

CL511 command set

History

No	Issue Date	Description	Apply Firmware
1	2021/10/04	First version.	PIG103_PIF100_PIE100
2	2022/02/10	Modify command: 1. Preset load 2. Preset save	PIG105_PIF100_PIE101
3	2025/11/12	Add TCP/IP port number.	NA

*Notice:

1. The command list is for CL511.
2. The yellow highlight  means the latest update.
3. The blue highlight  means the deleted item.

The CL511 supports two control interfaces:

- TCP/IP (LAN port)
- RS-232 (D-Sub 9-pin connection)

Note: Both interfaces share the same command format and data structure. When using TCP/IP, commands are sent as hexadecimal bytes over a TCP socket connection.

● TCP/IP Command

IP Address: For example (192.168.6.58)

Port: 9997

Packet Transmission: TCP

HEX: Enter the command you want to send

The screenshot shows the 'Packet Sender' application window. The title bar indicates the target IP is 192.168.6.122 and the MAC address is fe80::4b53:df44:d066:c11d%ethernet_32771. The menu bar includes File, Tools, Multicast, Panels, and Help. The main interface has several input fields: 'Name' is set to 'CL511'; 'ASCII' contains '\a0\a9\00\00\00\af'; 'HEX' contains 'A0 A9 00 00 00 AF'; 'Address' is '192.168.6.58'; 'Port' is '9997'; 'Resend Delay' is '0.0/blank off'; and 'TCP' is selected in the transmission type dropdown. 'Send' and 'Save' buttons are at the bottom right. Red boxes highlight the 'HEX' field and the 'Port' field.

Name	CL511
ASCII	\a0\a9\00\00\00\af
HEX	A0 A9 00 00 00 AF
Address	192.168.6.58
Port	9997
Resend Delay	0.0/blank off
Packet Transmission	TCP
Buttons	Send, Save

● RS232 Command

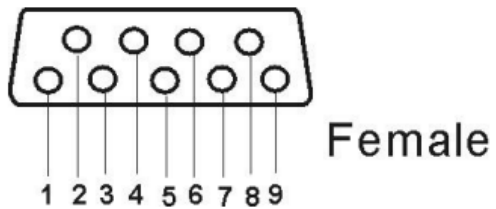
1. Communication Protocol

Transmit Method: Asynchronous Interface Half Duplex Serial Communication.

- Transmit Speed: 9600bps
- Start bit: 1Bit
- Parity Check: NA
- Data Bit: 8Bit
- Stop Bit: 1Bit

2. The wire diagram

The RS232 wire diagram between presenter and remote controller as below

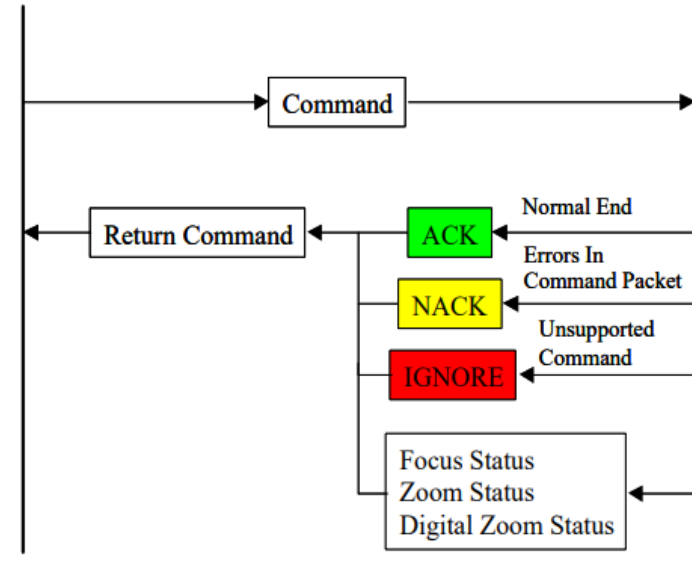


CONNECTIONS		
DB 9F	COLOUR	DB 9F
2	-	3
3	-	2
5	-	5
SHELL	DRAIN	SHELL

3. Communication Program

Host Controller

Camera Module



1. Command Format

4.1 Command Packet Format

1Byte	STX	Start Of Command	: A0h
2Byte	Command	Command	: 00~FFh
3Byte	Parameter1	Data	: 00~FFh
4Byte	Parameter2	Data	: 00~FFh
5Byte	Parameter3	Data	: 00~FFh
6Byte	ETX	End Of Command	: AFh

