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We want to thank our customers who use the Touch Operation Panel.

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Select a TOP model and an external device.
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Describes how to set the TOP communication.
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Describes the cable specifications required for connection.
- 5. Supported addresses** [Page 10](#)

Refer to this section to check the addresses which can communicate with an external device.

# 1. System configuration

The system configuration of TOP and "PELCO: CAMERA" is as follows:

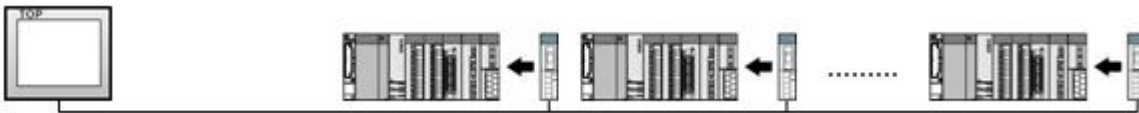
Series	Module	Link I/F	Communication method	System setting	Cable
PELCO: CAMERA	-	-	RS-232C RS-422,485	<a href="#">3.1 Settings example 1</a>	<a href="#">4.1. Cable table 1</a>

## ■ Connection configuration

- 1:1 connection (one MASTER and one TOP) connection

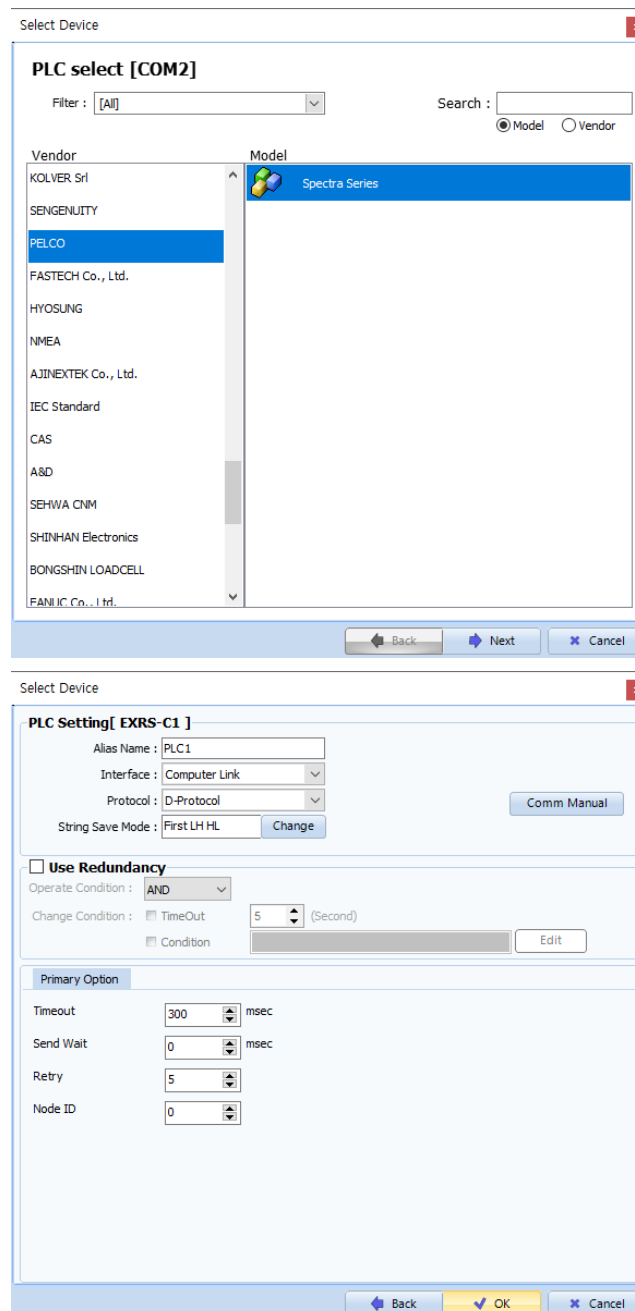


- 1:N (one TOP and multiple external devices) connection – configuration which is possible in RS422/485 communication.



## 2. External device selection

- Select a TOP model and a port, and then select an external device.



