


DC170_PC170 Command Set

Revisions

No	Issue Date	Version	Description	Apply Firmware
1	2019/03/26	1.0	First version.	DHW317 DGN100

***Notice:**

1. The RS-232 command list is for DC170_PC170.
2. The Yellow highlight  means the latest update
3. The Blue highlight  means the deleted item.

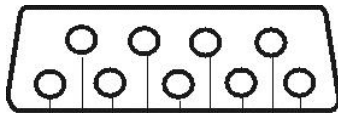
1. Communication Protocol

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



Female

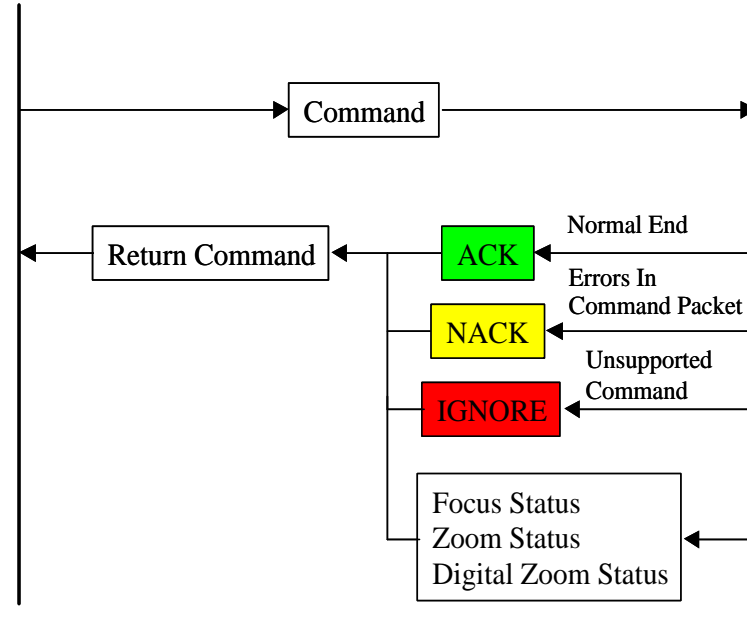
1 2 3 4 5 6 7 8 9

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

3. Communication Program

Host Controller

Camera Module



4. 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
6Byte	ETX	End Of Command	: AFh
Communication	Bit1	Bit0	Status

Response			
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. Command Packet

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
1	Preset/Factory Reset	A0h	03h	P1	P2	00h	AFh	P1=0, P2=00/01:Preset Load/Save P1=1:Factory Reset
2	Slide show On/Off	A0h	04h	P1	00h	00h	AFh	P1=00/01:Off/On
3	Slide show Delay	A0h	06h	P1	00h	00h	AFh	P1=0~5:0.5sec/1sec/3sec/5sec/10sec/Manual
4	Image/Record Quality	A0h	07h	P1	00h	00h	AFh	P1=00/01/02:High/Medium/Low
5	Copy From Nand to SD	A0h	08h	00h	00h	00h	AFh	
6	Zoom Stop	A0h	10h	00h	00h	00h	AFh	
7	Zoom Start (No AF)	A0h	11h	P1	P2	00h	AFh	P1=00/01:Tele/Wide
8	Auto Erase	A0h	14h	P1	00h	00h	AFh	P1=00/01:Auto Erase off/on
9	Digital Zoom Direct	A0h	18h	P1	00h	00h	AFh	XGA :P1=0~63(dec) SXGA :P1=0~63(dec) WXGA :P1=0~63(dec) 1080P :P1=0~63(dec) NTSC :P1=0~63(dec) PAL :P1=0~63(dec)
10	Focus Stop	A0h	19h	00h	00h	00h	AFh	
11	Focus Start	A0h	1Ah	P1	P2	00h	AFh	P1=00/01:Near/Far P2=00~06:Speed
12	Focus Direct	A0h	1Bh	P1	P2	P3	AFh	P1(LowByte)P2(HighByte)=0~160(Dec), P3=00~06:Speed
13	Zoom Start (with AF)	A0h	1Dh	P1	P2	00h	AFh	P1=00/01:Tele/Wide
14	White Balance (AWB, Auto Tune)	A0h	22h	P1	00h	00h	AFh	P1=00/01:Auto Tune/AWB
15	Set Pan Mode	A0h	26h	P1	00h	00h	AFh	P1=00/01 : off/on
16	Mask Mode	A0h	27h	P1	00h	00h	AFh	p1=0:Disable 1:Mask 2:Spotlight
17	Freeze	A0h	2Ch	P1	00h	00h	AFh	P1=00/01:Off/On