4.2 Return Packet Format

1Byte	STX	Start Of Command : A0h		
2Byte	Command	Command : 00~ FFh		
3Byte	Parameter1	Data : 00~FFh		
4Byte	Parameter2	Data : 00~FFh		
5Byte	Status	<Bit>	<Contents>	
		7	(0)	
		6	Iris	Moving Status (1)/(0)Stop Status
		5	Zoom	Moving Status (1)/(0)Stop Status
		4	Focus	Moving Status (1)/(0)Stop Status
		3	(0)	
		2	(0)	
		1	Communication Response 0=ACK/1=NAK/2=IGNORE/3=Not Used	
		0	Communication Response	
6Byte	ETX	End Of Command : AFh		
Communication Response		Bit1	Bit0	Status
ACK		0	0	Capable Of Normal End Or Normal Operation

NAK	0	1	Detecting Errors In Command Packet(STX, ETX Byte)
			Parity Error ,Framing Error, Overrun Error
			Data in out of specified range
IGNORE	1	0	Cannot execute the transmitted command for other operations
			Unsupported command
Not Used	1	1	

5. Send Packet

Item		Function	PC AP to the Master command format						Comment
			1B	2B	3B	4B	5B	6B	
1	SET	Power	A0h	B1h	P1	00h	00h	AFh	P1=00 : standby 01 : power up IR -> Power
2		Rotate	A0h	B4h	P1	00h	00h	AFh	P1=00 : 0 degree 01 : 180 degree 02 : Flip 03 : Mirror 04 : 90 degree 05 : 270 degree OSD -> Rotate
3		Freeze	A0h	2Ch	P1	00h	00h	AFh	P1=00 : OFF 01 : ON IR -> Freeze
4		Playback	A0h	B3h	00h	00h	00h	AFh	IR -> Playback
5		PIP	A0h	B3h	01h	00h	00h	AFh	IR -> PIP
6		Pan	A0h	26h	P1	00h	00h	AFh	P1=00 : OFF 01 : ON IR -> Pan
7		Record	A0h	B2h	01h	00h	00h	AFh	IR -> Record
8		Capture / Delete	A0h	B2h	00h	00h	00h	AFh	IR -> Capture / Delect
9		Auto Tune	A0h	22h	00h	00h	00h	AFh	OSD -> Auto Tune
10		AWB one push	A0h	22h	01h	00h	00h	AFh	OSD -> Auto White Balance
11		AF one push	A0h	A3h	01h	00h	00h	AFh	HW -> AF Key
12		Mask / Spotlight	A0h	27h	P1	00h	00h	AFh	P1=0 : disable 1 : mask 2 : spotlight OSD -> Mask OSD -> Spotlight
13		Zoom Limit	A0h	40h	P1	00h	00h	AFh	P1=02 : 40x (lens 10x * dzoom 4x) 03 : 100x (lens 10x * dzoom 10x) 04 : 300x (lens 10x * dzoom 30x) OSD -> Zoom Limit