Settings		Contents					
TOP	Model	Check the TOP display and process to select the touch model.					
External device	Vendor	Select the vendor of the external device to be connected to TOP. Select "PELCO".					
	PLC	Select an external device to connect to TOP. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Model</th> <th>Interface</th> <th>Protocol</th> </tr> </thead> <tbody> <tr> <td>CAMERA</td> <td>Computer Link</td> <td>D-Protocol</td> </tr> </tbody> </table> <p>Please check the system configuration in Chapter 1 to see if the external device you want to connect is a model whose system can be configured.</p>	Model	Interface	Protocol	CAMERA	Computer Link
Model	Interface	Protocol					
CAMERA	Computer Link	D-Protocol					

### 3. TOP communication setting

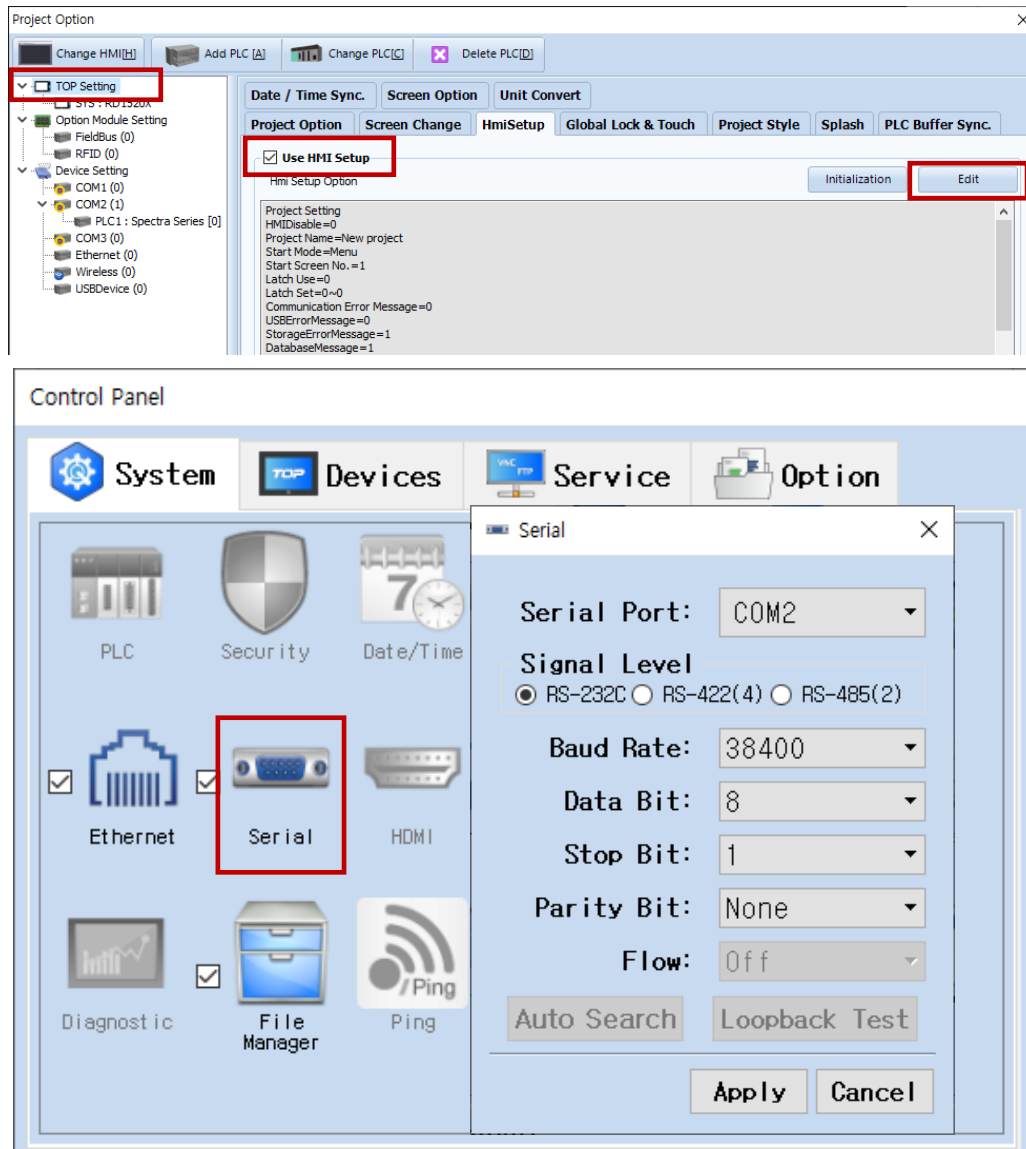
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

#### 3.1 Communication setting in TOP Design Studio

##### (1) Communication interface setting

■ [Project > Project Property > TOP Setting] → [Project Option > "Use HMI Setup" Check > Edit > Serial]

– Set the TOP communication interface in TOP Design Studio.



