



# **Command/Parameter List for Standard Communication**

**BPE-7219-000**

**May 19, 2021**

**CANON INC.**

# Revision History

Revision	Release Date	Location	Changes
00	May 19, 2021	--	First edition

# 1 Control Command

Command Set	Command		Command Packet* *Value specified in hexadecimal	Comments
EXPOSURE	MODE	FULL AUTO	8x 01 04 39 00 FF	Program AE
		MANUAL	8x 01 04 39 03 FF	Manual Exposure
		SHUTTER Pri*2	8x 01 04 39 0A FF	Shutter Mode
		IRIS Pri*2	8x 01 04 39 0B FF	Iris Mode
	IRIS	Up(Open)	8x 01 04 0B 02 FF	
		Down(Close)	8x 01 04 0B 03 FF	
		Direct	8x 01 04 4B 00 00 0p 0p FF	pp: Iris Position 05...15 CR-N500: F11.0...F2.8 CR-N300: F8.0...F1.8
	SHUTTER	Up(Fast speed)	8x 01 04 0A 02 FF	
		Down(Slow speed)	8x 01 04 0A 03 FF	
		Direct	8x 01 04 4A 00 00 0p 0p FF	pp: Shutter Position 01...15
	GAIN	Up	8x 01 04 0C 02 FF	
		Down	8x 01 04 0C 03 FF	
		Direct	8x 01 04 4C 00 00 0p 0p FF	pp: Gain Position 00...0C CR-N500: -6.0dB...33.0dB CR-N300: 0.0dB...36.0dB
	GAIN LIMIT	Direct	8x 01 04 2C 0p FF	p: 4...9, F(Off) CR-N500: -6.0dB...26.0dB, 33.0dB(Off) CR-N300: 0.0dB...33.0dB, 36.0dB(Off)
	EXP COMP	Up	8x 01 04 0E 02 FF	
		Down	8x 01 04 0E 03 FF	
		Direct	8x 01 04 4E 00 00 0p 0p FF	pp: 00(-2.00)...0E(+2.00)
	BACK LIGHT	On/Off	8x 01 04 33 0p FF	p: 2(On), 3(Off)
	AE SPEED	Direct	8x 01 04 5D pp FF	pp: 01...10(High), 11...20(Normal), 21...30(Low)
	ND FILER*1	ND FILER*1	8x 01 7E 01 53 0p FF	p: 0(Off), 1(1/4), 2(1/16), 3(1/64)
COLOR	WHITE BALANCE	Auto1	8x 01 04 35 00 FF	AWB
		Indoor	8x 01 04 35 01 FF	Tungsten
		Outdoor	8x 01 04 35 02 FF	Sunlight
		Manual	8x 01 04 35 05 FF	Manual
		One Push WB	8x 01 04 35 03 FF	Set A
	ONE PUSH TRIGGER	One Push Trigger	8x 01 04 10 05 FF	Set A Execution
	R.GAIN	Up	8x 01 04 03 02 FF	
		Down	8x 01 04 03 03 FF	
		Direct	8x 01 04 43 00 00 0p 0p FF	pp: 00(0)...FF(1023)

Command Set	Command		Command Packet* *Value specified in hexadecimal	Comments
	B.GAIN	Up	8x 01 04 04 02 FF	
		Down	8x 01 04 04 03 FF	
		Direct	8x 01 04 44 00 00 0p 0p FF	pp: 00(0)...FF(1023)
	OFFSET	Reset	8x 01 7E 01 2E 00 00 FF	Return to 7(0)
		Up	8x 01 7E 01 2E 00 02 FF	
		Down	8x 01 7E 01 2E 00 03 FF	
		Direct	8x 01 7E 01 2E 01 0p FF	0(R: 0, B: +50)...7(R: 0, B: 0)...E(R: +50, B: 0)
	MATRIX	Select	8x 01 7E 01 3D 0p FF	p: 2(Video), 3...B(Neutral)
	LEVEL	Up	8x 01 04 09 02 FF	
		Down	8x 01 04 09 03 FF	
		Direct	8x 01 04 49 00 00 00 0p FF	p: 0(-50)...E(+50)
	PHASE	Up	8x 01 04 0F 02 FF	
		Down	8x 01 04 0F 03 FF	
		Direct	8x 01 04 4F 00 00 00 0p FF	p: 0(-18)...E(+18)
	R-G	Direct	8x 01 7E 01 7A 0p 0p FF	
	R-B	Direct	8x 01 7E 01 7B 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
	G-R	Direct	8x 01 7E 01 7C 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
	G-B	Direct	8x 01 7E 01 7D 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
	B-R	Direct	8x 01 7E 01 7E 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
	B-G	Direct	8x 01 7E 01 7F 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
DETAIL	LEVEL	Up	8x 01 04 02 02 FF	
		Down	8x 01 04 02 03 FF	
		Direct	8x 01 04 42 00 00 0p 0p FF	pp: 00(-10)...0F(+50)
	LIMIT	Direct	8x 01 05 42 06 0p FF	p: 0 (-50)...7(+50)
KNEE	KNEE SETTING	ON/OFF	8x 01 7E 01 6D 0p FF	p: 2(On), 3(Off)
	KNEE MODE	-	8x 01 7E 01 54 0p FF	p: 0(auto On), 4(auto Off)
	KNEE SLOPE	Direct	8x 01 7E 01 6F 0p 0p FF	pp: 00(-35)...0E(+50)
	KNEE POINT	Direct	8x 01 7E 01 6E 0p 0p FF	pp: 00(+50)...0C(+109)

