



BOSCH

BICOM PTZ Integration package

Technical Information



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1 Scope

This collection of selected BICOM commands gives a quick help for PTZ integration. There is no extended information provided on how to generally use Bosch BICOM.

2 Commands

2.1 Continuous Move

Bicom Object: 0x011.0
on the PTZ Server: 0x06

Turn left **where x is the speed** (15 speeds possible from 0x1-0xF)

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x8000060110850X0000
```

Example:

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x8000060110850F0000
```

Turn right **where x is the speed** (15 speeds possible from 0x1-0xF)

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x8000060110858X0000
```

Example:

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x8000060110858F0000
```

Go up **where x is the speed** (15 speeds possible from 0x1-0xF)

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x800006011085008X00
```

Example:

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x800006011085008F00
```

Go down **where x is the speed** (15 speeds possible from 0x1-0xF)

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x800006011085000X00
```

Example:

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x800006011085000F00
```

Zoom out **where x is the speed** (7 speeds possible from 0x1-0x7)

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x80000601108500000X
```

Example:

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x800006011085000007
```

Zoom in **where x is the speed** (7 speeds possible from 0x1-0x7)

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x800006011085000008X
```

Example:

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x8000060110850000087
```

Stop command for Pan, Tilt and Zoom

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x800006011085000000
```

2.2 Prepositions

Bicom Object: 0x2XX.0
on the PTZ Server: 0x06

The preposition indexing starts with 0 and thus preposition 1 is indexed with the value 0.

Set preposition X **where x is the present number** (256 presets are possible 0x00-0xFF)

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x8000062XX080
```

Example:

Set preposition 20 (preposition 20 is indexed with the value 19) [= 0x13]

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x800006213080
```

Show preposition X **where x is the present number** (256 presets possible 0x00-0xFF)

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x8000062XX081
```

Example:

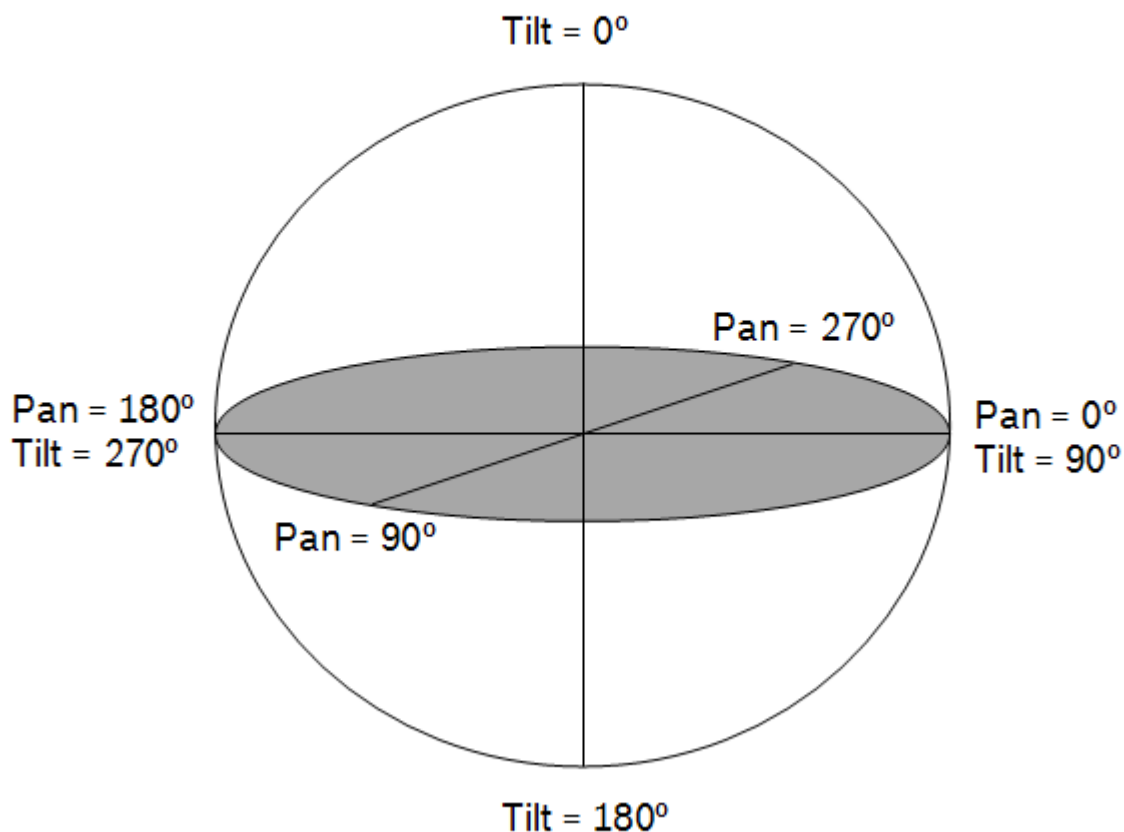
Show preposition 16 (index 15) [=0x0F]