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
18	Brightness Contorl	A0h	30h	P1	P2	00h	AFh	P1=00/01:Auto/Manua P2=60/50Hz: 00~105
19	LogoDelay	A0h	34h	P1	00h	00h	AFh	P1=4~30 (sec)
20	Language Select	A0h	38h	P1	00h	00h	AFh	P1=0~18(Dec): 0: English 1: Traditional Chinese 2: Simplified Chinese 3: German 4: French 5: Spanish 6: Russian 7: Dutch 8: Finnish 9: Polish 10: Italian 11: Portuguese 12: Swedish 13: Danish 14: Czech 15: Arabic 16: Japanese 17: Korean 18: Greek 19: Reserve (English)

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
								20: Reserve(English) 21: Latvia
21	Brightness Step	A0h	39h	P1	00h	00h	AFh	P1=00/01:-1/+1
22	Source live/PC	A0h	3Ah	P1	00h	00h	AFh	00 : Camera 01 : PC 02 : Source OFF
23	Disable Digital Zoom After Optical Zoom	A0h	40h	P1	00h	00h	AFh	P1=00/01:Disable/Enable
24	Call Master Version	A0h	45h	00h	00h	00h	AFh	版本號碼 : P1 P2 P3(ASCII)
25	Call AE Status	A0h	46h	00h	00h	00h	AFh	P1=00/01:Off/On
26	Enable/Disable LOGO Image	A0h	47h	P1	00h	00h	AFh	p1=00/01:default logo/user logo
27	Playback Image Index Change Page	A0h	4Ah	P1	00h	00h	AFh	P1=00/01:Page Up/Page Down
28	All OSD On/Off	A0h	4Bh	P1	00h	00h	AFh	P1=00/01:Off/On
29	Call Slave Version	A0h	4Dh	00h	00h	00h	AFh	FW Version = P1 P2 P3(ASCII)
30	Frame Average	A0h	4Eh	P1	00h	00h	AFh	P1=00/01:LCD/DLP
31	Call lamp Status	A0h	50h	00h	00h	00h	AFh	00 : LED OFF 01 : LED ON
32	Call Text/Photo Status	A0h	51h	00h	00h	00h	AFh	P1=00/01/02:Photo/Text/Gray
33	AWB Correction	A0h	56h	00h	00h	00h	AFh	AWB Correction
34	Call AC 50/60 Hz power state	A0h	58h	00h	00h	00h	AFh	Call AC 50/60 Hz power State. 0: 50Hz, 1: 60Hz, 77: 0Hz, 99: Others
34	Call Zoom Position	A0h	60h	00h	00h	00h	AFh	XGA :P1=0~13(dec) SXGA :P1=0~10(dec) WXGA :P1=0~10(dec)

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
								1080P :P1=0~3(dec) NTSC :P1=0~18(dec) PAL :P1=0~18(dec)
36	Call Digital Zoom Position	A0h	62h	00h	00h	00h	AFh	XGA :P1=0~50(dec) SXGA :P1=0~53(dec) WXGA :P1=0~53(dec) 1080P :P1=0~60(dec) NTSC :P1=0~45(dec) PAL :P1=0~45(dec)
37	Call Focus Position	A0h	64h	00h	00h	00h	AFh	P1(LowByte)P2(HighByte)=0~160(Dec)
38	Call Freeze Status	A0h	78h	00h	00h	00h	AFh	P1=00/01:Off/On
39	Call Brightness Position	A0h	89h	00h	00h	00h	AFh	P1=60/50Hz: 00~105(dec) when AE = Manual 00~20(dec) when AE = Auto
40	Call Mix Zoom Position	A0h	8Ah	00h	00h	00h	AFh	XGA :P1=0~63(dec) SXGA :P1=0~63(dec) WXGA :P1=0~63(dec) 1080P :P1=0~63(dec) NTSC :P1=0~63(dec) PAL :P1=0~63(dec)
41	Call Menu Status	A0h	8Bh	00h	00h	00h	AFh	P1=00/01:Off/On
42	Capture Action	A0h	96h	P1	00h	00h	AFh	00 : Single Capture 01 : Time Lapse 02 : Record 03 : Disabled

