How to incorporate protocol of commands for PTZ camera into DVMR unit.

Before you connect PTZ camera or Speed Dome camera to our DVMR unit, be sure to check the model of camera you are using and determine if its PTZ control protocol is already incorporated into our DVMR unit (like PELCO-D or HMC-250).
If it is not, you have to input protocols of commands for the camera into our DVMR, in the USER DEFINE SETUP of PANTILT SETUP to control as you want.

Because protocol of each command for PTZ camera is very unique and difficult to understand for users, we recommend our users to ask system integrator or PTZ camera supplier to fill protocol of each command (HEX codes values) for PTZ camera in the following form.

After you get completed protocol form from system integrator or PTZ camera supplier, you can by yourself input protocols in SEPUP menu of our DVMR as per following instructions.
This manual just explain you how to input protocols of commands for PTZ camera into our DVMR unit, and does not tell you how to calculate HEX codes value(protocol) for each commands. Therefore, you have to ask system integrator or PTZ camera supplier to fill protocol form and have completed one on your hands before you by yourself enter protocols into our DVMR.

1. Completed protocol form

LEN : Indicates Bytes of each command

Example   9 Byte(for example)

Supported	Commands	1	2	3	4	5	6	7	8	9	10	…….	30
O	FOCUS FAR	0xF0	0x00	0x00	0x00	0x08	0x00	0x00	0x00	0x79			
O	FOCUS NEAR	0xF0	0x00	0x00	0x00	0x04	0x00	0x00	0x00	0x75			
O	FOCUS AUTO	0xF0	0x00	0x00	0x00	0x03	0x00	0x00	0x00	0x74			
O	PAN RIGHT	0xF0	0x00	0x00	0x00	0x00	0x8A	0x00	0x00	0x7B			
O	PAN LEFT	0xF0	0x00	0x00	0x00	0x00	0x64	0x00	0x00	0x55			
O	TILT UP	0xF0	0x00	0x00	0x00	0x00	0x00	0xE4	0x00	0x55			
O	TILT DOWN	0xF0	0x00	0x00	0x00	0x00	0x00	0x32	0x00	0x23			
O	ZOOM IN	0xF0	0x00	0x00	0x00	0x00	0x00	0x00	0xD0	0x41			
O	ZOOM OUT	0xF0	0x00	0x00	0x00	0x00	0x00	0x00	0x14	0x05			
O	AUTO PAN	0xF0	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00			

Protocol in above form is just for an example to explain how to input.

2. How to input protocols of commands for PTZ camera by yourself

1) PANTILT CMD SETUP

When completed protocol form is on your hand, you are ready for inputting protocols by yourself.

a) Press [MENU] button.
b) Select MISCELLANEOUS SETUP and press [ENTER] button.
c) Select PANTILT CMD SETUP and press [ENTER] button.
d) Select USER DEFINE SETUP and press [ENTER] button.
e) Now you will see following screen is displayed.

PANTILT COMMAND SETUP

CMD TYPE   :   FOCUS FAR   ON

CH   :   01   LEN   :   11

NO	:	HEX	NO	:	HEX	NO	:	HEX
01	:		11	:		21	:	
02	:		12	:		22	:	
03	:		13	:		23	:	
04	:		14	:		24	:	
05	:		15	:		25	:	
06	:		16	:		26	:	
07	:		17	:		27	:	
08	:		18	:		28	:	
09	:		19	:		29	:	
10	:		20	:		30	:	

f) Input first protocol for "FOCUS FAR" command(based on above example)

> Indicates type of PTZ protocol, from 1 to 4, and it means we can input up to 4 different types of protocol. In case you are going to connect more than one PTZ cameras with same protocol type(4 same models), you have to input protocol with different camera ID 4 times, from 1 to 4.

PANTILT COMMAND SETUP

CMD TYPE : FOCUS FAR ON

CH : 02 LEN : 9

NO	:	HEX	NO	:	HEX	NO	:	HEX
01	:	F0	11	:		21	:	
02	:	01	12	:		22	:	
03	:	00	13	:		23	:	
04	:	00	14	:		24	:	
05	:	08	15	:		25	:	
06	:	00	16	:		26	:	
07	:	00	17	:		27	:	
08	:	00	18	:		28	:	
09	:	79	19	:		29	:	
10	:		20	:		30	:	

Supported	Commands	1	2	3	4	5	6	7	8	9	10	…….	30
O	FOCUS FAR	0xF0	0x01	0x00	0x00	0x08	0x00	0x00	0x00	0x79			
O	FOCUS NEAR	0xF0	0x01	0x00	0x00	0x04	0x00	0x00	0x00	0x75			
O	FOCUS AUTO	0xF0	0x01	0x00	0x00	0x03	0x00	0x00	0x00	0x74			
O	PAN RIGHT	0xF0	0x01	0x00	0x00	0x00	0x8A	0x00	0x00	0x7B			
O	PAN LEFT	0xF0	0x01	0x00	0x00	0x00	0x64	0x00	0x00	0x55			
O	TILT UP	0xF0	0x01	0x00	0x00	0x00	0x00	0xE4	0x00	0x55			
O	TILT DOWN	0xF0	0x01	0x00	0x00	0x00	0x00	0x32	0x00	0x23			
O	ZOOM IN	0xF0	0x01	0x00	0x00	0x00	0x00	0x00	0xD0	0x41			
O	ZOOM OUT	0xF0	0x01	0x00	0x00	0x00	0x00	0x00	0x14	0x05			
O	AUTO PAN	0xF0	0x01	0x00	0x00	0x00	0x00	0x00	0x00	0x00			

f) Input next protocols one by one

Move to item for change by pressing [UP] or [DOWN] buttons on the right side of front panel, and set value by pressing [LEFT](decrease) or [RIGHT](increase) buttons on the right side of front panel.