Items	TOP	External device	Remarks
Signal Level (port)	RS-485 (COM1/COM2)	RS-485	
Baud Rate	38400		
Data Bit	8		
Stop Bit	1		
Parity Bit	NONE		

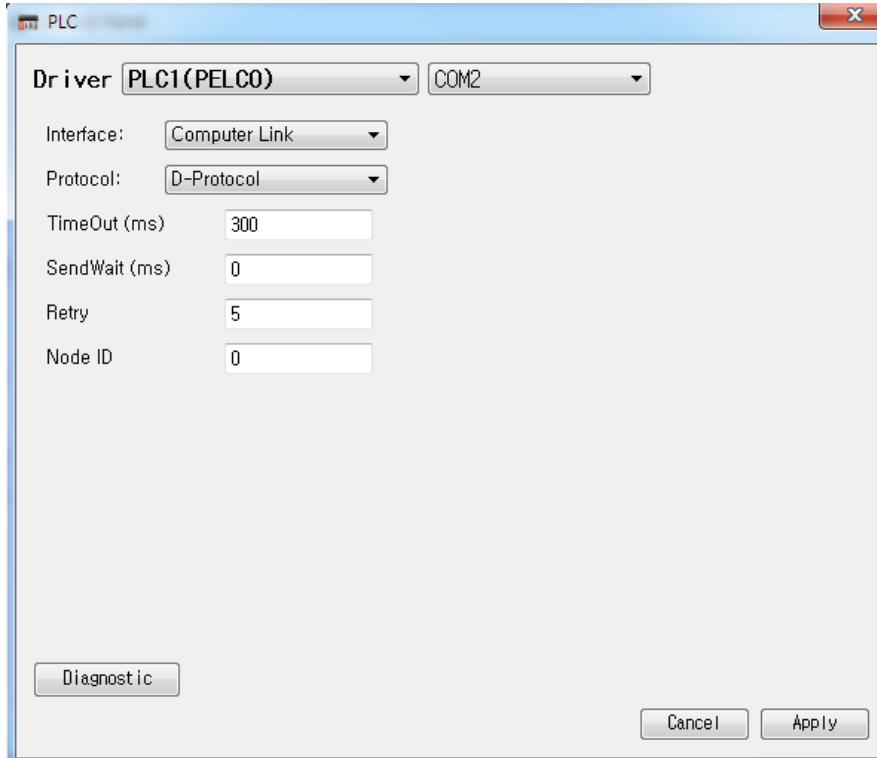
\* The above settings are examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.

**(2) Communication option setting**

- [Project > Project Property > Device Setting > COM > "PLC1 : PELCO : CAMERA]

Set the options of the communication driver in TOP Design Studio.



Items	Settings	Remarks
Interface	Select "Computer Link".	<a href="#">Refer to "2. External device selection"</a> .
Protocol	Select the communication protocol between the TOP and an external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	
Retry	Retry attempts	
Node ID	Device number	