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
43	Capture time	A0h	97h	P1	00h	00h	AFh	P1=00/01/02/03/04/05/06:1hr/ 2hr/ 4hr/ 8hr/ 24hr/48hr/72hr
44	Capture interval	A0h	98h	P1	00h	00h	AFh	00 : 3 sec. 01 : 5 sec. 02 : 10 sec. 03 : 30 sec. 04 : 1 min. 05 : 2 min. 06 : 5 min.
45	Key Function	A0h	A0h	P1	00h	00h	AFh	P1=01/02/03/04/05/06=Enter/Up/Down/Left/Right/Menu
46	Set R/B Gain	A0h	A1h	P1	P2	P3	AFh	P1=01/02:Red Gain/Blue Gain P2(LowByte)P3(HighByte)=0x100~0xFFF(hex):Gain
47	Call R/B Gain	A0h	A2h	P1	00h	00h	AFh	Send : P1=01/02:Red Gain/Blue Gain Return : P1(LowByte)P2(HighByte)=0x100~0xFFF(Dec):Gain
48	AF One Push Trigger	A0h	A3h	01h	00h	00h	AFh	
49	Set Sharpness (Gamma)	A0h	A7h	P1	00h	00h	AFh	P1=00/01/02:Photo/Text/Gray
50	Set Image Mode	A0h	A9h	P1	00h	00h	AFh	P1=00/01/02/03:Normal/Slide/Film/Microscope
51	System ON/OFF	A0h	B0h	P1	00h	00h	AFh	P1=00/01:Off/On
52	Power	A0h	B1h	P1	00h	00h	AFh	P1=00/01:Off/On
53	Capture	A0h	B2h	P1	00h	00h	AFh	P1=00/01:Capture/Record
54	Playback thumbnail	A0h	B3h	P1	00h	00h	AFh	P1=00:Thumbnail
55	Preview rotation	A0h	B4h	P1	00h	00h	AFh	P1=00/01/02/03:Rotate 0/180/Flip/Mirror
56	Delete	A0h	B6h	P1	00h	00h	AFh	P1=00/01/02: Delete one/Delete all/Format
57	call system status	A0h	B7h	00h	00h	00h	AFh	P1(system status)=00/01: not ready/ Read to receive the command

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
								P2(Power Status)=00/01:Off/On
58	LED On/Off	A0h	C1h	P1	00h	00h	AFh	00 : LED OFF 01 : LED ON
59	Set Audio Volume	A0h	D6h	P1	00h	00h	AFh	P1=0~31(Dec):Volume
60	Call Audio Volume	A0h	D7h	00h	00h	00h	AFh	P1=0~31(Dec):Volume

