



Atomos Connect-AC

Connect-AC S2H & H2S User Guide



Congratulations on purchasing your rack-mountable Connect-AC converter and Test Pattern Generator. You are now the proud owner of an extremely compact and versatile converter.

The built-in Test Pattern Generator has multiple patterns, in both SD

and HD, the latter including 1080p50 and 60 – true 3G modes.

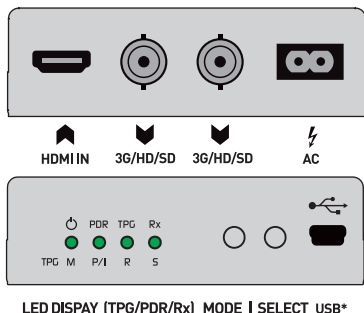
The modes are indicated by coloured LEDs, which are explained in this QuickStart Guide. Learn the colour sequences and modes for fast and easy operation.

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What's in the box

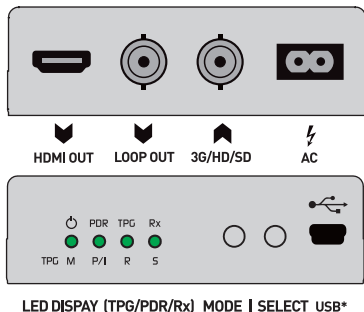
CONNECT-AC H2S HDMI→HD-SDI (Part No. ATOMACH001)

- ☐ Connect-AC H2S
- ☐ Power Cable



CONNECT-AC S2H HD-SDI→HDMI (Part No. ATOMACS001)

- ☐ Connect-AC S2H
- ☐ Power Cable



NOTE:

This User Guide pertains to both Connect-AC units. Each box contains one converter only.

Unit description

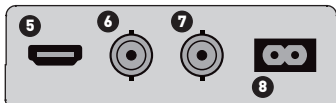
CONNECT-AC

1. LED DISPLAY
2. SELECT
3. MODE
4. USB port
(firmware updates only)
5. HDMI port
(H2S in / S2H out)
6. SDI CONNECTOR
(H2S out / S2H out)
7. SDI CONNECTOR
(H2S out / S2H in)
8. AC input
9. SCREW HOLES FOR
RACK MOUNTING
(both sides)

FRONT



BACK



LEFT



RIGHT















LED LABELS

PDR	Pulldown Removal
TPG	Test Pattern Generator
Rx	Conversion Input Status
TPG→	(TEST PATTERN MODE)
M	Mode
P/I	Progressive/Interlaced
R	Rate
S	Scan

LED INDICATOR OVERVIEW

There are 3 modes of operation indicated by LEDs.

MODE	LED COLOUR
CONVERTER MODE	   
TPG MODE	   
FLASHLIGHT MODE	   

Operation

MODES OF OPERATION

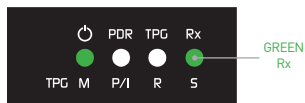
The Connect-AC converter has two modes of operation: **Converter** and **Test Pattern Generator (TPG)**. To switch between them, press and hold the **MODE** button for more than 2 seconds. A mode change will be indicated by the TPG LED illuminating GREEN for TPG Mode and the Rx LED illuminating RED or GREEN for Converter Mode.

NOTE: Connect-AC S2H converts SDI to HDMI and Connect-AC H2S converts HDMI to SDI when in Converter Mode.

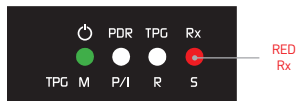
Converter Mode

The Rx LED indicates when an input signal has been locked and is being converted. See the pulldown removal (PDR) section for PDR during conversion. Connect-AC supports 16, 20 & 24-bit audio in all modes of conversion.

A GREEN Rx LED indicates a locked video signal is being converted.



A RED Rx signal indicates searching for a signal for conversion.



Supported formats

Connect-AC S2H: HD-SDI→HDMI

1080p60	1080psf30
1080p59.94	1080psf29.97
1080p50	1080psf25
1080i60	1080psf24
1080i59.94	1080psf23.98
1080i50	720p60
1080p30	720p59.94
1080p29.97	720p50
1080p25	486i59.94
1080p24	480i59.94
1080p23.98	576i50

Connect-AC H2S: HDMI→HD-SDI

1080p60	1080psf30
1080p59.94	1080psf29.97
1080p50	1080psf25
1080i60	1080psf24
1080i59.94	1080psf23.98
1080i50	720p60
1080p30	720p59.94
1080p29.97	720p50
1080p25	486i59.94
1080p24	480i59.94
1080p23.98	576i50

Operation

Pulldown Removal (PDR)

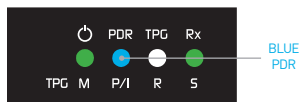
Both Connect-AC converters can apply 2:2 pulldown to incoming interlaced and psf signals in order to restore their original 23.98p, 24p, 25p, 29.97p or 30p formatting.