Item		Function	PC AP to the Master command format						Comment
			1B	2B	3B	4B	5B	6B	
14	SET	Zoom Direct Step	A0h	13h	P1	P2	00h	AFh	P1=low byte 0 - (215 +127) P2=high byte 0 - (215 +127) lens zoom = 347 sensor + digital zoom = 88
15		Zoom Step	A0h	12h	P1	P2	00h	AFh	P1=00 : -A, follow IR behavior 01 : +A, follow IR behavior P2= step unit : 0 - 255
16		Zoom Start	A0h	11h	P1	00h	00h	AFh	P1=tele : 0x20 - 0x27 are available wide : 0x30 - 0x37 are available stop : 0x00 OSD -> Zoom
17		Brightness Direct	A0h	30h	P1	P2	P3	AFh	P1= 00 : ae OFF 01 : ae ON P2=low byte ae OFF : 0 - 297 ae ON : 0 - 18 P3=high byte ae OFF : 0 - 297 ae ON : 0 - 18 OSD -> Brightness
18		Brightness Step	A0h	39h	P1	00h	00h	AFh	P1=00 : -A, follow IR behavior 01 : +A, follow IR behavior OSD -> Brightness
19		Focus Start	A0h	1Ah	P1	00h	00h	AFh	P1=far : 0x20 - 0x27 are available near : 0x30 - 0x37 are available stop : 0x00 OSD -> Manual Focus
20		Focus Direct	A0h	1Bh	P1	P2	00h	AFh	P1=low byte (full range 0 - 1551) P2= high byte (full range 0 - 1551)
21		Focus Step	A0h	1Ch	P1	00h	00h	AFh	P1=00 : -A, follow IR behavior 01 : +A, follow IR behavior
22		Image Mode	A0h	A9h	P1	00h	00h	AFh	P1=00 : normal 01 : film 02 : slide

Item		Function	PC AP to the Master command format						Comment
			1B	2B	3B	4B	5B	6B	
									OSD -> Mode
23	SET	Photo / Text	A0h	A7h	P1	00h	00h	AFh	P1=00 : photo 01 : text 02 : gray OSD -> Photo / Text
24		Slide Show	A0h	04h	P1	00h	00h	AFh	P1=00 : OFF 01 : ON OSD -> Slide Show
25		Menu	A0h	A0h	06h	00h	00h	AFh	IR -> Menu
26		Up	A0h	A0h	02h	00h	00h	AFh	IR -> Up
27		Down	A0h	A0h	03h	00h	00h	AFh	IR -> Down
28		Left	A0h	A0h	04h	00h	00h	AFh	IR -> Left
29		Right	A0h	A0h	05h	00h	00h	AFh	IR -> Right
30		Enter	A0h	A0h	01h	00h	00h	AFh	IR -> Enter
31		Preset Load	A0h	03h	00h	00h	P1	AFh	P1= 1 -8 : group index OSD -> Preset Load
32		Preset Save	A0h	03h	00h	01h	P1	AFh	P1= 1 -8 : group index OSD -> Preset Save
33		Factory Reset	A0h	03h	01h	00h	00h	AFh	OSD -> Factory Reset
34		Audio Levels	A0h	D4h	P1	00h	00h	AFh	P1=0 - 10 OSD -> Audio Levels
35		Audio Out Volume	A0h	D6h	P1	00h	00h	AFh	P1=0 - 31 OSD -> Audio Out Volume
1	GET	Call Power	A0h	B7h	00h	00h	00h	AFh	P2= 00 : standby 01 : power up
2		Call Lamp	A0h	50h	00h	00h	00h	AFh	P1=00 : Lacer OFF 02 : Lacer ON
3		Call Rotate	A0h	77h	00h	00h	00h	AFh	P1=00 : 0 degree 01 : 180 degree 02 : Flip 03 : Mirror 04 : 90 degree 05 : 270 degree

Item		Function	PC AP to the Master command format						Comment
			1B	2B	3B	4B	5B	6B	
4		Call Freeze	A0h	78h	00h	00h	00h	AFh	P1=00 : OFF 01 : ON
5	GET	Call Image Mode	A0h	7Ah	00h	00h	00h	AFh	P1=00 : normal 01 : film 02 : slide
6		Call Photo / Text	A0h	51h	00h	00h	00h	AFh	P1=00 : photo 01 : text 02 : gray
7		Call Zoom Limit	A0h	61h	00h	00h	00h	AFh	P1=02 : 40x (lens 10x * dzoom 4x) 03 : 100x (lens 10x * dzoom 10x) 04 : 300x (lens 10x * dzoom 30x)
8		Call Zoom	A0h	8Ah	00h	00h	00h	AFh	P1=0 - (215+127) lens zoom = 347 sensor + digital zoom = 88
9		Call Auto Exposure	A0h	46h	00h	00h	00h	AFh	P1=00 : ae OFF 01 : ae ON
10		Call Brightness	A0h	89h	00h	00h	00h	AFh	P1=low byte ae OFF : 0 - 297 ae ON : 0 - 18 P2= high byte ae OFF : 0 - 297 ae ON : 0 - 18
11		Call Focus	A0h	64h	00h	00h	00h	AFh	P1=low byte (full range 0 - 1551) P2=high byte (full range 0 - 1551)
12		Call Audio Levels	A0h	D5h	00h	00h	00h	AFh	P1=0 - 10
13		Call Audio Out Volume	A0h	D7h	00h	00h	00h	AFh	P1=0 - 31