6. Return Packet

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
1	Preset/Factory Reset	A0h	03h	P1	P2	St.	AFh	P1=0, P2=00/01:Preset Load/Save P1=1:Factory Reset
2	Slide show On/Off	A0h	04h	P1	00h	St.	AFh	P1=00/01:Off/On
3	Slide show Delay	A0h	06h	P1	00h	St.	AFh	P1=0~5:0.5sec/1sec/3sec/5sec/10sec/Manual
4	Image/Record Quality	A0h	07h	P1	00h	St.	AFh	P1=00/01/02:High/Medium/Low
5	Copy From Nand to SD	A0h	08h	00h	00h	St.	AFh	
6	Zoom Stop	A0h	10h	00h	00h	St.	AFh	
7	Zoom Start (No AF)	A0h	11h	P1	P2	St.	AFh	P1=00/01:Tele/Wide
8	Auto Erase	A0h	13h	P1	00h	St.	AFh	P1=00/01:Auto Erase off/on
9	Digital Zoom Direct	A0h	18h	P1	00h	St.	AFh	XGA :P1=0~63(dec) SXGA :P1=0~63(dec) WXGA :P1=0~63(dec) 1080P :P1=0~63(dec) NTSC :P1=0~63(dec) PAL :P1=0~63(dec)
10	Focus Stop	A0h	19h	00h	00h	St.	AFh	
11	Focus Start	A0h	1Ah	P1	P2	St.	AFh	P1=00/01:Near/Far P2=00~06:Speed
12	Focus Direct	A0h	1Bh	P1	P2	St.	AFh	P1(LowByte)P2(HighByte)=0~160(Dec), P3=00~06:Speed
13	Zoom Start (with AF)	A0h	1Dh	P1	P2	St.	AFh	P1=00/01:Tele/Wide
14	White Balance (AWB, Auto Tune)	A0h	22h	P1	00h	St.	AFh	P1=00/01:Auto Tune/AWB
15	Set Pan Mode	A0h	26h	P1	00h	St.	AFh	P1=00/01 : off/on
16	Mask Mode	A0h	27h	P1	00h	St.	AFh	p1=0:Disable 1:Mask 2:Spotlight
17	Freeze	A0h	2Ch	P1	00h	St.	AFh	P1=00/01:Off/On

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
18	Brightness Contorl	A0h	30h	P1	00h	St.	AFh	P1=00/01:Auto/Manua P2=60/50Hz: 00~105
19	LogoDelay	A0h	32h	P1	00h	St.	AFh	P1=4~30 (sec)
20	Language Select	A0h	38h	P1	00h	St.	AFh	P1=0~18(Dec): 0: English 1: Traditional Chinese 2: Simplified Chinese 3: German 4: French 5: Spanish 6: Russian 7: Dutch 8: Finnish 9: Polish 10: Italian 11: Portuguese 12: Swedish 13: Danish 14: Czech 15: Arabic 16: Japanese 17: Korean 18: Greek 19: Reserve (English)

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
								20: Reserve(English) 21: Latvia
21	Brightness Step	A0h	39h	P1	00h	St.	AFh	P1=00/01:-1/+1
22	Source live/PC	A0h	3Ah	P1	00h	St.	AFh	00 : Camera 01 : PC 02 : Source OFF
23	Disable Digital Zoom After Optical Zoom	A0h	40h	P1	00h	St.	AFh	P1=00/01:Disable/Enable
24	Call Master Version	A0h	45h	P1	P2	P3	AFh	版本號碼 : P1 P2 P3(ASCII)
25	Call AE Status	A0h	46h	P1	00h	St.	AFh	P1=00/01:Off/On
26	Enable/Disable LOGO Image	A0h	47h	P1	00h	St.	AFh	p1=00/01:default logo/user logo
27	Playback Image Index Change Page	A0h	4Ah	P1	00h	St.	AFh	P1=00/01:Page Up/Page Down
28	All OSD On/Off	A0h	4Bh	P1	00h	St.	AFh	P1=00/01:Off/On
29	Call Slave Version	A0h	4Dh	P1	P2	P3	AFh	FW Version = P1 P2 P3(ASCII)
30	Frame Average	A0h	4Eh	P1	00h	St.	AFh	P1=00/01:LCD/DLP
31	Call lamp Status	A0h	50h	P1	00h	St.	AFh	00 : LED OFF 01 : LED ON
32	Call Text/Photo Status	A0h	51h	P1	00h	St.	AFh	P1=00/01/02:Photo/Text/Gray
33	AWB Correction	A0h	56h	00h	00h	St.	AFh	AWB Correction
34	Call AC 50/60 Hz power state	A0h	58h	00h	00h	St.	AFh	Call AC 50/60 Hz power State. 0: 50Hz, 1: 60Hz, 77: 0Hz, 99: Others
34	Call Zoom Position	A0h	60h	P1	P2	St.	AFh	XGA :P1=0~13(dec) SXGA :P1=0~10(dec) WXGA :P1=0~10(dec)