Please note that 3:2 pulldown is NOT supported by the Connect-AC.

When the Connect is in Converter Mode and locked (Rx) to an interlaced signal (1080i) that has had pulldown applied, the pulldown (PDR) function can be used.

2:2 Pulldown Removal Operation

To activate the 2:2 pulldown function, press the **MODE** button once. The PDR LED will turn BLUE.



The unit will then convert as follows:

INPUT		OUTPUT
23.98psf	→	23.98p
24psf	→	24p
25psf	→	25p
29.97psf	→	29.97p
30psf	→	30p
50i	→	25p
60i	→	30p

NOTE: If the input signal is not interlaced, the PDR function is disabled.

Pressing the **MODE** button a third time turns off the pulldown.

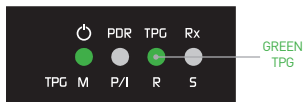
Operation

Test Pattern Generation Mode

A major part of video engineering is signal testing and verification. The Connect-AC is also a convenient test solution for these tasks. With four built-in test patterns and SD, HD as well as 3G video modes supported, you can test your equipment in a cost effective, professional way. When in Test Pattern Generation (TPG) Mode, both the video mode and the test pattern output can be changed.

Using TPG

TPG Mode is entered by pressing and holding the **MODE** button for more than 2 seconds. This mode will be indicated by a GREEN LED on the TPG indicator.



This is the TPG Home state. To return to Converter Mode, press the **MODE** button again for more than 2 seconds.

TPG Mode ON (Home)




After TPG Mode has been activated, pressing the **MODE** button at any time will utilise all four LEDs to indicate the current video output mode, as per the following indicators.

Operation



TPG Video Mode Indication

The TPG colour code indicators for the TPG video modes are **M**, **PI**, **R** and **S**. These correspond to the following video formats:



MODE – indicates video resolution

-  RED = under 1080 Resolution – (486i59.94, 576i50, 720p59.94, 720p50)
 -  GREEN = Standard 1920x1080 formats (23.98p, 24p, 25p, 29.97p, i50, i59.94)
 -  BLUE = 3G 1920x1080 formats (p50, p59.94)
-



P/I – indicates Progressive or Interlaced video formats

-  GREEN = Progressive
 -  No Light = Interlaced
-

RATE – indicates video clock rate/region

-  GREEN = NTSC frame rates (23.98, 29.97, 59.94 Hz)
 -  BLUE = PAL Frame Rates (24, 25, 50 Hz)
-

SCAN – indicates scan rates

-  GREEN = film scan rates (23.98, 24 Hz)
 -  No Light = television rates (29.97, 59.94, 25, 50 Hz)
-

NOTE: The TPG video mode indication will last for 4 seconds before returning to TPG Home page.

Connect-AC H2S outputs TPG on both SDI outputs.

Connect-AC S2H outputs TPG on both the HDMI and the LOOP OUT SDI.

Operation

Changing the TPG Video Mode

When the Connect-AC is in TPG video mode, the video output mode can be changed by pressing the **MODE** button a second time.

Each subsequent press of the **MODE** button while in this state will cause the Connect-AC to scroll through video modes in the following shown to the right (This TPG guide is included with your converter as a quick reference card and sticker).

NOTE: You must first enter the TPG Video Indication mode in order to change the current TPG video output format.

TPG	MODE	P/I	RATE	SCAN
NTSC	●	○	●	○
720 59	●	●	●	○
1080i 59	●	○	●	○
p29	●	●	●	○
p59	●	●	●	○
p23	●	●	●	●
p24	●	●	●	●
PAL	●	○	●	○
720 50	●	●	●	○
1080i 50	●	○	●	○
p25	●	●	●	○
p50	●	●	●	○

Operation

Changing the Test Pattern Output

While the Connect-AC is indicating the TPG video mode, the type of test pattern output can be changed by pressing the **PWR/BAT** button.

Each subsequent press of the **PWR/BAT** button while in this state will cause the Connect-AC to scroll through the 4 test patterns available in the following order:

NOTE: To change the test pattern in use, you must first be in TPG Mode, have activated the TPG Video Format Indicator and while in this mode press the **PWR/BAT** button.