### 3.2. Communication setting in TOP

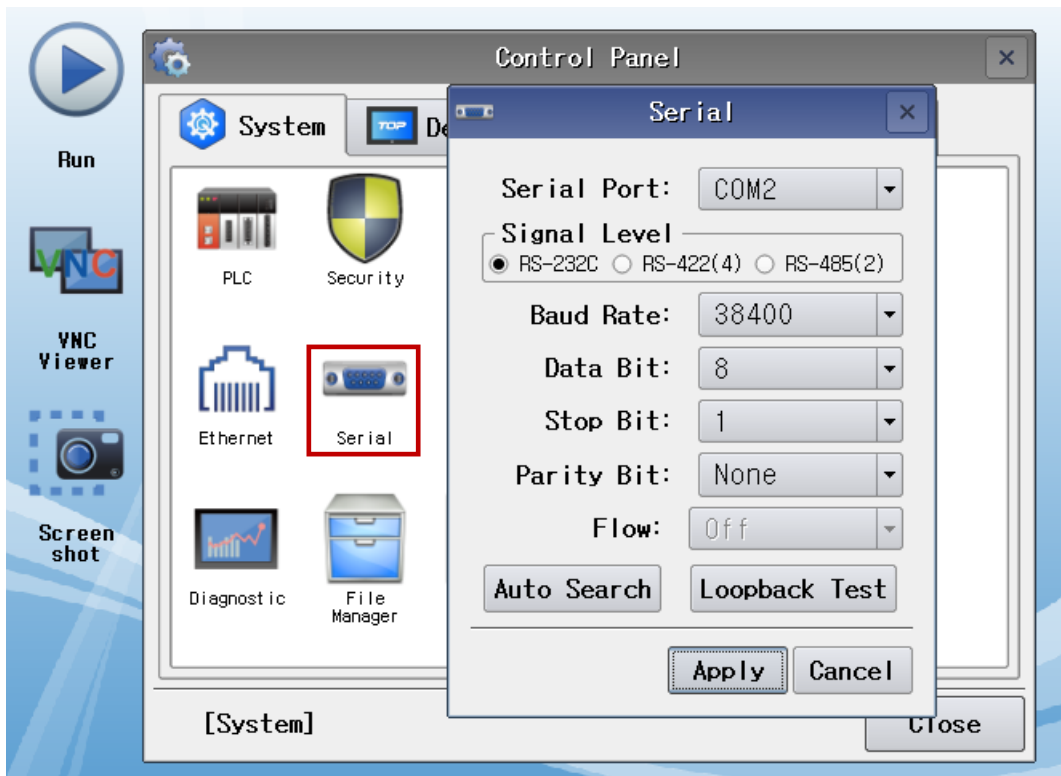
\* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



#### (1) Communication interface setting

- [Main Screen > Control Panel > Serial]



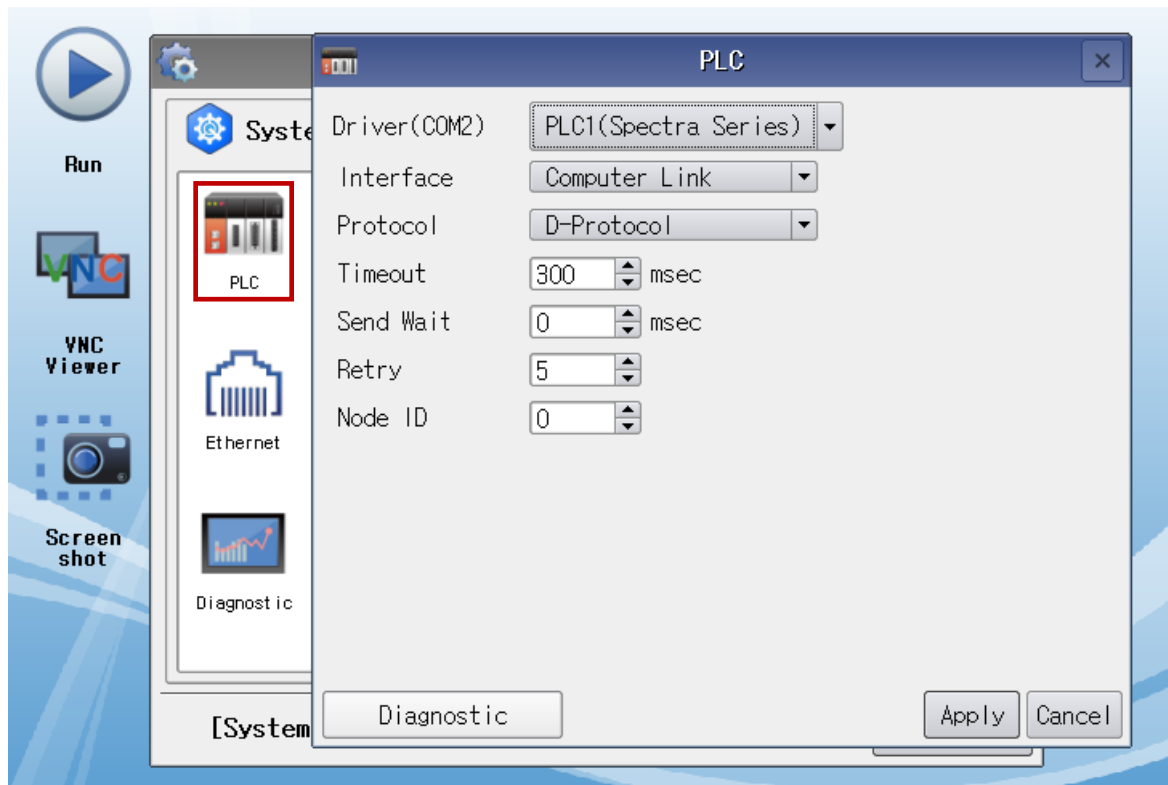
Items	TOP	External device	Remarks
Signal Level (port)	RS-485	RS-485	
Baud Rate		38400	
Data Bit		8	
Stop Bit		1	
Parity Bit		none	

