
GeoBox G406 RS232 Commands

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

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
```

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
				14: DVI (HDMI-2)
				17: DisplayPort
				20: INFO
				21: RETURN
				22: MENU
				23: EXIT
				24: LEFT
				25: RIGHT
				26: UP
				27: DOWN
				28: ENTER
				30: 1080P
				31: 720P
				33: OTHER (WUXGA/720P/WXGA)
				35: XGA
				36: 1280x800
				44: VIDEO WALL
				46: PROFILE
				48: CH AB
				60: TV1
				61: TV2
				62: TV3
				63: TV4
				70: Overlap
				71: RESET
				72: ALL (Input Source/Output Resolution)
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-1/2
Output Mode	OPM	RANGE: 0-12	0	0: 1920x1080
				1: 1920x1200
				2: 1280x720
				3: 1024x768
				4: 1280x800
				5: 1360x768
				6: 1280x1024
				7: 1400x1050
				8: 1600x1200
				9: 1920x1080@50
				10: 1920x1200@30
				11: 1920x1080@24
				12: 1920x1080@30
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
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
Profile Save All	PFV	RANGE: 0-4		0: Index 1
				1: Index 2
				2: Index 3
				3: Index 4
				4: Index 5
Profile Load All	PFA	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: +/-900	0	
Overlap Right Edge	ORE	RANGE: +/-900	0	
Overlap Top Edge	OTE	RANGE: +/-900	0	
Overlap Bottom Edge	OBE	RANGE: +/-900	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: 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)
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	
Input Signal Status	IPT	0-15		0: [0000] no input signal on TV1~TV4
				1: [0001] input signal on TV1
				15: [1111] input signal on TV1~TV4
Output Signal Status	OPT	0-15		0: [0000] no output signal on TV1~TV4
				1: [0001] output signal on TV1
				15: [1111] output signal on TV1~TV4

Table 3