

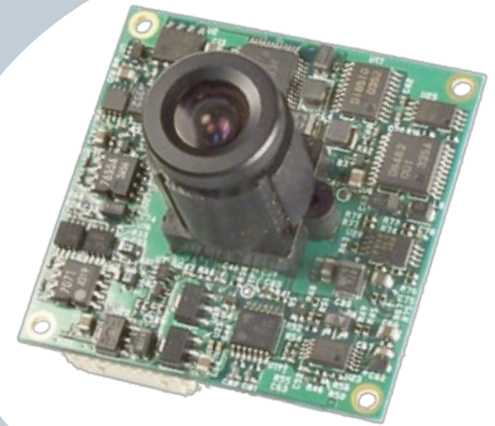
1/3" High Resolution Color Board Camera

RHPC-680



1/3" Color Super HAD CCD
42x42mm Single Board
Internal or External Synchronization
12Volt DC Operation
Low Smear
Parameters Controllable via PC Software

| | |
|-----------------------------|--------------------|
| — Mirror Image | — Edge Enhancement |
| — Negative / Positive Image | — White Balance |
| — Gain Control | — Croma |
| — Fixed Shutter Speed | — Aperature |

* PC Interface Required (RHPC-RE680 with Software)

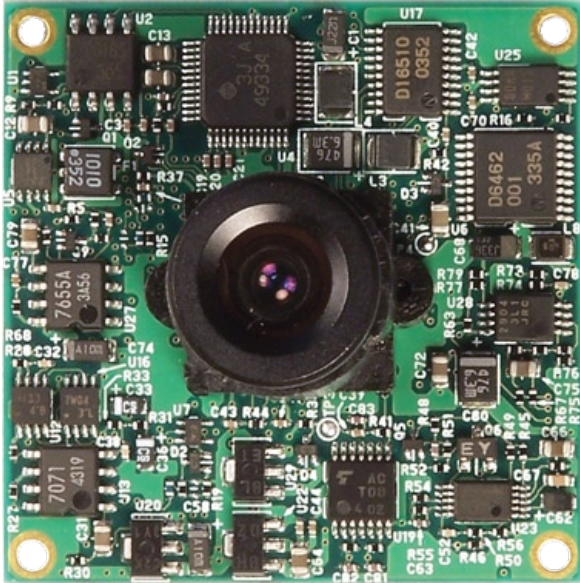


RHPC-680 (NTSC)
RHPC-685 (PAL)

| Specifications | RHPC-680 (NTSC) | | RHPC-685 (PAL) | Dimensions 42x42mm |
|--------------------------|---|--|---------------------------------------|---|
| Image Sensor | 1/3" Inter-line Type CCD Image Sensor / SONY Super HAD CCD | | | <div><p>* ACTUAL SIZE</p><p>42 mm</p><p>42 mm</p><p>* Actual photo size may vary depending on print scaling</p><p>** Specifications and availability of products are subject to change without notice</p></div> |
| Scanning System | 2 : 1 Interlace | | | |
| Total Number of Pixels | 811 (H) x 508 (V) | | 795 (H) x 596 (V) | |
| Effective Pixel Elements | 768 (H) x 494 (V) Approx. 380k Pixels | | 752 (H) x 582 (V) Approx. 410k Pixels | |
| Lens - Standard | Fixed Iris Mini-Lens 5.6mm, F3 - Other Lens Options Available | | | |
| Synchronization | Internal / External Video Drive or Line Lock | | | |
| Ext. Sync | Video Drive or Line Lock | | | |
| Video Output | Composite / 1 Vp-p 75 Ω | | | |
| Horizontal Resolution | More than 500 Lines | | More than 470 Lines | |
| Min. Illumination | 0.5 Lux (Video Output 50%, AGC ON, F1.4) | | | |
| S/N Ratio | 50 dB or better | | | |
| Electronic Iris (Auto) | 1/60 ~ 1/120,000 Sec. | | 1/50 ~ 1/120,000 Sec. | |
| Electronic Iris (Manual) | Selectable Via Software | | | |
| Electronic Shutter | Auto or Flickerless Selectable Via Contacts | | | |
| Horizontal Drive Freq. | 15.734 kHz (NTSC) | | | |
| Vertical Drive Freq. | 59.94 Hz (NTSC) | | | |
| Gamma Characteristics | 0.45 | | | |
| AWB (Auto White Balance) | Auto or Fixed Via Contacts & Fully Adjustable Via Software | | | |
| AGC (Auto Gain Control) | ON/OFF Selectable Via Contacts & Manual Control Via Software | | | |
| BLC (Back Light Comp.) | Full Screen or Center Via Contacts | | | |
| Auto Iris lens Output | Video Type | | | |
| Power Requirements | DC 12Volts +/- 1Volt | | | |
| Current Consumption | Max 120 mA (at DC 12Volts) | | | |
| Storage Temp. Humidity | -20°C ~ +60°C - Max. 90% (No Condensation) | | | |
| Operating Temp. Humidity | -5°C ~ +45°C - Max. 80% (No Condensation) | | | |
| Dimensions | 42 (W) x 42 (L) x 31.1 (H) mm | | | |
| Weight | Approx. 25g | | | |