Command Set	Command		Command Packet* *Value specified in hexadecimal	Comments
GAMMA	MODE	-	8x 01 04 5b 0p FF	p: Gamma setting CR-N500: 0(Normal1), 1(Normal2), 2(Normal3), 8(Normal4), 9(Wide DR), A...E(Canon Log3) CR-N300: 0(Normal1), 1...2, 8...E(Normal3)
	BLACK GAMMA LEVEL	Direct	8x 01 7E 01 72 0p 0p FF	pp: 00(-50)...0E(+50)
	BLACK GAMMA RANGE	Direct	8x 01 05 5C 0p FF	p: Correction range 0(-20)...2(+50)
	BLACK LEVEL	Up	8x 01 7E 04 15 02 FF	
		Down	8x 01 7E 04 15 03 FF	
		Direct	8x 01 7E 04 45 0p 0p FF	pp: 00(-50)...60(50)
PICTURE PROFILE*1	MODE	-	8x 01 7E 04 5F 0p FF	p: Picture profile setting 0(Normal1: BT.709), 1(Normal: BT.2020), 2(WideD: BT.709), 3(WideDR: BT.2020), 4...6(Canon Log 3: BT.2020), 7(Canon Log 3: BT.709), 8(Custom)
FLICKER REDUCTION	MODE	On/Off	8x 01 04 32 0p FF	p: 2(On), 3(Off)
NOISE REDUCTION	MODE LEVEL	-	8x 01 04 53 pp FF	pp: 00(0)...05(12)
ZOOM	STOP	-	8x 01 04 07 00 FF	
	TELE (VARIABLE)	-	8x 01 04 07 2p FF	p: Zoom speed 0(Slow)...7(Fast)
	WIDE (VARIABLE)	-	8x 01 04 07 3p FF	p: Zoom speed 0(Slow)...7(Fast)
	DIRECT	Direct	8x 01 04 47 0z 0z 0z 0z FF	zzzz: Zoom value and zoom ratio
	CLEAR IMAGE ZOOM	On/Off	8x 01 04 06 03 FF	Off
			8x 01 04 06 04 FF	On
	TELE CONVERT MODE	-	8x 01 7E 04 36 0p FF	p: 2(1.5x), 3(Off), 4(3x), 5(6x)
FOCUS	MODE	AUTO/MANUAL	8x 01 04 38 0p FF	p: 2(AF), 3(MF)
	STOP	-	8x 01 04 08 00 FF	
	FAR (VARIABLE SPEED)	-	8x 01 04 08 2p FF	p: Focus speed 0(Slow)...7(Fast)
	NEAR (VARIABLE SPEED)	-	8x 01 04 08 3p FF	p: Focus speed 0(Slow)...7(Fast)
	DIRECT	Direct	8x 01 04 48 0p 0p 0p 0p FF	pppp: F000(Near)...1000(Far)

