



NTSC Color Board Camera, DCC-3355AN/AP

Product Outline

DCC-3355AN/AP is a multifunctional color board camera, utilizing 1/3 type interlined transfer CCD with Ye, Cy, Mg, and G complementary mosaic filter installed.

Following functions are noteworthy.

- 42mm x 42mm board
- Backlight mode
- DSP used for signal processing
- External sync, HD/VD
- Maximum x4 images with electrical zoom
- E.Iris, AGC, WB, and other functions selectable with settings of register jumpers

General Specification

Item	Specification	Remarks
Standard	NTSC (DCC-3355AN), PAL (DCC-3355AP)	
Power consumption	1.6 W Max (Vin=DC+12V)	
Power requirements	DC +10.5V ~+15V	
Operation Temperature	Specifications guaranteed: 0°C~+40°C (RH 20~80%) Operation guaranteed: -5°C~+50°C (RH 20~80%)	No condensation
Storage Temperature	-25°C~+60°C (RH 20~80%)	No condensation
Weight	Approx. 20g	
Dimensions	Refer to dimensions	
External Sync.	VS/VBS or SYNC HD/VD	Input Impedance: 4.7KΩ
Video output signals	VBS output • 1Vpp Sync negative Y/C separate output: Y: 1Vp-p Sync negative C: determined by BURST level	75Ω terminal
Pickup Device	1/3 type CCD Effective pixels: 768 (H) x 494 (V): NTSC Effective pixels: 752 (H) x 582 (V): PAL	Sony ICX-408AK ICX-409AK
Lens mount	Dedicated board camera lens	
Horizontal Resolution	450 TV lines	



Item	Specification	Remarks												
Minimum illumination	0.5 Lux (F1.4 equivalent, AGC ON/+39dB, 50% signal level) Reference value													
	<table border="1"> <thead> <tr> <th>F value</th> <th>Signal level: 50%</th> <th>Signal level: 30%</th> </tr> </thead> <tbody> <tr> <td>F1.2</td> <td>0.37 Lux</td> <td>0.23 Lux</td> </tr> <tr> <td>F1.4</td> <td>0.5 Lux</td> <td>0.3 Lux</td> </tr> <tr> <td>F3.0</td> <td>2.3 Lux</td> <td>1.38 Lux</td> </tr> </tbody> </table>		F value	Signal level: 50%	Signal level: 30%	F1.2	0.37 Lux	0.23 Lux	F1.4	0.5 Lux	0.3 Lux	F3.0	2.3 Lux	1.38 Lux
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	F1.2		0.37 Lux	0.23 Lux										
	F1.4		0.5 Lux	0.3 Lux										
F3.0	2.3 Lux	1.38 Lux												
Sensitivity	F5.6 equivalent and over, 2000 Lux	3200K												
Color Temperature	3200 ± 50K													
Mode Settings	Auto Gain	AGC: OFF/ON/others	Set by soldering register jumpers.											
	White Balance	WB: 3200/ 5600 /ATW/ Others												
	Electric Shutter	ES: OFF/FL/EI/Others												
S/N Ratio	<table border="1"> <tbody> <tr> <td>48dB for NTSC</td> <td>49dB for PAL</td> </tr> <tr> <td>Camera Conditions</td> <td>Measurement Equipment Conditions</td> </tr> <tr> <td>Aperture: OFF</td> <td>SC TRAP ON</td> </tr> <tr> <td>Gamma: OFF</td> <td></td> </tr> <tr> <td>AGC: 0dB</td> <td>100kHz ~ 5.2 MHz</td> </tr> </tbody> </table>	48dB for NTSC	49dB for PAL	Camera Conditions	Measurement Equipment Conditions	Aperture: OFF	SC TRAP ON	Gamma: OFF		AGC: 0dB	100kHz ~ 5.2 MHz			
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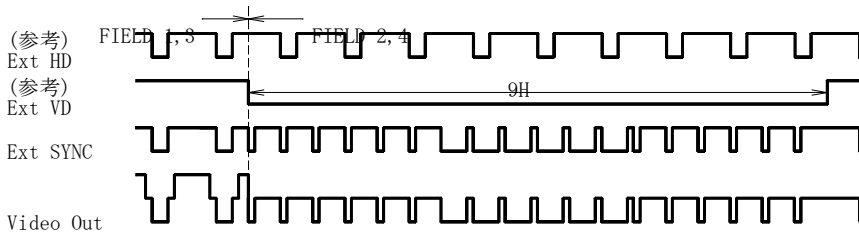
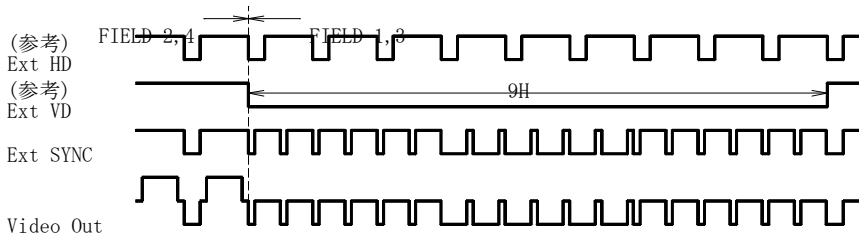
External Sync