REV: D

RHPC-680B - Connections



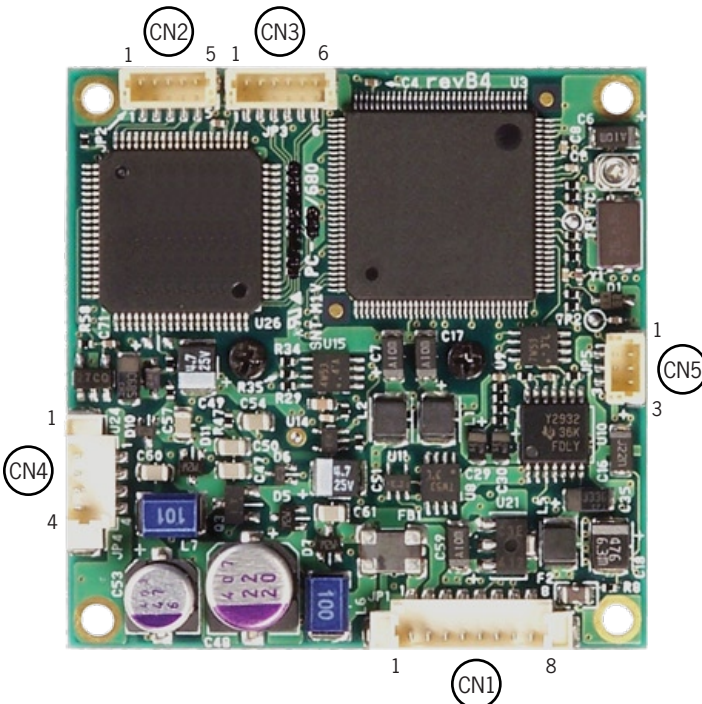
- CN1** - I/O Connector
- CN1-1 - DC 12V IN
 - CN1-2 - GND
 - CN1-3 - Video Out
 - CN1-4 - GND
 - CN1-5 - SYNC IN (VS)
 - CN1-6 - GND
 - CN1-7 - VD/(L/L Pulse) IN
 - CN1-8 - GND

- CN2** - Communication Connector
- CN2-1 - GND
 - CN2-2 - DIR
 - CN2-3 - TXD
 - CN2-4 - RXD
 - CN2-5 - +3.3Volt Out

- CN3** - KEY-SW Connector
- CN3-1 - GND
 - CN3-2 - RIGHT
 - CN3-3 - LEFT
 - CN3-4 - DOWN
 - CN3-5 - UP
 - CN3-6 - ENTER

- CN4** - DC-IRIS Connector
- CN4-1 - DMP-
 - CN4-2 - DMP+
 - CN4-3 - DRV+
 - CN4-4 - DRV-

- CN5** - VIDEO-IRIS Connector
- CN5-1 - GND
 - CN5-2 - SIGNAL (at ALC Out)
 - CN5-3 - +9Volt



RHPC-280B/680B - On Screen Display

1. OSD Setup

Keep pushing “ENTER” until OSD screen appears.
Current setting position is shown and the article to be changed starts flashing.

| <MENU> | |
|---------|------|
| TITLE | OFF |
| ALC/ELC | ELC. |
| BLC | OFF |
| AGC | ON. |
| W/B | ATW |
| SYNC | INT |
| OPTION. | SET. |
| ZOOM | OFF |
| EXIT | SAVE |

By pushing “Up” & “Down”, flashing article moves UP and DOWN and you can select the article to be changed.

By pushing “Left” & “Right” change of setup is available.

When “ . ” is shown and push “ENTER”, detailed setup of each article appears.

TITLE
When the TITLE is flashing, ON & OFF are changeable by each pushing of “Left” & “Right”.
At the time of ON, by pushing “ENTER”, EDIT mode of TITLE appears.

| <TITLE> |
|----------------|
| ABCDEFGHIJKLM |
| NOPQRSTUVWXYZ |
| 0123456789 .;: |
| X-/<> |
| SP → ← SP |
| LOCATION. |
| Return |
| |

Current TITLE is shown at the last line and changeable word position flashes.