6. Return Packet

Item		Function	PC AP to the Master command format						Comment
			1B	2B	3B	4B	5B	6B	
1	SET	Power	A0h	B1h	P1	00h	St.	AFh	P1=00 : standby 01 : power up IR -> Power
2		Rotate	A0h	B4h	P1	00h	St.	AFh	P1=00 : 0 degree 01 : 180 degree 02 : Flip 03 : Mirror 04 : 90 degree 05 : 270 degree OSD -> Rotate
3		Freeze	A0h	2Ch	P1	00h	St.	AFh	P1=00 : OFF 01 : ON IR -> Freeze
4		Playback	A0h	B3h	00	00h	St.	AFh	IR -> Playback
5		PIP	A0h	B3h	01h	00h	St.	AFh	IR -> PIP
6		Pan	A0h	26h	P1	00h	St.	AFh	P1=00 : OFF 01 : ON IR -> Pan
7		Record	A0h	B2h	01h	00h	St.	AFh	IR -> Record
8		Capture / Delete	A0h	B2h	00h	00h	St.	AFh	IR -> Capture / Delect
9		Auto Tune	A0h	22h	00h	00h	St.	AFh	OSD -> Auto Tune
10		AWB one push	A0h	22h	01h	00h	St.	AFh	OSD -> Auto White Balance
11		AF one push	A0h	A3h	01h	00h	St.	AFh	HW -> AF Key
12		Mask / Spotlight	A0h	27h	P1	00h	St.	AFh	P1=0 : disable 1 : mask 2 : spotlight
13		Zoom Limit	A0h	40h	P1	00h	St.	AFh	P1=02 : 40x (lens 10x * dzoom 4x) 03 : 100x (lens 10x * dzoom 10x) 04 : 300x (lens 10x * dzoom 30x) OSD -> Zoom Limit
14		Zoom Direct Step	A0h	13h	P1	P2	St.	AFh	P1=low byte 0 - (215 +127) P2=high byte

Item		Function	PC AP to the Master command format						Comment
			1B	2B	3B	4B	5B	6B	
									0 - (215 +127) lens zoom = 347 sensor + digital zoom = 88
15	SET	Zoom Step	A0h	12h	P1	P2	St.	AFh	P1=00 : -A, follow IR behavior 01 : +A, follow IR behavior P2= step unit : 0 - 255
16		Zoom Start	A0h	11h	P1	00h	St.	AFh	P1=tele : 0x20 - 0x27 are available wide : 0x30 - 0x37 are available stop : 0x00 OSD -> Zoom
17		Brightness Direct	A0h	30h	P1	P2	St.	AFh	P1= 00 : ae OFF 01 : ae ON P2=low byte ae OFF : 0 - 297 ae ON : 0 - 18 P3=high byte ae OFF : 0 - 297 ae ON : 0 - 18 OSD -> Brightness
18		Brightness Step	A0h	39h	P1	00h	St.	AFh	P1=00 : -A, follow IR behavior 01 : +A, follow IR behavior OSD -> Brightness
19		Focus Start	A0h	1Ah	P1	00h	St.	AFh	P1=far : 0x20 - 0x27 are available near : 0x30 - 0x37 are available stop : 0x00 OSD -> Manual Focus
20		Focus Direct	A0h	1Bh	P1	P2	St.	AFh	P1=low byte (full range 0 - 1551) P2= high byte (full range 0 - 1551)
21		Focus Step	A0h	1Ch	P1	00h	St.	AFh	P1=00 : -A, follow IR behavior 01 : +A, follow IR behavior
22		Image Mode	A0h	A9h	P1	00h	St.	AFh	P1=00 : normal 01 : film 02 : slide OSD -> Mode
23		Photo / Text	A0h	A7h	P1	00h	St.	AFh	P1=00 : photo 01 : text

