position	VIA	RANGE 0-1080	0	
Mode Index9 TV2 TL Horizontal Position	XIB	RANGE 0-1920	0	
Mode Index9 TV2 TL Vertical Position	YIB	RANGE 0-1080	0	
Mode Index9 TV2 TR Horizontal Position	UIB	RANGE 0-1920	1920	
Mode Index9 TV2 TR Vertical Position	VIB	RANGE 0-1080	0	
Mode Index9 TV3 TL Horizontal Position	XIC	RANGE 0-1920	0	
Mode Index9 TV3 TL Vertical Position	YIC	RANGE 0-1080	0	
Mode Index9 TV3 TR Horizontal Position	UIC	RANGE 0-1920	1920	
Mode Index9 TV3 TR Vertical Position	VIC	RANGE 0-1080	0	
Mode Index9 TV4 TL Horizontal Position	XID	RANGE 0-1920	0	
Mode Index9 TV4 TL Vertical Position	YID	RANGE 0-1080	0	
Mode Index9 TV4 TR Horizontal Position	UID	RANGE 0-1920	1920	
Mode Index9 TV4 TR Vertical Position	VID	RANGE 0-1080	0	
Mode Index10 TV1 TL Horizontal Position	XJA	RANGE 0-1920	0	
Mode Index10 TV1 TL Vertical Position	YJA	RANGE 0-1080	0	
Mode Index10 TV1 TR Horizontal Position	UJA	RANGE 0-1920	1920	
Mode Index10 TV1 TR Vertical Position	VJA	RANGE 0-1080	0	
Mode Index10 TV2 TL Horizontal Position	XJB	RANGE 0-1920	0	
Mode Index10 TV2 TL Vertical Position	YJB	RANGE 0-1080	0	
Mode Index10 TV2 TR Horizontal Position	UJB	RANGE 0-1920	1920	
Mode Index10 TV2 TR Vertical Position	VJB	RANGE 0-1080	0	
Mode Index10 TV3 TL Horizontal Position	XJC	RANGE 0-1920	0	
Mode Index10 TV3 TL Vertical Position	YJC	RANGE 0-1080	0	
Mode Index10 TV3 TR Horizontal Position	UJC	RANGE 0-1920	1920	
Mode Index10 TV3 TR Vertical Position	VJC	RANGE 0-1080	0	
Mode Index10 TV4 TL Horizontal Position	XJD	RANGE 0-1920	0	
Mode Index10 TV4 TL Vertical Position	YJD	RANGE 0-1080	0	
Mode Index10 TV4 TR Horizontal Position	UJD	RANGE 0-1920	1920	
Mode Index10 TV4 TR Vertical Position	VJD	RANGE 0-1080	0	
Mode Buffer Mode	MMB	RANGE 0-1	0	Save mode setting to buffer
Mode Index1 Horizontal Ratio	HRA	RANGE 25-200	100	x100
Mode Index1 Vertical Ratio	VRA	RANGE 25-200	100	x100
Mode Index2 Horizontal Ratio	HRB	RANGE 25-200	100	x100
Mode Index2 Vertical Ratio	VRB	RANGE 25-200	100	x100
Mode Index3 Horizontal Ratio	HRC	RANGE 25-200	100	x100
Mode Index3 Vertical Ratio	VRC	RANGE 25-200	100	x100
Mode Index4 Horizontal Ratio	HRD	RANGE 25-200	100	x100
Mode Index4 Vertical Ratio	VRD	RANGE 25-200	100	x100
Mode Index5 Horizontal Ratio	HRE	RANGE 25-200	100	x100

Mode Index5 Vertical Ratio	VRE	RANGE 25-200	100	x100
Mode Index6 Horizontal Position	HPA	RANGE 0-100	50	
Mode Index6 Vertical Position	VPA	RANGE 0-100	50	
Mode Index7 Horizontal Position	HPB	RANGE 0-100	50	
Mode Index7 Vertical Position	VPB	RANGE 0-100	50	
Mode Index8 Horizontal Position	HPC	RANGE 0-100	50	
Mode Index8 Vertical Position	VPC	RANGE 0-100	50	
Mode Index9 Horizontal Position	HPD	RANGE 0-100	50	
Mode Index9 Vertical Position	VPD	RANGE 0-100	50	
Mode Index10 Horizontal Position	HPE	RANGE 0-100	50	
Mode Index10 Vertical Position	VPE	RANGE 0-100	50	
Mode Index6 Horizontal Ratio	HRF	RANGE 25-200	100	x100
Mode Index6 Vertical Ratio	VRF	RANGE 25-200	100	x100
Mode Index7 Horizontal Ratio	HRG	RANGE 25-200	100	x100
Mode Index7 Vertical Ratio	VRG	RANGE 25-200	100	x100
Mode Index8 Horizontal Ratio	HRH	RANGE 25-200	100	x100
Mode Index8 Vertical Ratio	VRH	RANGE 25-200	100	x100
Mode Index9 Horizontal Ratio	HRI	RANGE 25-200	100	x100
Mode Index9 Vertical Ratio	VRI	RANGE 25-200	100	x100
Mode Index10 Horizontal Ratio	HRJ	RANGE 25-200	100	x100
Mode Index10 Vertical Ratio	VRJ	RANGE 25-200	100	x100
Mode Index6 Horizontal Position	HPF	RANGE 0-100	50	
Mode Index6 Vertical Position	VPF	RANGE 0-100	50	
Mode Index7 Horizontal Position	HPG	RANGE 0-100	50	
Mode Index7 Vertical Position	VPG	RANGE 0-100	50	
Mode Index8 Horizontal Position	HPH	RANGE 0-100	50	
Mode Index8 Vertical Position	VPH	RANGE 0-100	50	
Mode Index9 Horizontal Position	HPI	RANGE 0-100	50	
Mode Index9 Vertical Position	VPI	RANGE 0-100	50	
Mode Index10 Horizontal Position	HPJ	RANGE 0-100	50	
Mode Index10 Vertical Position	VPJ	RANGE 0-100	50	

**Table 3**