Command Set	Command		Command Packet* *Value specified in hexadecimal	Comments
	ONE PUSH TRIGGER	-	8x 01 04 18 01 FF	One-Shot AF
	AF SENSITIVITY	-	8x 01 04 58 0p FF	p: 1(High), 2(Middle), 3(Low)
PAN TILT DRIVE	UP	-	8x 01 06 01 vv ww 03 01 FF	vv: Pan speed01(Slow)...18(Fast) ww: Tilt speed01(Slow)...18(Fast)
	DOWN	-	8x 01 06 01 vv ww 03 02 FF	vv: Pan speed01(Slow)...18(Fast) ww: Tilt speed01(Slow)...18(Fast)
	LEFT	-	8x 01 06 01 vv ww 01 03 FF	vv: Pan speed01(Slow)...18(Fast) ww: Tilt speed01(Slow)...18(Fast)
	RIGHT	-	8x 01 06 01 vv ww 02 03 FF	vv: Pan speed01(Slow)...18(Fast) ww: Tilt speed01(Slow)...18(Fast)
	UPLEFT	-	8x 01 06 01 vv ww 01 01 FF	vv: Pan speed01(Slow)...18(Fast) ww: Tilt speed01(Slow)...18(Fast)
	UPRIGHT	-	8x 01 06 01 vv ww 02 01 FF	vv: Pan speed01(Slow)...18(Fast) ww: Tilt speed01(Slow)...18(Fast)
	DOWNLEFT	-	8x 01 06 01 vv ww 01 02 FF	vv: Pan speed01(Slow)...18(Fast) ww: Tilt speed01(Slow)...18(Fast)
	DOWNRIGHT	-	8x 01 06 01 vv ww 02 02 FF	vv: Pan speed01(Slow)...18(Fast) ww: Tilt speed01(Slow)...18(Fast)
	STOP	-	8x 01 06 01 vv ww 03 03 FF	vv: Pan speed01(Slow)...18(Fast) ww: Tilt speed01(Slow)...18(Fast)
	ABS (ABSOLUTE POSITION)	-	8x 01 06 02 vv 00 0p 0p 0p 0p 0p 0t 0t 0t 0t FF	vv: Speed01(Sow)...18(Fast) ppppp and tttt: Pan/Tilt Position
	REL (RELATIVE POSITION)	-	8x 01 06 03 vv 00 0p 0p 0p 0p 0p 0t 0t 0t 0t FF	vv: Speed01(Sow)...18(Fast) ppppp and tttt: Pan/Tilt Position
	HOME	-	8x 01 06 04 FF	
	RESET	-	8x 01 06 05 FF	
	Acceleration/ deceleration curve (RAMP CURVE)	-	8x 01 06 31 0p FF	p: 1 (Sharpness), 2 (Standard), 3 (Gentle)
PRESET	RESET	Reset	8x 01 04 3F 00 pp FF	pp: Preset number to reset-1(00...63)
	SET	Set	8x 01 04 3F 01 pp FF	pp: Preset number to set-1(00...63)
	RECALL	Recall	8x 01 04 3F 02 pp FF	pp: Preset number to recall-1(00...63)
	DRIVE SPEED	-	8x 01 7E 01 0B pp qq FF	pp: Preset number for speed setting-1(00...63) qq: Speed to move to the position set by pp01...18
	PRESET MODE	-	8x 01 7E 04 3D pp FF	pp: 00(PTZF/Camera setting), 01(PTZF only), 10(Trace)
PTZ TRACE	REC	START	8x 01 7E 04 20 00 0p 02 FF	p: 0...F(Trace number to record 1...16)
		STOP	8x 01 7E 04 20 00 00 03 FF	

Command Set	Command		Command Packet* *Value specified in hexadecimal	Comments
	PLAY	PREPARE	8x 01 7E 04 20 01 0p 01 FF	p: 0...F(Trace number to reproduce 1...16)
		START	8x 01 7E 04 20 01 00 02 FF	
	DELETE	Delete	8x 01 7E 04 20 02 0p 00 FF	p: 0...F(Trace number to delete 1...16)
TALLY	ON/OFF	-	8x 01 7E 01 0A 00 0p FF	p: 2(On), 3(Off)
	MODE	-	8x 01 7E 01 0A 01 0p FF	p: 0(Off), 4(Low), 5(High), 6(Middle)
Power Management	ON/STANDBY	-	8x 01 04 00 0p FF	p: 2(On), 3(Standby)

\*1 This function is available for only CR-N500

\*2 This function is available for only CR-N300

## 2 Inquiry Command

Inquiry Command			Inquiry Packet	Reply Packet	Comments
EXPOSURE	MODE	Mode inquiry	8x 09 04 39 FF	y0 50 00 FF	Program AE
				y0 50 03 FF	Manual Exposure
				y0 50 0A FF	Shutter Mode
				y0 50 0B FF	Iris Mode
	IRIS	-	8x 09 04 4B FF	y0 50 00 00 0p 0p FF	pp: Iris Position 05...15
	SHUTTER	-	8x 09 04 4A FF	y0 50 00 00 0p 0p FF	pp: Shutter Position 01...15
	GAIN	-	8x 09 04 4C FF	y0 50 00 00 0p 0p FF	pp: Gain Position 00...0C
	GAIN LIMIT	-	8x 09 04 2C FF	y0 50 0p FF	p: 4...9, F(Off)
	EXP COMP	On/Off inquiry	8x 09 04 3E FF	y0 50 0p FF	p: 2(On)
		LEVEL	8x 09 04 4E FF	y0 50 00 00 0p 0p FF	pp: 00...0E
	BACK LIGHT	On/Off inquiry	8x 09 04 33 FF	y0 50 0p FF	p: 2(On), 3(Off)
COLOR	AE SPEED	-	8x 09 04 5D FF	y0 50 pp FF	pp: 01...30
	ND FILER*1	-	8x 09 7E 01 53 FF	y0 50 0p FF	p: 0(Off), 1(1/4), 2(1/16), 3(1/64)
	Auto	WHITE BALANCE MODE inquiry	8x 09 04 35 FF	y0 50 00 FF	AWB
	Indoor			y0 50 01 FF	Tungsten
	Outdoor			y0 50 02 FF	Sunlight
	Manual			y0 50 05 FF	Manual
	ONE PUSH WB			y0 50 03 FF	Set A
	R.GAIN	-	8x 09 04 43 FF	y0 50 00 00 0p 0p FF	pp: 00(0)...FF(1023)
	B.GAIN	-	8x 09 04 44 FF	y0 50 00 00 0p 0p FF	pp: 00(0)...FF(1023)
	OFFSET	-	8x 09 7E 01 2E FF	y0 50 00 00 00 0p FF	0(R: 0 B: +50)...7(R: 0 B: 0)... E(R: +50 B: 0)
	MATRIX	-	8x 09 7E 01 3D FF	y0 50 0p FF	p: 2(Video),3...B(Neutral)
	LEVEL	-	8x 09 04 49 FF	y0 50 00 00 00 0p FF	p: 0(-50)...E(+50)
	PHASE	-	8x 09 04 4F FF	y0 50 00 00 00 0p FF	p: 0(-18)...E(+18)
	R-G	-	8x 09 7E 01 7A FF	y0 50 00 00 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
	R-B	-	8x 09 7E 01 7B FF	y0 50 00 00 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
	G-R	-	8x 09 7E 01 7C FF	y0 50 00 00 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
	G-B	-	8x 09 7E 01 7D FF	y0 50 00 00 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
	B-R	-	8x 09 7E 01 7E FF	y0 50 00 00 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)