Item		Function	PC AP to the Master command format						Comment
			1B	2B	3B	4B	5B	6B	
									02 : gray OSD -> Photo / Text
24	SET	Slide Show	A0h	04h	P1	00h	St.	AFh	P1=00 : OFF 01 : ON OSD -> Slide Show
25		Menu	A0h	A0h	06h	00h	St.	AFh	IR -> Menu
26		Up	A0h	A0h	02h	00h	St.	AFh	IR -> Up
27		Down	A0h	A0h	03h	00h	St.	AFh	IR -> Down
28		Left	A0h	A0h	04h	00h	St.	AFh	IR -> Left
29		Right	A0h	A0h	05h	00h	St.	AFh	IR -> Right
30		Enter	A0h	A0h	01h	00h	St.	AFh	IR -> Enter
31		Preset Load	A0h	03h	00h	00h	St.	AFh	OSD -> Preset Load
32		Preset Save	A0h	03h	00h	01h	St.	AFh	OSD -> Preset Save
33		Factory Reset	A0h	03h	01h	00h	St.	AFh	OSD -> Factory Reset
34		Audio Levels	A0h	D4h	P1	00h	St.	AFh	P1=0 - 10 OSD -> Audio Levels
35		Audio Out Volume	A0h	D6h	P1	00h	St.	AFh	P1=0 - 31 OSD -> Audio Out Volume
1	GET	Call Power	A0h	B7h	01h	P2	St.	AFh	P2= 00 : standby 01 : power up
2		Call Lamp	A0h	50h	P1	00h	St.	AFh	P1=00 : Lacer OFF 02 : Lacer ON
3		Call Rotate	A0h	77h	P1	00h	St.	AFh	P1=00 : 0 degree 01 : 180 degree 02 : Flip 03 : Mirror 04 : 90 degree 05 : 270 degree
4		Call Freeze	A0h	78h	P1	00h	St.	AFh	P1=00 : OFF 01 : ON
5		Call Image Mode	A0h	7Ah	P1	00h	St.	AFh	P1=00 : normal 01 : film 02 : slide

RS157- CL511 command set

Item		Function	PC AP to the Master command format						Comment
			1B	2B	3B	4B	5B	6B	
5	GET	Call Photo / Text	A0h	51h	P1	00h	St.	AFh	P1=00 : photo 01 : text 02 : gray
7		Call Zoom Limit	A0h	61h	P1	00h	St.	AFh	P1=02 : 40x (lens 10x * dzoom 4x) 03 : 100x (lens 10x * dzoom 10x) 04 : 300x (lens 10x * dzoom 30x)
8		Call Zoom	A0h	8Ah	P1	00h	St.	AFh	P1=0 - (215+127) lens zoom = 347 sensor + digital zoom = 88
9		Call Auto Exposure	A0h	46h	P1	00h	St.	AFh	P1=00 : ae OFF 01 : ae ON
10		Call Brightness	A0h	89h	P1	P2	St.	AFh	P1=low byte ae OFF : 0 - 297 ae ON : 0 - 18 P2= high byte ae OFF : 0 - 297 ae ON : 0 - 18
11		Call Focus	A0h	64h	P1	P2	St.	AFh	P1=low byte (full range 0 - 1551) P2=high byte (full range 0 - 1551)
12		Call Audio Levels	A0h	D5h	P1	00h	St.	AFh	P1=0 - 10
13		Call Audio Out Volume	A0h	D7h	P1	00h	St.	AFh	P1=0 - 31

** St : 0 =Action Succeed, 1= NAK (No Action), 2 = Ignore (Command is not in the command list.)