Flashing word position shifts by pushing “Up” “Down” “Left” and “Right” to each direction, and by pushing “ENTER” its word is set up at the flashing position of TITLE.

* At the TITLE part, “ . ” showing Blank and “ . ” at the right of the 9 are shown as same. So, be careful on this point when setting up.

* SP → means shift of changeable word position to right direction and ← SP means to left direction.

When LOCATION is flashing, by pushing “ENTER”, shift of display position of TITLE is available.
Available directions of shift are Right-Up, Right-Down, Left-Up, and Left-Down. And by pushing “Up” “Down” “Left” and “Right”, position change is available and by pushing “ENTER”, screen returns to EDIT mode of TITLE

Return from EDIT mode of TITLE is available by making Return flashing and flashing and push “ENTER”

RHPC-280B/680B - On Screen Display

ALC/ELC:

When ALC/ELC is flashing, by each pushing of “Left” & “Right”, ALC. (Auto Lens Control) and ELC. (Electro Luminance Control) are changeable. For use of Auto Iris Lens or for fixing Electronic Shutter Speed, set up ELC. for adjustment of brightness by using electronic shutter.

| | |
|-----------|---------|
| << ALC >> | |
| SHUTTER | OFF |
| LEVEL | >-----< |
| Return | |

In case of ALC., by pushing “ENTER”, setting screen of SHUTTER, LEVEL appears.

When SHUTTER is flashing, by pushing “Left” & “Right”, setting of Electronic Shutter is available, OFF ~ 1/12000 16 steps.

When LEVEL is flashing, by pushing “Left” & “Right”, setting of Brightness is available. (in case of Auto Iris Lens)

In case of ELC, by pushing “ENTER”, setting screen of LEVEL appears. Operation in case of ALC is same.

LEVEL adjustment is made by IA Electronic Shutter adjustment, and there is not article of SHUTTER.

BLC:

When BLC is flashing, by each pushing of “Left” & “Right”, ON and OFF are changeable. In case ON., by pushing “ENTER”, setting mode of AREA appears on screen.

| | |
|-----------|------|
| << BLC >> | |
| AREA | SET. |
| PRESET | OFF |
| Return | |

In case of PRESET OFF, setting of light measuring area at BLC ON is available by AREA article.

When AREA is flashing, by pushing “ENTER”, Measuring Area Selection screen at BLC appears.

In Area Selection screen, 7 x 6 (42 blocks) divided screen is shown, and measuring blocks are colored gray. Selection of measuring blocks is made by pushing “Up”, “Down”, “Left” and “Right” and shift flashing blocks. By pushing “ENTER”, current setting of the blocks reverses.

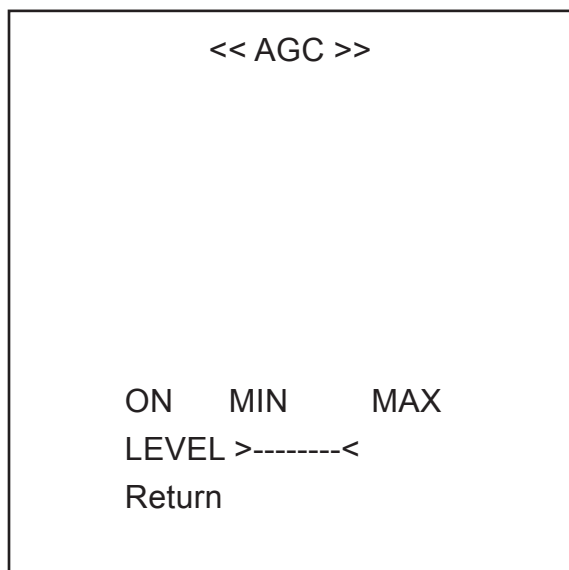
* For return to former screen, it is available by pushing “ENTER” continuously.

When PRESET is flashing, ON & OFF change is available by pushing “Left” and “Right”. In case of PRESET ON, measuring area of BLC is fixed with 4 x 3 (12 blocks) at center lower part and measuring area setting in area above mentioned is impossible.

RHPC-280B/680B - On Screen Display

AGC:

When AGC is flashing, ON.,MANUAL.,OFF is changeable by pushing “Left” & “Right”.



When ON. and MANUAL is selected, by pushing “ENTER”, Gain setting screen appears.

When LEVEL is flashing, by pushing “Left” & “Right”, Gain setting is available.