Inquiry Command			Inquiry Packet	Reply Packet	Comments
	B-G	-	8x 09 7E 01 7F FF	y0 50 00 00 0p 0p FF	pp: 00(-50)...63(00)...C6(+50)
DETAIL	LEVEL	-	8x 09 04 42 FF	y0 50 00 00 0p 0p FF	pp: 00(-10)...0F(+50)
	LIMIT	-	8x 09 05 42 06 FF	y0 50 0p FF	p: 0 (-50)...7(+50)
KNEE	KNEE SETTING	On/Off inquiry	8x 09 7E 01 6D FF	y0 50 0p FF	p: 2(On), 3(Off)
	KNEE MODE	-	8x 09 7E 01 54 FF	y0 50 0p FF	p: 0(auto On), 4(auto Off)
	KNEE SLOPE	-	8x 09 7E 01 6F FF	y0 50 00 00 0p 0p FF	pp: 00(-35)...0E(+50)
	KNEE POINT	-	8x 09 7E 01 6E FF	y0 50 00 00 0p 0p FF	pp: 00(+50)...0C(+109)
GAMMA	MODE	-	8x 09 04 5B FF	y0 50 0p FF	p: Gamma setting CR-N500: 0(Normal1), 1(Normal2), 2(Normal3), 8(Normal4), 9(Wide DR), A...E(Canon Log3) CR-N300: 0(Normal1), 1...2, 8...E(Normal3)
	BLACK GAMMA LEVEL	-	8x 09 7E 01 72 FF	y0 50 00 00 0p 0p FF	pp: 00(-50)...0E(+50)
	BLACK GAMMA RANGE	-	8x 09 05 5C FF	y0 50 0p FF	p: Correction range 0 (-20)...2(+50)
	BLACK LEVEL	-	8x 09 7E 04 45 FF	y0 50 0p 0p FF	pp: 00(-50)...60(50)
FLICKER REDUCTION	MODE	-	8x 09 04 32 FF	y0 50 0p FF	p: 2(On), 3(Off)
NOISE REDUCTION	MODE LEVEL	-	8x 09 04 53 FF	y0 50 pp FF	pp: 00(0)...05(12)
ZOOM	ZOOM POSITION	-	8x 09 04 47 FF	y0 50 0z 0z 0z 0z FF	zzzz: zoom position and zoom ratio
	CLEAR IMAGE ZOOM	On/Off inquiry	8x 09 04 06 FF	y0 50 0p FF	p: 4(On), 3(Off)
	TELE CONVERT MODE	On/Off inquiry	8x 09 7E 04 36 FF	y0 50 0p FF	p: 2(1.5x), 3(Off), 4(3x), 5(6x)
FOCUS	FOCUS MODE	-	8x 09 04 38 FF	y0 50 02 FF	AF
				y0 50 03 FF	MF
	FOCUS POSITION	-	8x 09 04 48 FF	y0 50 0p 0p 0p 0p FF	pppp: F000(Near)...1000(Far) Focus value and focal distance
	FOCUS SENSITIVITY	-	8x 09 04 58 FF	y0 50 0p FF	p: 1(High), 2(Middle), 3(Low)
PAN TILT DRIVE	POSITION	-	8x 09 06 12 FF	y0 50 0p 0p 0p 0p 0p 0t 0t 0t 0t FF	ppppp and tttt: Pan/Tilt Position
	STATUS	-	8x 09 06 10 FF	y0 50 pp pp FF	