To return back to Converter Mode, press and hold the **MODE** button for more than 2 seconds.



1. SMPTE Colour Bars 75%



2. SDI EQ/PLL Pathological



3. Colour Bars 75%



4. Colour Bars 100%

Operation

Time Code Pass-Through



**TIMECODE
PASS-THROUGH**

Connect-AC converters are designed to convert everything from one standard to another, this includes timecode (TC) and record start/stop trigger flags (S/S). SDI TC will be converted to HDMI TC on S2H and HDMI TC will be converted to SDI TC on H2S. This allows perfect translation of all parts of the video standards between HDMI and SDI. Connect-AC converters support Sony, Canon, Panasonic, JVC, Arri and RED SDI TC and S/S. In HDMI they support Canon and Sony TC and Canon's S/S, currently the only HDMI TC and S/S protocols available.

Flashlight function

The Connect-AC also has a handy flashlight function that will illuminate all LEDs WHITE.

To activate the flashlight, press both the **MODE & PWR/BAT** button at the same time. This mode can be activated in any mode of operation.

To turn the flashlight off, press either button, **MODE** or **PWR/BAT**.

Firmware updating

The firmware of the Connect series converters can be updated via the USB mini port. Detailed instructions on how to update your converter can be found at:

www.atomos.com/support

Warranty & Conditions

Notice

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International Hardware Limited

Warranty (1 Year Standard/2 Years If Registered)

Atomos warrants that:

- the main product will be free from defects in materials and workmanship for a period of 1 year from the date of purchase or 2 years upon completion of product registration at www.atomos.com/registration
- the battery and battery charger will be free from defects in materials and workmanship for a period of 6 months from the date of purchase regardless of registration.

This warranty is exclusively for the benefit of the original purchaser and is not assignable or transferable.

If during the warranty period the product is shown to be defective Atomos may at its option:

- replace the goods or supply equivalent ones;
- repair the goods;
- pay the cost of replacing the goods or of acquiring equivalent ones;
- pay the cost of having the goods repaired;

The customer must notify Atomos of any defect in the goods in writing prior to the expiry of the warranty periods set out above. The customer will be solely responsible for returning the goods to Atomos or its authorized distributor. Upon acceptance of a warranty claim by Atomos, where Atomos repairs or replaces the goods, it will be responsible for reasonable shipping costs incurred in sending the goods to the Customer, provided that customer is located in a country in which Atomos has an authorized distributor or repair centre or agent.

Warranty Exclusions

This warranty applies only to defects in workmanship and does not cover defects caused by:

- Failure to comply with the current operating instructions issued by Atomos
- Neglect
- Improper or negligent acts or omissions
- Unauthorised repairs or attempted repairs
- Tampering with, or modification of the goods
- Connection to incompatible equipment or power sources
- Exposure to water or weather
- Exposure to magnetic fields or corrosive liquids or substances

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Technical Specifications

Connect-AC S2S / Connect-AC H2S

Weight & Dimensions	150g / 85.0mm (w) x 90.0mm (l) x 25.0mm (h)	
AC Power	100-240VAC, 0.2A, 50-60Hz	
Power Consumption	2W while converting	
2:2 Pulldown Removal	• 25PsF (50i) → 25P • 30PsF (60i) → 30P • 24PsF → 24P	
Test Pattern Generator	SMPTE 75%, Colour Bars 75 & 100%, SDI EQ/PLL Pathological, Audio Tone 1kHz @ -20dBfs	
USB Interface	Firmware Update Interface ONLY	
Video Input	S2H: 3G/HD/SD-SDI x 1	H2S: HDMI x 1
Video Out	S2H: 3G/HD/SD-SDI x 1 and HDMI x 1	H2S: 3G/HD/SD-SDI x 2
Audio (In/Out)	Embedded Audio 2ch, 16, 20 or 24-bit	
Timecode	SDI: Sony, Canon, Panasonic, Arri, RED HDMI: Sony, Canon Timecode, Canon Start/Stop	
Supported Formats (In/Out)	1080p60, 1080p59.94, 1080p50, 1080i60, 1080i59.94, 1080i50, 1080p30, 1080p29.97, 1080p25, 1080p24, 1080p23.98, 1080psf30, 1080psf29.97, 1080psf25, 1080psf24, 1080psf23.98, 720p60, 720p59.94, 720p50, 486i59.94, 480i59.94, 576i50	

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