\* The above settings are setting examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.

(2) Communication option setting

■ [Main Screen > Control Panel > PLC]



Items	Settings	Remarks
Interface	Select "Computer Link".	<a href="#">Refer to "2. External device selection".</a>
Protocol	Select the communication protocol between the TOP and an external device.	<a href="#">Refer to "2. External device selection".</a>
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	
Retry	Retry attempts	
Node ID	Device number	

### 3.3 Communication diagnostics

- Check the interface setting status between the TOP and an external device.
  - Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
  - Check if the COM port settings you want to use in [Control Panel > Serial] are the same as those of the external device.
  
- Diagnosis of whether the port communication is normal or not
  - Touch "Communication diagnostics" in [Control Panel > PLC].
  - The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

<b>OK</b>	<b>Communication setting normal</b>
<b>Time Out Error</b>	<b>Communication setting abnormal</b> - Check the cable, TOP, and external device setting status. <b>(Reference: Communication diagnostics sheet)</b>

- Communication diagnostics sheet
  - If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

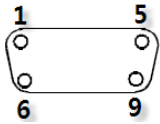
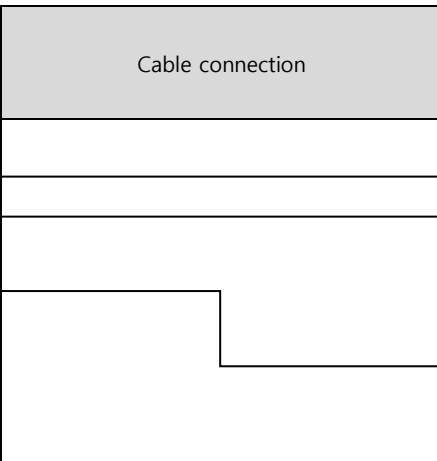
Items	Contents	Check		Remarks	
System configuration	How to connect the system	OK	NG	<a href="#">1. System configuration</a>	
	Connection cable name	OK	NG		
TOP	Version information	OK	NG	<a href="#">2. External device selection</a> <a href="#">3. Communication setting</a>	
	Port in use	OK	NG		
	Driver name	OK	NG		
	Other detailed settings	OK	NG		
	Relative prefix	Project setting	OK		NG
		Communication diagnostics	OK		NG
	Serial Parameter	Transmission Speed	OK		NG
Data Bit		OK	NG		
Stop Bit		OK	NG		
Parity Bit		OK	NG		
External device	CPU name	OK	NG	<a href="#">5. Supported addresses</a> (For details, please refer to the PLC vendor's manual.)	
	Communication port name (module name)	OK	NG		
	Protocol (mode)	OK	NG		
	Setup Prefix	OK	NG		
	Other detailed settings	OK	NG		
	Serial Parameter	Transmission Speed	OK		NG
		Data Bit	OK		NG
		Stop Bit	OK		NG
Parity Bit		OK	NG		
Check address range	OK	NG			