Inquiry Command			Inquiry Packet	Reply Packet	Comments
	Acceleration/ deceleration curve (RAMP CURVE)	-	8x 09 06 31 FF	y0 50 0p FF	p: 1 (Sharpness), 2 (Standard), 3 (Gentle)
PRESET	DRIVE SPEED	-	8x 09 7E 01 0B pp FF	y0 50 qq FF	pp: Preset number for speed setting-1(00...63) qq: Speed to move to the position set by pp01...18
	PRESET	-	8x 09 04 3F FF	y0 50 pp FF	pp: Preset number called the latest-1(01...63)
	PRESET MODE	Mode inquiry	8x 09 7E 04 3D FF	y0 50 pp FF	pp: 00(PTZF/Camera setting), 01(PTZF only), 10(Trace)
PTZ TRACE	Status inquiry	-	8x 09 7E 04 20 03 FF	y0 50 0p FF	p: Return the status of PTZ TRACE 0(normal), 1(recording), 2(preparing for playback), 3(playback preparation completed), 4(playing)
	Record status bulk inquiry	-	8x 09 7E 04 20 10 00 00 FF	y0 50 0p 0q 0r 0s FF	pqrs: Recorded TRACE number
	Record status individual inquiry	-	8x 09 7E 04 20 10 01 0p FF	y0 50 0p FF	p: TRACE number q: 0(Not recorded), 1(Recorded)
	Playback preparation status inquiry	-	8x 09 7E 04 20 01 00 00 FF	y0 50 pp FF	pp: TRACE number when the playback preparation is completed 00...0F, 7F if not prepared
TALLY	ON/OFF INQUIRY	-	8x 09 7E 01 0A FF	y0 50 0p FF	p: 2(On), 3(Off)
Power Management	ON/STANDBY INQUIRY	-	8x 09 04 00 FF	y0 50 0p FF	p: 2(On), 3(Standby)
SOFTWARE VERSION	-	-	8x 09 00 02 FF	y0 50 pp pp qq qq rr rr 0s FF	pppp: Vendor ID qqqq: Model Code rrrr: ROM version s: Socket Number

\*1 This function is available for only CR-N500

\*2 This function is available for only CR-N300

# 3 Block Inquiry Command

## 3.1 Lens control system inquiry commands

Command Packet 8x 09 7E 7E 00 FF

Byte	Bit	Comments	Byte	Bit	Comments	Byte	Bit	Comments		
0	7	Destination Address	6	7	0	12	7	0		
	6			6	0		6	0		
	5			5	0		5	0		
	4			4	0		4	0		
	3	Source Address		3	0		3	0		
	2			2	0		2	0		
	1			1	0		1	0		
	0			0	0		0	0		
1	7	0	7	7	0	13	7	0		
	6	1		6	0		6	Digital Zoom		
	5	0		5	0		5	0		
	4	1		4	0		4	0		
	3	0		3	0		3	0		
	2	0		2	0		2	0		
	1	0		1	0		1	0		
	0	0		0	0		0	Focus Mode		
2	7	0	8	7	0	14	7	0		
	6	0		6	0		6	0		
	5	0		5	0		5	0		
	4	0		4	0		4	0		
	3	Zoom Position(HH)		3	Focus Position(HH)		3	0		
	2			2			2	0		
	1			1			1	Focus Command Executing		
	0			0			0	Zoom Command Executing		
3	7	0	9	7	0	15	7	1		
	6	0		6	0		6	1		
	5	0		5	0		5	1		
	4	0		4	0		4	1 Terminator		
	3	Zoom Position(HL)		3	Focus Position(HL)		3	1		
	2			2			2	1		
	1			1			1	1		
	0			0			0	1		
4	7	0	10	7	0	Digital Zoom: 1 when ON Focus Mode: 1 when Manual Focus Command Executing: 1 when Focus is operating Zoom Command Executing: 1 when Zoom is operating				
	6	0		6	0					
	5	0		5	0					
	4	0		4	0					
	3	Zoom Position(LH)		3	Focus Position(LH)					
	2			2						
	1			1						
	0			0						
5	7	0	11	7	0					
	6	0		6	0					
	5	0		5	0					
	4	0		4	0					
	3	Zoom Position(LL)		3	Focus Position(LL)					
	2			2						
	1			1						
	0			0						

### 3.2 Camera control system inquiry commands

Command Packet 8x 09 7E 7E 01 FF

Byte	Bit	Comments	Byte	Bit	Comments	Byte	Bit	Comments	
0	7	Destination Address	6	7	0	12	7	0	
	6			6	0		6	0	
	5			5	0		5	0	
	4			4	Gain Position		4	White Balance Mode	
	3	3		3					
	2	2		2					
	1	1		1					
	0	0		0					
1	7	0	7	7	0	13	7	0	
	6	1		6	0		6	0	
	5	0		5	0		5	0	
	4	1		4	0		4	0	
	3	0		3	Aperture Gain (Detail Level)		3	0	
	2	0		2			0		
	1	0		1			0		
	0	0		0			0		
2	7	0	8	7	0	14	7	0	
	6	0		6	Color Matrix(L)		6	Color Matrix(H)	
	5	0		5			5		
	4	0		4	0		4		Exposure Correction Level
	3	R Gain(H)		3	Exposure Mode		3	Exposure Compensation	
	2			2			2		
	1			1			1		
	0			0			0		0
3	7	0	9	7	0	15	7	1	
	6	0		6	0		6	1	
	5	0		5	0		5	1	
	4	0		4	0		4	1 Terminator	
	3	R Gain(L)		3	0		3	1	
	2			2	Backlight Compensation		2	1	
	1			1	Exposure Compensation		1	1	
	0			0	0		0	1	
4	7	0	10	7	0	Backlight Compensation: 1 when ON Exposure Compensation: 1 when ON			
	6	0		6	0				
	5	0		5	0				
	4	0		4	Shutter Position				
	3	3							
	2	2							
	1	1							
	0	0							
5	7	0	11	7	0				
	6	0		6	0				
	5	0		5	0				
	4	0		4	Iris Position				
	3	3							
	2	2							
	1	1							
	0	0		0					