ON. For setting of Maximum Gain of AGC

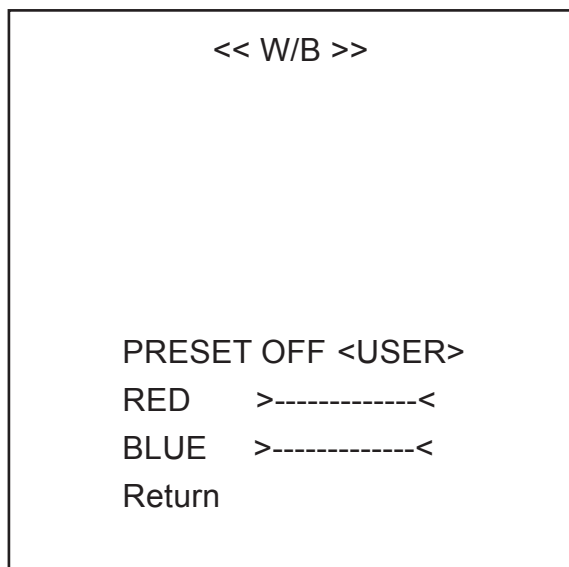
MANUAL For setting of usual gain

When return is flashing by pushing “Up” & “Down”, screen returns to former screen after pushing “ENTER”.

W/B:

When W/B is flashing, AWC, ATW and MANU. are changeable by each pushing of “Left” & “Right”.

In case of MANU., by pushing “ENTER”, screen for W/B adjustment mode appears.



When PRESET is flashing, 3200K, 5100K, and OFF <USER> are changeable by pushing “Left” & “Right”.

Only when PRESET is OFF <USER>, adjustment of RED and BLUE is shown, and setting of white balance is freely available.

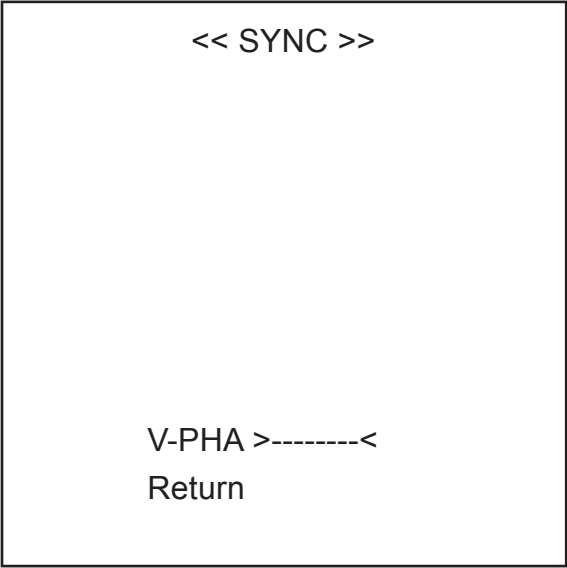
After making PRESET setting OFF <USER>, RED or BLUE starts flashing by pushing “UP” and “Down”, and then adjust each value by pushing “Left” and “Right”.

In case of AWC, by pushing “ENTER”, AWC starts flashing, and its white balance is maintained.

RHPC-280B/680B - On Screen Display

SYNC:

When SYNC is flashing, INT, VBS, and LINE. are changeable by each pushing of “Left” and “Right”.



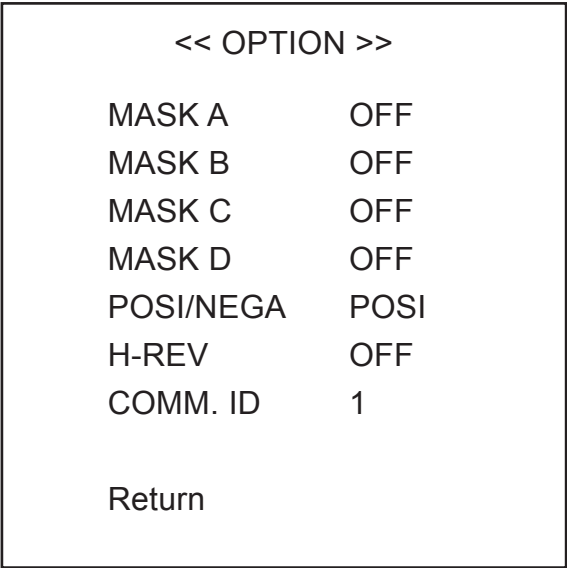
When VBS. and LINE. is selected, by pushing “ENTER”, adjustment screen of PHASE appears.
When H-PHA (in case of VBS) and V-PHA (in case of LINE) Are flashing, PHASE adjustment is available by pushing “Left” and “Right”.

* When Ext. Sync mode is set, screen becomes gray without input of External Signal. Under such situation, shift to Internal Sync mode is impossible, due to SYNC article being locked.