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x80000620F081
```

2.3 Absolute Positioning

The following image is depicting the coordinate system for the absolute pan and tilt commands, described in this section.

Moving Cameras - Unified Coordinate System for JrHD, Gen5HD, Gen5SD



2.3.1 Absolute Positioning (single commands)

Pan and Tilt

Bicom Object: 0x01A.1 / 0x01A.2

on the PTZ Server: 0x06

Get the **PAN** value [degrees x 100]:

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601A101
```

Get the **TILT** value [degrees x 100]:

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601A201
```

Set the **PAN** where **x** is the PAN value [degrees x 100]

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601A103XXXX
```

Example:

In order to move the dome to a specific preposition you need to use payload 0x81000601A103xxxx with the pan angle x 100 value instead of xxxx.

Example to Pan 30° = 30 x 100 → 0x0BB8

```
http://160.10.52.100/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601A1030BB8
```

Set the **TILT** where x is the TILT value [degrees x 100]

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601A203XXXX
```

Example where Tilt is set to 90° = 90 x 100 → 0x2328

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601A2032328
```

Zoom

Bicom Object: 0x012.0

on the PTZ Server: 0x06

Get the **ZOOM** factor:

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x810006012001
```

Get the maximum **ZOOM** value:

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601200B
```

Please Note:

Current zoom can be in optical or digital zoom mode. A zoom value between 0x0000 and 0x4000 represents the optical zoom, values above 0x4000 represent a digital zoom factor.

Set the **ZOOM** to a certain factor where x is the magnification factor:

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x810006012003XXXX
```

Example to set digital **ZOOM** to factor 1.0

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x8100060120030000
```

2.3.2 Absolute Positioning (all in one)

The Bicom object **0x01D.1** on the PTZ server interface provides the possibility to position the camera in an absolute manner. This object allows the user to set Pan, Tilt, Zoom positions in the same command. User also has an option to ignore a particular position. E.g. user could only set Pan and Zoom positions. The GET operation gives the current Pan and Tilt positions in degrees x 100 and zoom position in ticks (payload is **red**). The object transmission is secured by a CRC value.

A typical command would look like below:

```
rcp.xml?command=0x09a5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601D101XXYYZZM0
```

where:

- **XX** is the PAN value in degrees x 100 (2bytes)
- **YY** is the TILT value in degrees x 100 (2bytes)
- **ZZ** is the ZOOM value in ticks (2bytes)
- **M** is the ignore mask (the mask can be set to 0x0 to enable all parameters) (1byte)
- **0** is a reserved byte (1byte)

Get the absolute position:

```
http://160.10.39.80/rcp.xml?command=0x09a5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601D101
```

Setting the absolute position to

- Pan 202.04 degree → 20204 (degree x 100) → **0x4EEC**
- Tilt: 23.34 degree → 2334 (degree x 100) → **0x091E**
- Zoom: 40 ticks → **0x0028**