Item	Specification	Remarks
Amplitude of Input Signals	VS, VBS, or SYNC 0.3V±3dB or 2~5V to EXT HD/SYNC terminal HD/VD 2~5V HD to EXT HD/SYNC terminal 2~5V VD to EXT VD terminal	
Input Frequency	Horizontal Frequency at SYNC or HD/VD NTSC: 15.73426 kHz ± 12ppm PAL: 15.62500 kHz ± 12ppm	
Phase Adjustment	At SYNC or HD/VD with remote adjustment Horizontal phase of camera VBS output should move over ±10 μs to the one of external signals.	With remote adjustment

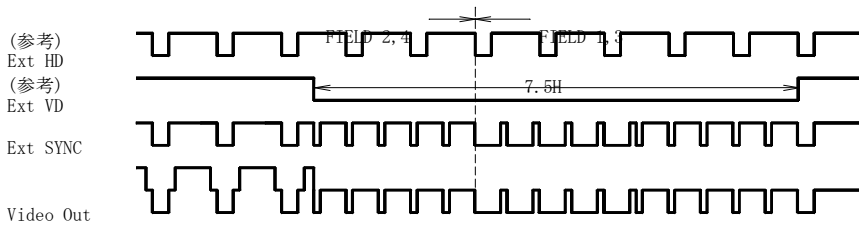
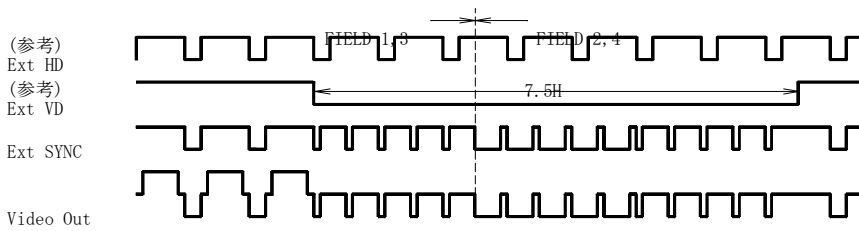


External Sync Timing Chart

NTSC (SYNC/ HD · VD)



PAL (SYNC/ HD · VD)





Camera Functions and Signals Specifications

Item	Specification	Remarks
White Clip Level	NTSC 120 ± 8 IRE PAL 850 ± 60mV	
Setup Level	NTSC 5 ± 4 IRE PAL 35 ± 20mV	AGC OFF
SYNC Level	NTSC 40 ± 4IRE PAL 300 ± 30mV	
Sync Signals Frequency	NTSC 15.73426 kHz ±12ppm PAL 15.62500 kHz ±12ppm	Include Temperature Characteristics
Sub Carrier Frequency	NTSC 3.579545 MHz ±12ppm PAL 4.433618 MHz ±12ppm	Include Temperature Characteristics
Gannma Compensation	Must be close to 0.45	
Burst Level	NTSC 40 ± 4 IRE PAL 300 ± 30mV	

Mode Settings

Gain Selection

JP1	Gain Selection
No Mount	AGC ON MaxGain 39dB (Analog 24dB, Digital 15dB)
470KΩ	AGC ON MaxGain 48dB (Analog 24dB, Digital 24dB)
220KΩ	+24dB Fixed (Analog Gain)
120KΩ	+18dB Fixed (Analog Gain)
82 KΩ	+12dB Fixed (Analog Gain)
47KΩ	+6dB Fixed (Analog Gain)
22KΩ	AGC OFF (0dB Fixed)
0Ω	AGC ON MaxGain 24dB (Analog 24dB)

Register chip size shall be 1.6×0.8mm to be used.

When gain value becomes bigger by AGC and fixed gain, make its color lighten.