### 3.3 Other block inquiry commands

Command Packet 8x 09 7E 7E 02 FF

Byte	Bit	Comments	Byte	Bit	Comments	Byte	Bit	Comments
0	7	Destination Address	6	7	0	12	7	0
	6			6	0		6	0
	5			5	0		5	0
	4			4	0		4	0
	3	Source Address		3	0		3	0
	2			2	0		2	0
	1			1	0		1	0
	0			0	0		0	0
1	7	0	7	7	0	13	7	0
	6	1		6	0		6	0
	5	0		5	0		5	0
	4	1		4	0		4	Knee Mode
	3	0		3	White Balance Offset		3	Knee Slope
	2	0		2			2	
	1	0		1			1	
	0	0		0			0	
2	7	0	8	7	0	14	7	0
	6	0		6	0		6	0
	5	0		5	0		5	0
	4	0		4	0		4	Knee Setting
	3	0		3	0		3	Knee Point
	2	0		2	0		2	
	1	0		1	0		1	
	0	Power		0	0		0	
3	7	0	9	7	0	15	7	1
	6	0		6	0		6	1
	5	0		5	0		5	1
	4	0		4	0		4	1 Terminator
	3	0		3	0		3	1
	2	0		2	0		2	1
	1	0		1	0		1	1
	0	0		0	0		0	1
4	7	0	10	7	0	Power: 1 when ON		
	6	0		6	0			
	5	0		5	0			
	4	0		4	0			
	3	0		3	0			
	2	0		2	0			
	1	0		1	0			
	0	0		0	0			
5	7	0	11	7	0			
	6	0		6	0			
	5	0		5	0			
	4	0		4	0			
	3	0		3	0			
	2	0		2	0			
	1	0		1	0			
	0	0		0	0			

### 3.4 Other enlargement inquiry commands-1

Command Packet 8x 09 7E 7E 03 FF

Byte	Bit	Comments	Byte	Bit	Comments	Byte	Bit	Comments
0	7	Destination Address	6	7	0	12	7	0
	6			6	0		6	0
	5			5	AE Response		5	AE Response
	4			4			4	
	3	3		3				
	2	2		2				
	1	1		1				
	0	0		0				
1	7	0	7	7	0	13	7	0
	6	1		6	0		6	Gamma(L) (Gamma Mode)
	5	0		5	0		5	
	4	1		4	0		4	
	3	0		3	0		3	0
	2	0		2	0		2	NR level
	1	0		1	0		1	
	0	0		0	0		0	
2	7	0	8	7	0	14	7	0
	6	0		6	0		6	0
	5	0		5	0		5	0
	4	0		4	0		4	0
	3	0		3	0		3	Gain Limit
	2	0		2	0		2	
	1	0		1	0		1	
	0	0		0	0		0	
3	7	0	9	7	0	15	7	1
	6	0		6	0		6	1
	5	0		5	0		5	1
	4	0		4	0		4	1 Terminator
	3	0		3	0		3	1
	2	0		2	0		2	1
	1	0		1	0		1	1
	0	0		0	0		0	1
4	7	0	10	7	0			
	6	0		6	Gamma(H) (Gamma Mode)			
	5	0		5				
	4	0		4				
	3	0		3				
	2	0		2	0			
	1	0		1	0			
	0	0		0	0			
5	7	0	11	7	0			
	6	0		6	Color Gain (Color Level)			
	5	0		5				
	4	0		4				
	3	0		3				
	2	0		2	0			
	1	0		1	0			
	0	0		0	0			

