

PROTOCOL of CONVERTIBLE CAMERA and PAN/TILT SYSTEM
Ver3.05(Apr. 27 2020)

AW-E300A/AW-E600/AW-E800/AW-E800A/AW-E350
AW-E650/AW-E655/AW-E750/AW-E860/AW-HE100
AK-HC1500/AK-HC1800/AW-HE870
AW-PH100/AW-PH300A/AW-PH500/AW-PH600/AW-PH350
AW-PH400(with AW-RP400/IF400)/AW-PH360/AW-PH650/AW-PH405
AW-HE130/AW-HE60/AW-HE120/AW-HE50
AW-HE40/AW-HE65/AW-HE70/AW-UE70AW-HE42/AW-HE68/AW-HE75
AK-UB300/AW-HR140/AW-UE150/UE155/UN145

Specifications are subject to change without notice.

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Camera Control Protocol

This is a program to control Panasonic Convertible Camera system from PC by serial communication.

| | |
|---------------------|-------------|
| Method | Half Duplex |
| Communication Speed | 9600bps |
| Data bit | 8bit |
| Stop bit | 1bit |
| Prity | None |
| Flow contorol | None |

(Electrical Specification)

Compatible with RS422
2line system(TXD/send, RXD/Recieve)

(Process)

- (1) PC — Command —> CAMERA
- (2) CAMERA — ACK(H'06) —> PC
- (3) CAMERA Processes "Command"
- (4) CAMERA — Command' —> PC

Normally it is processed as mentioned above,but in case of error,it ends by replying error code(*1) in (4).

Command and Command' are not always the same.

Camera does not accept a command unless command process finishes and returns the return code

(*1)Error code

| Item | Error code | Contents |
|--------------|-------------------|--|
| Unsupported | [STX]ER1:***[ETX] | The Command is not supported by CAMERA. |
| System busy | [STX]ER2:***[ETX] | CAMERA can not process the command for running the other processing. |
| Out of range | [STX]ER3:***[ETX] | Data is out of range. |

*** : Command name (maximum 3 letters.)

<Basic pattern of Command>

Camera Command([STX][Command][ETX])

Header is [STX] (H'02) and Delimiter for [ETX] (H'03), and Command of ASCII and / or Data can be inserted in between. Division of Command and Data is ":" (H'3A)".

There are 2 kinds of Commands , one is for letters and the other for numbers.

In total , there are 37 kinds of ASCII code code 0(H'30) to 9(H'39), A(H'41) to Z(H'5A),/(H'2F).

For Command of (1) to (6) and (10) PC → Camera(To), Camera → PC(From) are the same in both ways, but for (7),(8) and (11) it is different between (To) and (From).

(1)Pattern 1 (For the Camera Operation) There is no Data , only Command.

```
[STX]  O    ?    S    [ETX]
H'02  H'4F  H'** H'53 H'03
```

(2)Pattern 2 (Camera mode setting)

In order of Command, ":", Data. Data length id different by each Command and maximum 3 letters.

```
[STX]  O    ?    ?    :    ? ( ?    ? ) [ETX]
H'02  H'4F  H'** H'** H'3A  H'** (H'** H'**) H'03
```

⏟
⏟

Command
Data

Caution : Data length is fixed for each Command and not able to decrease.

(3)Pattern 3 (Selection of Scene) In order of Command, ":", Data. Data length=1 Byte

```
[STX]  X    S    F    :    ? [ETX]
H'02  H'58  H'53 H'46 H'3A H'** H'03
```

(4)Pattern 4 (Monitoring) In order of Command, ":", Data. Data length=1 Byte

```
[STX]  D    ?    ?    :    ? [ETX]
H'02  H'44  H'** H'** H'3A H'** H'03
```

(5)Pattern 5 (Other Menus)

In order of Command, ":", Number Command(2 Bytes), ":", Data. Data length=2 Bytes.

```
[STX]  O    S    D    :    ?    ?    :    ?    ?  [ETX]
H'02  H'4F H'53 H'44 H'3A H'** H'** H'3A H'** H'** H'03
```

In this pattern, numbers at rear part of command (6th and 7th letters) are the command and Data follows by 2bytes (9th and 10th letters)

(6)Pattern 6 (Questions to Camera)

There is only Command, not Data

```
[STX]  Q    ?    ?  [ETX]
H'02  H'51 H'** H'** H'03
```

This Command requires the programmed number of the Camera and Camera returns adding Data. Data is 2 Bytes but there are same exceptions. It is specified as Q(H'51) -> O(H'4F).

(7)Pattern 7 (Questions to Camera 2)

In order of Command, ":", number of Command. No Data. Command from Camera is with Data.

```
[STX]  Q    S    D    :    ?    ?  [ETX]
H'02  H'51 H'53 H'44 H'3A H'** H'** H'03
```

This Command also requires the programmed number of the Camera and the Command is converted into numbers. It can be programmed only by Camera User Mode and is Data length, which Camera returns is 2 Bytes.(There are same exceptions.) It is Q(H'51) -> O(H'4F) same as (7). When Camera receives unprocessable number Command, it returns as Data = number Command.

a) PC -> CAMERA

```
[STX]  Q    S    D    :    1    4  [ETX]
H'02  H'51 H'53 H'44 H'3A H'31 H'34 H'03
```

b) CAMERA -> PC

```
[STX]  O    S    D    :    1    4    :    1    4  [ETX]
H'02  H'4F H'53 H'44 H'3A H'31 H'34 H'3A H'31 H'34 H'03
```

(8)Pattern 8 (Related to Contact Closer P/T)

There is only Command, not Data

```
[STX]  H    ?    ?  [ETX]
H'02  H'48 H'** H'** H'03
```

Command for Lens I/F Card (AW-PB308) and control of lens for AW-E655. Camera repeats the same Command.

P/T Control Protocol

This is a program to control Panasonic PAN/TILT system from PC by serial communication.

| | |
|---------------------|-------------|
| Method | Half Duplex |
| Communication Speed | 9600bps |
| Data bit | 8bit |
| Stop bit | 1bit |
| Prity | None |
| Flow control | None |

(Electrical Specification)

Connecter : Mojdlular 8pin

Compatible with RS422

4line system(TX+,TX-/send, RX+,RX-/Recieve)

(Process)

(1) PC — Command —> CAMERA

(2) CAMERA — Command —> PC (In most P/T commands, there is no reply.)

Normally it is processed as mentioned above, but in case of error, it ends by replying error code(*1) in (2).

(*1)Error code

| Item | Error code | Contents |
|--------------|-------------|--|
| Unsupported | eR1:***[CR] | The Command is not supported by CAMERA. |
| System busy | eR2:***[CR] | CAMERA can not process the command for running the other processing. |
| Out of range | eR3:***[CR] | Data is out of range. |

*** : Command name (maximum 3 letters.)

ex)1 PAN Stop command

```
# P 5 0 [CR]
H'23 H'50 H'35 H'30 H'0D
```