Shutter Selection

JP 2	Shutter Selection
No Mount	E.IRIS ON 1/60(50)~1/30000 () shows value for PAL.
470KΩ	1/40000 fixed
220KΩ	1/2000 fixed
120KΩ	1/1000 fixed
82 KΩ	1/500 fixed
47KΩ	1/250 fixed
22KΩ	FL(flicker less) 1/100(1/120) () shows value for PAL.
0Ω	E.IRIS OFF 1/60 (1/50) () shows value for PAL.

Register chip size shall be 1.6×0.8mm to be used.

White Balance / Back Light Selection

JP 3	White Balance Selection	Back Light Selection *2
No Mount	ATW(2600K~9000K)	OFF (Full photometry)
470KΩ	ATW LOCK *1	OFF (Full photometry)
220KΩ	5600°K fixed	OFF (Full photometry)
120KΩ	3200°K fixed	OFF (Full photometry)
82 KΩ	3200°K fixed	ON (Center Part photometry)
47KΩ	5600°K fixed	ON (Center Part photometry)
22KΩ	ATW LOCK *1	ON (Center Part photometry)
0Ω	ATW(2600K~9000K)	ON (Center Part photometry)

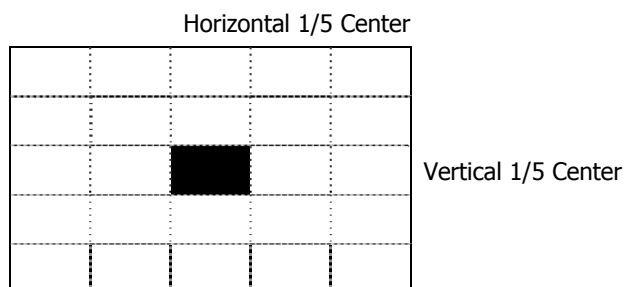
Register chip size shall be 1.6×0.8mm to be used.

*1 ATW LOCK is a function to keep the status when ATW is on and locked.

*2 Back Light selection is to set the photometry range of E.Iris, and AGC.

ATW range is always entire screen.

Center Photometry Range





Electric Zoom

JP 4	Electric Zoom
No Mount	Electric Zoom STOP
22K Ω	Electric Zoom TELE (MAX 4 times)
0 Ω	Electric Zoom WIDE

Register chip size shall be 1.6×0.8mm to be used.

External Sync

EXT HD/SYNC Terminal (CN1-7)	EXT VD Terminal (CN1-5)	Sync Mode
Without Signal	Without Signal	Internal Sync
EXT SYNC Signal Input	Without Signal	External Sync SYNC Mode
EXT HD Signal Input	EXT VD Signal Input	External Sync HD/VD Mode

External Sync modes are determined automatically by input signals to EXT HD/SYNC terminal and EXT VD terminal.

- * Please note not to input signals other than specified the above.
- * When external sync is used with AGC ON, noises may be seen occasionally.

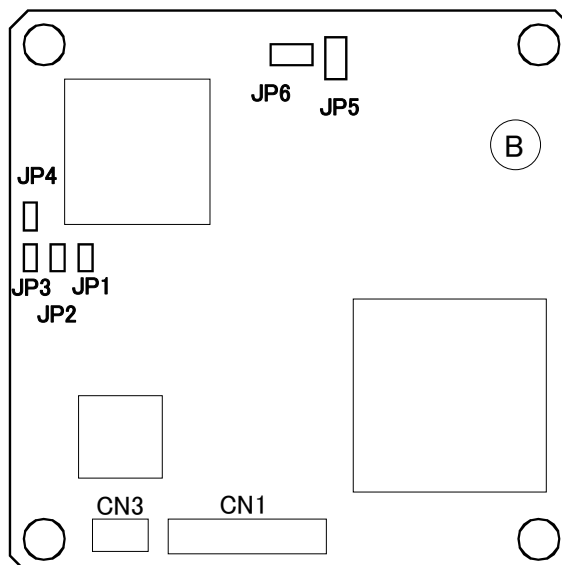
Input Impedance of EXT HD/SYNC Terminal and EXT VD Terminal can be switched by JP5 and 6.

JP 5	EXT HD/SYNC Terminal
No Mount	4.7 K Ω
75 Ω	75 Ω

Register chip size shall be 2.0x12.5mm to be used.

JP 6	EXT VD Terminal
No Mount	4.7 K Ω
75 Ω	75 Ω

Register chip size shall be 2.0x12.5mm to be used.