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
								1080P :P1=0~3(dec) NTSC :P1=0~18(dec) PAL :P1=0~18(dec)
36	Call Digital Zoom Position	A0h	62h	P1	00h	St.	AFh	XGA :P1=0~50(dec) SXGA :P1=0~53(dec) WXGA :P1=0~53(dec) 1080P :P1=0~60(dec) NTSC :P1=0~45(dec) PAL :P1=0~45(dec)
37	Call Focus Position	A0h	64h	P1	P2	St.	AFh	P1(LowByte)P2(HighByte)=0~160(Dec)
38	Call Freeze Status	A0h	78h	P1	00h	St.	AFh	P1=00/01:Off/On
39	Call Brightness Position	A0h	89h	P1	00h	St.	AFh	P1=60/50Hz: 00~105(dec) when AE = Manual 00~20(dec) when AE = Auto
40	Call Mix Zoom Position	A0h	8Ah	P1	P2	St.	AFh	XGA :P1=0~63(dec) SXGA :P1=0~63(dec) WXGA :P1=0~63(dec) 1080P :P1=0~63(dec) NTSC :P1=0~63(dec) PAL :P1=0~63(dec)
41	Call Menu Status	A0h	8Bh	P1	00h	St.	AFh	P1=00/01:Off/On
42	Capture Action	A0h	96h	P1	00h	St.	AFh	00 : Single Capture 01 : Time Lapse 02 : Record 03 : Disabled

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
43	Capture time	A0h	97h	P1	00h	St.	AFh	P1=00/01/02/03/04/05/06:1hr/ 2hr/ 4hr/ 8hr/ 24hr/48hr/72hr
44	Capture interval	A0h	98h	P1	00h	St.	AFh	00 : 3 sec. 01 : 5 sec. 02 : 10 sec. 03 : 30 sec. 04 : 1 min. 05 : 2 min. 06 : 5 min.
45	Key Function	A0h	A0h	P1	00h	St.	AFh	P1=01/02/03/04/05/06=Enter/Up/Down/Left/Right/Menu
46	Set R/B Gain	A0h	A1h	P1	P2	St.	AFh	P1=01/02:Red Gain/Blue Gain P2(LowByte)P3(HighByte)=0x100~0xFFF(hex):Gain
47	Call R/B Gain	A0h	A2h	P1	P2	St.	AFh	Send : P1=01/02:Red Gain/Blue Gain Return : P1(LowByte)P2(HighByte)=0x100~0xFFF(Dec):Gain
48	AF One Push Trigger	A0h	A3h	01h	00h	St.	AFh	
49	Set Sharpness (Gamma)	A0h	A7h	P1	00h	St.	AFh	P1=00/01/02:Photo/Text/Gray
50	Set Image Mode	A0h	A9h	P1	00h	St.	AFh	P1=00/01/02/03:Normal/Slide/Film/Microscope
51	System ON/OFF	A0h	B0h	P1	00h	St.	AFh	P1=00/01:Off/On
52	Power	A0h	B1h	P1	00h	St.	AFh	P1=00/01:Off/On
53	Capture	A0h	B2h	P1	00h	St.	AFh	P1=00/01:Capture/Record
54	Playback thumbnail	A0h	B3h	P1	00h	St.	AFh	P1=00:Thumbnail
55	Preview rotation	A0h	B4h	P1	00h	St.	AFh	P1=00/01/02/03:Rotate 0/180/Flip/Mirror
56	Delete	A0h	B6h	P1	00h	St.	AFh	P1=00/01/02: Delete one/Delete all/Format
57	call system status	A0h	B7h	P1	P2	St.	AFh	P1(system status)=00/01: not ready/ Read to receive the command

Item	Function	PC AP to DC170 Master command format						Comment
		1B	2B	3B	4B	5B	6B	
								P2(Power Status)=00/01:Off/On
58	LED On/Off	A0h	C1h	P1	00h	St.	AFh	00 : LED OFF 01 : LED ON
59	Set Audio Volume	A0h	D6h	P1	00h	St.	AFh	P1=0~31(Dec):Volume
60	Call Audio Volume	A0h	D7h	P1	P2	St.	AFh	P1=0~31(Dec):Volume