For release of such lock, keep pushing both “Left” and “ENTER” at the same time, during SYNC is flashing.

OPTION:

When OPTION is flashing, screen for OPTION setting appears by pushing “ENTER”.



Function of OPTION

* MASK
Masking by gray-colored square against any place and size is available. Maximum 4 places and multi-layers of masking is possible.

*POSI/NEGA
Liminance and Color phase are reversible by pushing “Left” and “Right”, when POSI/NEGA is flashing.

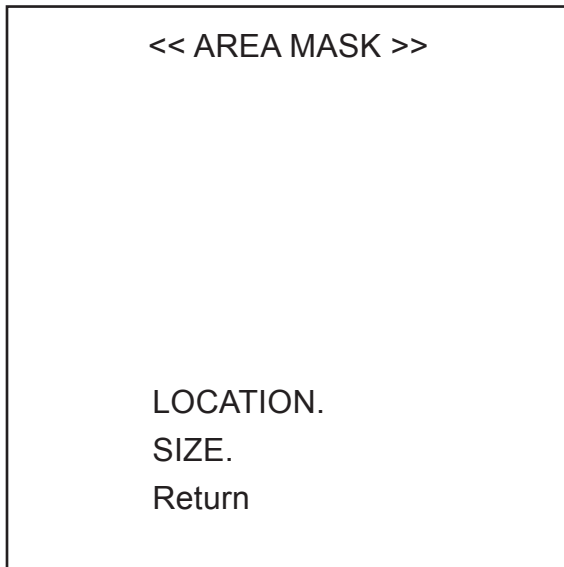
*H-REV (Mirror reverse)
Right and Left of screen is reversed.
When H-REV is flashing, Right/Left reverse screen and normal screen are changeable by pushing “Left” and “Right”.

* COMM.ID
ID for communication is allocated to camera.
When COMM.ID is flashing, allocation - 1 is available by pushing “Left” and +1 by “Right”.

RHPC-280B/680B - On Screen Display

OPTION (MASK)

When anyone of A, B, C and D in MASK article in OPTION setting is flashing, ON. and OFF are changeable by each pushing "Left" and "Right".



In case of ON., by pushing "ENTER", MASK setting screen appears.

When LOCATION. is flashing, by pushing "ENTER", screen of MASK position shift appears and MASK is shown. Shift of MASK position is available by pushing "Up", "Down", "Left" and "Right".

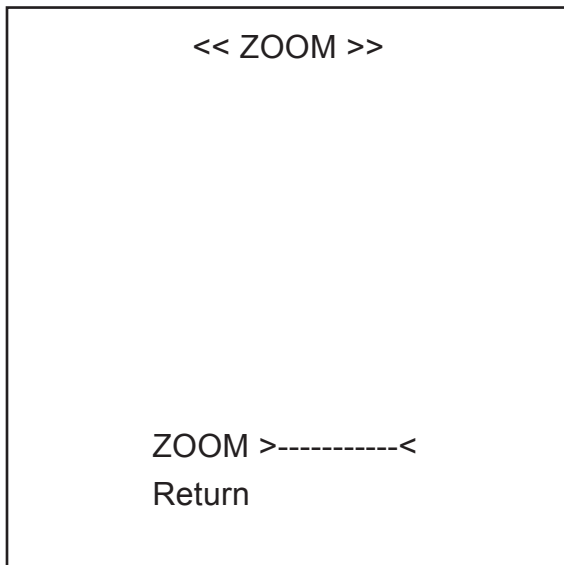
For return from this screen, keep pushing "ENTER".

When SIZE is flashing, screen for MASK size modification appears by pushing "ENTER" and MASK is shown. By moving the Right-Down part of each MASK by pushing "Up", "Down", "Left", and "Right", modification of MASK size is available.

For return from this screen, keep pushing "ENTER".

ZOOM:

When ZOOM is flashing, by each pushing of "Left" and "Right", ON. and OFF are changeable.



In case of ON., screen for setting of magnification rate of ZOOM appears by pushing "ENTER".

When ZOOM is flashing, magnification rate is changeable by pushing "Left" and "Right".

Magnification rate is 1.0 ~ 2.0 Max. at center of screen.

Accuracy of screen becomes lower due to magnification by digital zooming.

EXIT

When EXIT is flashing, change of SAVE and PRESET is available by each pushing of "Left" and "Right".

In case of SAVE, change is memorized by pushing "ENTER". When making Power ON next time, the same memorized setting starts. In case of PRESET, by pushing "ENTER", setting returns to original setting.

If making Power OFF without SAVE, changed setting is not memorized and the former setting starts when making Power ON next time.