Input/Output Connectors

	Connectors on Board	Connectors to match	Manufacturer
CN1 (For Power, Video, and External Sync)	BM10B-SRSS-TB(LF)(SN)	Housing: SHR-10V-S-B / SHR-10V-S Contact: SSH-003T-P0.2	NICHIATSU
CN3 (For Remote control)	BM02B-SRSS-TB(LF)(SN)	Housing: SHR-02V-S-B / SHR-02V-S Contact: SSH-003T-P0.2	NICHIATSU
CN2 (For DC IRIS)	BM04B-SRSS-TB(LF)(SN)	Housing: SHR-04V-S-B / SHR-04V-S Contact: SSH-003T-P0.2	NICHIATSU

Input/Output Pin Assignment

CN1	Signals	
1	POWER	Power Input
2	GND	Power GND
3	VIDEO OUT	VIDEO Output Signals
4	GND	GND
5	EXT VD	External Sync VD Input
6	GND	GND
7	EXT HD/SINC	External Sync HD/SYNC Input
8	IRIS OUT	Simulated signal output for Video Iris
9	C OUT	Color signal output
10	Y OUT	Luminance signal output

CN3	Signals	
1	REMOTE	Remote Control signal Input/Output
2	GND	GND



CN2 is to be used when galvanic-typed lens is used.

CN2	Signals	
1	DUMP+	DC IRIS 用 DUMP+出力
2	DUMP-	DC IRIS 用 DUMP-出力
3	DRIVE-	DC IRIS 用 DRIVE-出力
4	DRIVE+	DC IRIS 用 DRIVE+出力

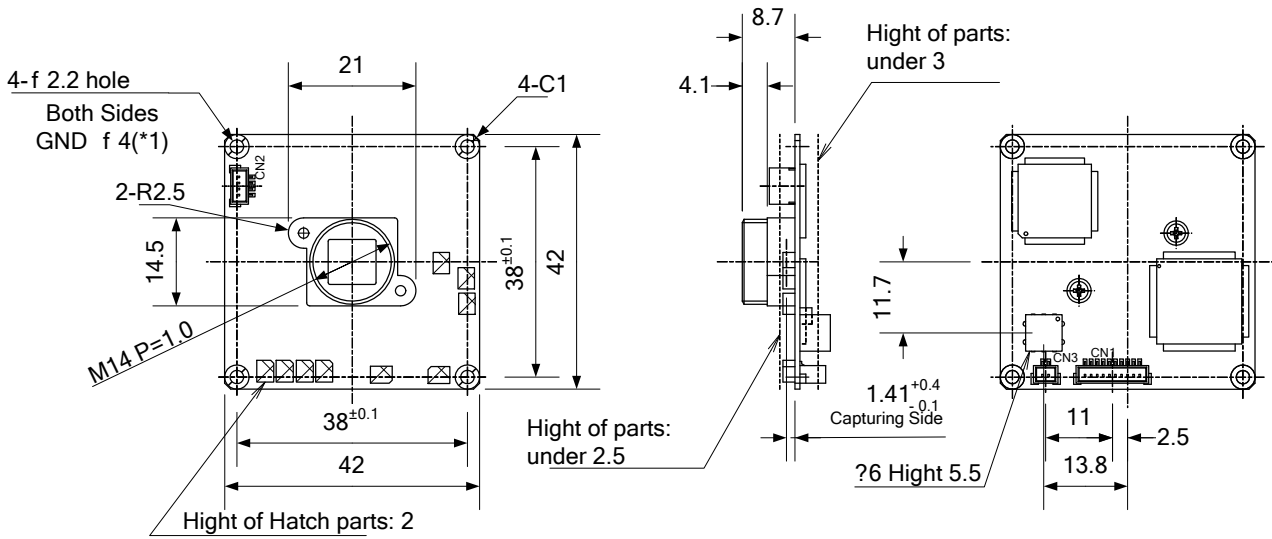
Note)

Video Iris/DC Iris output is output regardless of E.Iris ON/OFF. Therefore, please set E.Iris OFF when Video Iris lens or DC Iris lens is used. If E.Iris is ON, both E. Iris and Video Iris works at the same time and it may cause unstable camera operation.

Initial Settings

JP1	JP2	JP3	JP4	JP5	JP6
No Mount	No Mount	No Mount	No Mount	No Mount	No Mount
AGC ON Max 39dB	E.IRIS ON	ATW BLC OFF	Electric Zoom STOP	EXT_HD/SYNC Input Impedance 4.7K	EXT_VD Input Impedance 4.7K

• Dimensions



*1) Do not use any component parts which sticks out from GND land, when screw hols at four corners are used.