It is not difficult work, but we ask you to be patient and careful not to make mistakes until you finish to input all values.

g) Input last protocol for "AUTO PAN" command

PANTILT COMMAND SETUP

CMD TYPE   :   **AUTO PAN**   ON

CH   : 02   LEN : 9

NO	:	HEX	NO	:	HEX	NO	:	HEX
01	:	F0	11	:		21	:	
02	:	01	12	:		22	:	
03	:	00	13	:		23	:	
04	:	00	14	:		24	:	
05	:	00	15	:		25	:	
06	:	00	16	:		26	:	
07	:	00	17	:		27	:	
08	:	00	18	:		28	:	
09	:	00	19	:		29	:	
10	:		20	:		30	:	

Supported	Commands	1	2	3	4	5	6	7	8	9	10	…….	30
O	FOCUS FAR	0xF0	0x01	0x00	0x00	0x08	0x00	0x00	0x00	0x79			
O	FOCUS NEAR	0xF0	0x01	0x00	0x00	0x04	0x00	0x00	0x00	0x75			
O	FOCUS AUTO	0xF0	0x01	0x00	0x00	0x03	0x00	0x00	0x00	0x74			
O	PAN RIGHT	0xF0	0x01	0x00	0x00	0x00	0x8A	0x00	0x00	0x7B			
O	PAN LEFT	0xF0	0x01	0x00	0x00	0x00	0x64	0x00	0x00	0x55			
O	TILT UP	0xF0	0x01	0x00	0x00	0x00	0x00	0xE4	0x00	0x55			
O	TILT DOWN	0xF0	0x01	0x00	0x00	0x00	0x00	0x32	0x00	0x23			
O	ZOOM IN	0xF0	0x01	0x00	0x00	0x00	0x00	0x00	0xD0	0x41			
O	ZOOM OUT	0xF0	0x01	0x00	0x00	0x00	0x00	0x00	0x14	0x05			
O	AUTO PAN	0xF0	0x01	0x00	0x00	0x00	0x00	0x00	0x00	0x00			

h) You completed to input protocols for one model with ch #2.

If you are going to connect another model of PTZ camera, you have to continue as you did for ch # 2. You can connect up to 4 different PTZ cameras to our 4 channel DVMR unit, if you input protocols for 4 models with ch #1, ch #2, ch #3, and ch #4, respectively.

i) Now you are ready to control PTZ camera or Speed Dome camera by yourself while you see live pictures in front of DVMR unit and monitor.

3. How to control PTZ camera

1) After you completed to input protocols of commands for PTZ camera which you connected to our DVMR unit, you can control this PTZ camera while you wee live pictures in front of monitor.

2) To control PTZ camera,

a) Press [P/T] button.

Following message is displayed.

```
 CAM : 001      [MOVE   HOME]
 ▲▼  : CAM,    ◄   ►   : CMD,
 EXIT   : PRESS [P/T]
```

b) How to control

```
 CAM : 001      [MOVE   HOME]
 ▲▼  : CAM,    ◄  ►   : CMD,
 EXIT   : PRESS [P/T]
```

- **CAM : 001 :** Represents channel number, that is from ch #1 to ch #4, which you assigned when you input protocol in USER DEFINE in PANTILT CMD SETUP. Practically, it represent type of protocol(model of PTZ camera) you input, and does not mean actual channel number to which you connect PTZ camera. You can connect a specific PTZ camera to channel number 3, whose protocol type is input in USER DEFINE with

ch #4, for example. However, you have to select 004 to control the PTZ
camera, even though it is connected to channel number 3.

001 indicates ch #1, and 004 ch # 4.

Using ▲▼ button, select type of protocol(model of PTZ camera) .

Note : In case you connected PTZ camera whose protocol you already input by yourself
in USER DEFINE in PANTILT CMD SETUP, **CAM** number represent type
of protocol(model of PTZ camera).

Note : However, if you connect PTZ camera whose protocol is already incorporated by
DVMR supplier (DEFAULT camera like PELCO_D or HMC-250), **CAM**
number represent CAMERA ID.
In most of cases, CAMERA ID is set by DIP switch on PTZ camera, and
you have to be careful to set **CAM** number just same as CAMERA   ID.

- **[MOVE   HOME]** : Represents kinds of commands for PTZ camera
Using ◀ ▶ button, you can select commands you want to execute.
To execute, press [ENTER] button. While you press [ENTER] button, that
command is executing.

- To exit, press [P/T] button.