## 4. Cable table

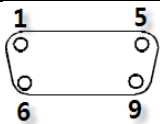
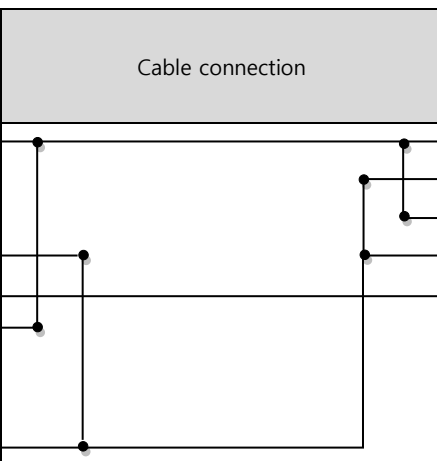
This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device.  
(The cable diagram described in this section may differ from the recommendations of "PELCO CAMERA")

### ■ RS-232C (1:1 connection)

TOP			Cable connection	External device	
Pin arrangement* <b>Note 1</b>	Signal name	Pin number		Signal name	
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	CD	1			
	RD	2		SD	
	SD	3		RD	
	DTR	4			
	SG	5			
	DSR	6			
	RTS	7		SG	
	CTS	8			
		9			

\***Note 1**) The pin arrangement is as seen from the connecting side of the cable connection connector.

### ■ RS-485 (1:1 connection)

TOP			Cable connection	External device	
Pin arrangement* <b>Note 1</b>	Signal name	Pin number		Signal name	
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	RDA(+)	1		SDA(+)	
		2		SDB(-)	
		3		RDA(+)	
	RDB(-)	4		RDB(-)	
	SG	5		SG	
	SDA(+)	6			
		7			
		8			
	SDB(-)	9			

\***Note 1**) The pin arrangement is as seen from the connecting side of the cable connection connector.

### ■ RS-422 (1:N connection) – Refer to 1:1 connection to connect in the following way.

TOP	Cable connection and signal direction	External device	Cable connection and signal direction	External device
Signal name		Signal name		Signal name
RDA(+)	→	SDA(+)	←	SDA(+)
RDB(-)	→	SDB(-)	←	SDB(-)
SDA(+)	→	RDA(+)	←	RDA(+)
SDB(-)	→	RDB(-)	←	RDB(-)
SG	→	SG	←	SG

### ■ RS-485 (1:N/N:1 connection) – Refer to 1:1 connection to connect in the following way.

TOP	Cable connection and signal direction	External device	Cable connection and signal direction	External device
Signal name		Signal name		Signal name
RDA(+)	→	SDA(+)	←	SDA(+)
RDB(-)	→	SDB(-)	←	SDB(-)
SDA(+)	→	RDA(+)	←	RDA(+)
SDB(-)	→	RDB(-)	←	RDB(-)
SG	→	SG	←	SG

## 5. Supported addresses

The devices available in TOP are as follows:

For more details on **PELCO CAMERA**, refer to the user manual.

Command	Bit address range	Word address range	R/W	Device description
<b>STANDARD COMMAND</b>				
UP	0	0	W	Camera up
DOWN	0	0	W	Camera down
LEFT	0	0	W	Camera left
RIGHT	0	0	W	Camera right
UPLIFT	0	0	W	Camera up,left
UPRIGHT	0	0	W	Camera up,right
DOWNLEFT	0	0	W	Camera down,left
DOWNRIGHT	0	0	W	Camera down,right
ZOOMIN	0	0	W	Camera zoomin
ZOOMOUT	0	0	W	Camera zoomout
FOCUSFAR	0	0	W	Camera focus far
FOCUSNEAR	0	0	W	Camera focus near
STOP	0	0	W	Camera stop
OPEN	0	0	W	Camera open
CLOSE	0	0	W	Camera close
ON	0	0	W	Camera on
OFF	0	0	W	Camera off
PANSPEED	0	0	R/W	Camera pan speed
TILTSPEED	0	0	R/W	Camera Tilt speed
<b>We recommend using a command that supports the EXTENDED COMMAND (general response)</b>				
RUN	0	0	W	<b>User command</b>
COMMAND1	0	0	R/W	<b>Create a desired command to use (not used regularly)</b>
COMMAND2	0	0	R/W	<b>Create a desired command to use (not used regularly)</b>
DATA1	0	0	R/W	<b>Create a desired value to use (not used regularly)</b>
DATA2	0	0	R/W	<b>Create a desired value to use (not used regularly)</b>