### 3.5 Other enlargement inquiry commands-2

Command Packet 8x 09 7E 7E 04 FF

Byte	Bit	Comments	Byte	Bit	Comments	Byte	Bit	Comments	
0	7	Destination Address	6	7	0	12	7	0	
	6			6	0		6	0	
	5			5	0		5	Detail Limit	
	4			4	0		4		
	3	Source Address		3	0		3		
	2			2	0		2	0	
	1			1	0		1	0	
	0			0	0		0	0	
1	7	0	7	7	0	13	7	0	
	6	1		6	Black Gamma Range		6	0	
	5	0		5			5	0	
	4	1		4			4	0	
	3	0		3	0		3	0	
	2	0		2	0		2	0	
	1	0		1	0		1	0	
	0	0		0	0		0	0	
2	7	0	8	7	0	14	7	0	
	6	0		6	0		6	0	
	5	0		5	0		5	0	
	4	0		4	0		4	0	
	3	0		3	0		3	Detail Mode	
	2	0		2	0		2	0	
	1	0		1	0		1	0	
	0	0		0	0		0	0	
3	7	0	9	7	0	15	7	1	
	6	0		6	0		6	1	
	5	0		5	0		5	1	
	4	0		4	0		4	1 Terminator	
	3	Black Level(H)		3	0		3	1	
	2			2	0		2	1	
	1			1	0		1	1	
	0			0	0		0	1	
4	7	0	10	7	0	Detail Mode: 1 when Manual			
	6	Black Level(L)		6	0				
	5			5	0				
	4			4	0				
	3			3	0				
	2	0		2	0				
	1	0		1	0				
	0	0		0	0				
5	7	0	11	7	0				
	6	0		6	0				
	5	Black Gamma Level		5	0				
	4			4	0				
	3			3	0				
	2			2	0				
	1	0		1	0				
	0	0		0	0				

### 3.6 Other enlargement inquiry commands-3

Command Packet 8x 09 7E 7E 05 FF

Byte	Bit	Comments	Byte	Bit	Comments	Byte	Bit	Comments
0	7	Destination Address	6	7	0	12	7	0
	6			6	0		6	0
	5			5	0		5	0
	4			4	0		4	0
	3	Source Address		3	R-B(L)		3	B-R(L)
	2			2			2	
	1			1			1	
	0			0			0	
1	7	0	7	7	0	13	7	0
	6	1		6	0		6	0
	5	0		5	0		5	0
	4	1		4	0		4	0
	3	0		3	G-R(H)		3	B-G(H)
	2	0		2			2	
	1	0		1			1	
	0	0		0			0	
2	7	0	8	7	0	14	7	0
	6	0		6	0		6	0
	5	0		5	0		5	0
	4	0		4	0		4	0
	3	Color Hue (Color Phase)		3	G-R(L)		3	B-G(L)
	2			2			2	
	1			1			1	
	0			0			0	
3	7	0	9	7	0	15	7	1
	6	0		6	0		6	1
	5	0		5	0		5	1
	4	0		4	0		4	1 Terminator
	3	R-G(H)		3	G-B(H)		3	1
	2			2			2	1
	1			1			1	1
	0			0			0	1
4	7	0	10	7	0			
	6	0		6	0			
	5	0		5	0			
	4	0		4	0			
	3	R-G(L)		3	G-B(L)			
	2			2				
	1			1				
	0			0				
5	7	0	11	7	0			
	6	0		6	0			
	5	0		5	0			
	4	0		4	0			
	3	R-B(H)		3	B-R(H)			
	2			2				
	1			1				
	0			0				



## 4 Command Setting Value

### 4.1 Imaging system command setting values

Model	Command	Value of parameter		Setting value during control	Model	Command	Value of parameter		Setting value during control
CR-N500	IRIS	pp	05	F11	CR-N500	SHUTTER (29.97P)	pp	01	1/4sec
			06	F10				02	1/8sec
			07	F9.5				03	1/15sec
			08	F8.7				04	1/24sec
			09	F8.0				05	1/25sec
			0A	F7.3				06	1/30sec
			0B	F6.7				07	1/34sec
			0C	F6.2				08	1/40sec
			0D	F5.6				09	1/50sec
			0E	F5.2				0A	1/60sec
			0F	F4.8				0B	1/90sec
			10	F4.4				0C	1/100sec
			11	F4.0				0D	1/120sec
			12	F3.7				0E	1/180sec
			13	F3.4				0F	1/250sec
			14	F3.1				10	1/360sec
			15	F2.8				11	1/500sec
	GAIN	pp	00	-6.0dB		SHUTTER (23.98P)	pp	12	1/720sec
			01	-3.0dB				13	1/1000sec
			02	0.0dB				14	1/1400sec
			03	3.0dB				15	1/2000sec
			04	6.5dB				01	1/3sec
			05	10.0dB				02	1/6sec
			06	13.5dB				03	1/12sec
			07	16.5dB				04	1/24sec
			08	19.5dB				05	1/25sec
			09	22.5dB				06	1/30sec
			0A	26.0dB				07	1/34sec
			0B	29.5dB				08	1/40sec
			0C	33.0dB				09	1/48sec
	SHUTTER (59.94i /59.94P)	pp	01	1/4sec				0A	1/50sec
			02	1/8sec				0B	1/60sec
			03	1/15sec				0C	1/100sec
			04	1/24sec				0D	1/120sec
			05	1/25sec				0E	1/180sec
			06	1/30sec				0F	1/250sec
			07	1/34sec				10	1/360sec
			08	1/40sec				11	1/500sec
			09	1/50sec				12	1/720sec
			0A	1/60sec				13	1/1000sec
			0B	1/90sec				14	1/1400sec
			0C	1/100sec				15	1/2000sec
			0D	1/120sec					
			0E	1/180sec					
			0F	1/250sec					
			10	1/360sec					
			11	1/500sec					
			12	1/720sec					
			13	1/1000sec					
			14	1/1400sec					
			15	1/2000sec					