Mask: 0 → **0x00**

Reserved: 0 → **0x00**

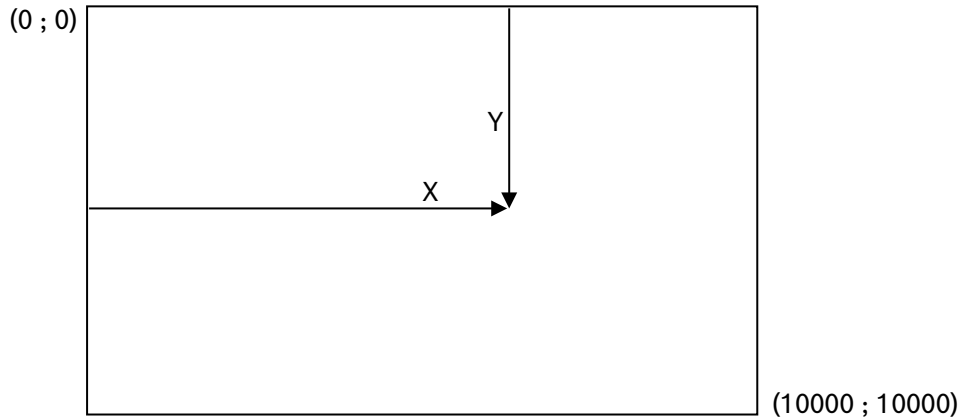
Set the absolute position:

```
http://160.10.39.80/rcp.xml?command=0x09a5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000601D1024EEC091E00280000
```

2.4 Center click and Area Zoom (FW 6.20 and above)

Bicom Object: 0x407.0 / 0x407.1
on the Camera Server: 0x04

The below coordinate system schema is used for the commands in this section



To **CENTER** the dome to an **X ; Y** coordinate where X and Y is normalized to (0 ; 0) and (10000 ; 10000)

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81
0006407102XXXXYYYY
```

Example to **CENTER** the dome to the normalized position 7500 ; 5000 [0x1D4C ; 0x1388]:

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81
00064071021D4C1388
```

ZOOM to an AREA with the coordinates **X ; Y** and **x ; y**:

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81
0006407002XXXXYYYYxxxxyyyy
```

Example to **ZOOM to an AREA** with the coordinates 100 ; 150 and 7500 ; 5000 [0x64 ; 0x96 and 0x1D4C ; 0x1388]:

```
http://160.10.39.80/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81
0006407002006400961D4C1388
```

*Please note that coordinates should be given from the top-left (X ; Y) corner to the bottom right corner (x ; y) of the area to **zoom in**.*

*Coordinates given from the bottom right corner (x ; y) to the top left corner (X ; Y) **will zoom out** relatively to the size of the area.*

2.5 Focus Control

Bicom Object: 0x01F.0
on the Camera Server: 0x04

Focus Mode

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000401F0030000x
```

0x0 = Spot

0x1 = Auto

Example set Focus to Auto

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000401F0030001
```

Get Mode of Focus

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000401F001
```

Get current Focus Position

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000401F101
```

Value: 0x00-0xFF

0x00 = max near | 0xFF = max far

2.6 Iris Control

Bicom Object: 0x01B.0
on the Camera Server: 0x04

Iris Mode

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x81000401B0030000x
```

0x0 = Auto | 0x1 = Manual

Example set Iris to Auto

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x80000401B003000
```

Get Iris-Mode

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x80000401B001
```

2.7 Alternate Home Position

Bicom Object: 0x015.1
on the PTZ Server: 0x06

Move to Home Position

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x810006015081
```

Please Note:

General availability with FW 7.20.

Alternate home position does not store focal length, it is always using wide angel.

Set Alternate Home

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x80006015102
```

Clear Alternate Home

```
http://192.168.1.116/rcp.xml?command=0x09A5&type=P_OCTET&direction=WRITE&num=1&payload=0x80006015182
```



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