Model	Command	Value of parameter		Setting value during control
CR-N500	SHUTTER (50.00i/ 50.00P)	pp	01	1/3sec
			02	1/6sec
			03	1/12sec
			04	1/20sec
			05	1/25sec
			06	1/30sec
			07	1/33sec
			08	1/40sec
			09	1/50sec
			0A	1/60sec
			0B	1/75sec
			0C	1/100sec
			0D	1/120sec
			0E	1/180sec
			0F	1/250sec
	SHUTTER (25.00P)	pp	10	1/350sec
			11	1/500sec
			12	1/700sec
			13	1/1000sec
			14	1/1400sec
			15	1/2000sec
			01	1/3sec
			02	1/6sec
			03	1/12sec
			04	1/20sec
			05	1/25sec
			06	1/30sec
			07	1/33sec
			08	1/40sec
			09	1/50sec
			0A	1/60sec
			0B	1/75sec
			0C	1/100sec
			0D	1/120sec
			0E	1/180sec
			0F	1/250sec
			10	1/350sec
			11	1/500sec
			12	1/700sec
			13	1/1000sec
			14	1/1400sec
			15	1/2000sec

Model	Command	Value of parameter		Setting value during control
CR-N300	IRIS	pp	05	F8.0
			06	F6.7
			07	F6.2
			08	F5.6
			09	F5.2
			0A	F4.8
			0B	F4.4
			0C	F4.0
			0D	F3.7
			0E	F3.4
			0F	F3.1
			10	F2.8
			11	F2.6
			12	F2.4
			13	F2.2
			14	F2.0
			15	F1.8
	GAIN	pp	00	0.0dB
			01	3.0dB
			02	6.0dB
			03	9.0dB
			04	12.0dB
			05	15.0dB
			06	18.0dB
			07	21.0dB
			08	24.0dB
			09	27.0dB
	SHUTTER (59.94i/ 59.94P)	pp	0A	30.0dB
			0B	33.0dB
			0C	36.0dB
			01	1/8sec
			02	1/15sec
			03	1/24sec
			04	1/25sec
			05	1/30sec
			06	1/34sec
			07	1/40sec
			08	1/48sec
			09	1/50sec
			0A	1/60sec
			0B	1/90sec
			0C	1/100sec
			0D	1/120sec
			0E	1/180sec
			0F	1/250sec
			10	1/360sec
			11	1/500sec
			12	1/720sec
			13	1/1000sec
			14	1/1400sec
			15	1/2000sec

Model	Command	Value of parameter		Setting value during control
CR-N300	SHUTTER (29.97P)	pp	01	1/8sec
			02	1/15sec
			03	1/24sec
			04	1/25sec
			05	1/30sec
			06	1/34sec
			07	1/40sec
			08	1/48sec
			09	1/50sec
			0A	1/60sec
			0B	1/90sec
			0C	1/100sec
			0D	1/120sec
			0E	1/180sec
			0F	1/250sec
	SHUTTER (23.98P)	pp	10	1/360sec
			11	1/500sec
			12	1/720sec
			13	1/1000sec
			14	1/1400sec
			15	1/2000sec

Model	Command	Value of parameter		Setting value during control
CR-N300	SHUTTER (50.00i/ 50.00P)	pp	01	1/6sec
			02	1/6sec
			03	1/12sec
			04	1/20sec
			05	1/25sec
			06	1/30sec
			07	1/33sec
			08	1/40sec
			09	1/50sec
			0A	1/60sec
			0B	1/75sec
			0C	1/100sec
			0D	1/120sec
			0E	1/180sec
			0F	1/250sec
	SHUTTER (25.00P)	pp	10	1/350sec
			11	1/500sec
			12	1/700sec
			13	1/1000sec
			14	1/1400sec
			15	1/2000sec

## 4.2 PTZF command setting values

Model	Command	Value of parameter		Setting value during control
CR-N500/ CR-N300	FOCUS POSITION	pppp	1000	Far end
			:	:
			F000	Near end
	PAN POSITION	pppp	09CA7	-170°
			:	:
			00000	0°
			:	:
CR-N500	ZOOM POSITION	zzzz	F6359	170°
			0000	x1
			:	:
			4000	x15
	TILT POSITION	tttt	:	:
			6000	x300
			E45B	-30°
			:	:
			00000	0°
			:	:
CR-N300	ZOOM POSITION	zzzz	52EF	90°
			0000	x1
			:	:
			4000	x20
	TILT POSITION	tttt	:	:
			6000	x400
			E45B	-30°
			:	:
			00000	0°
			:	:
			52EF	100°

[End]