

PRODUCT DATA SHEET

OMCC

4K-Multi-Format Cross Converter

- *Prepared by : A. Y. Go*
- *Reviewed by : J. M. Park*
- *Approved by : C. J. Kim*



Revision History

Version Number	Revision Date	Page	Description of Changes
0.1	Sep. 30. 2021	ALL	Initial Version
0.2	Nov. 26. 2021	ALL	Updated the module weight, supply current and input video rate
0.30	Feb. 10. 2022	ALL	Applied the changes in the v030.
0.31	Feb. 14. 2022	ALL	Changed the chapter 5.1 Design Drawing.
0.32	July. 14. 2022	ALL	Added the note (2) and modify the chapter 2 contents.
0.33	July. 29. 2022	ALL	Modified the chapter 2 contents and power consumption.
0.34	Aug. 01 2022	ALL	Change the document form.
0.50	Dec. 02. 2022	ALL	Added the cable distance limitations and block diagram to chapter 2. Update the supply current and power dissipation. Update the operating temperature and humidity. Change the chapter 5.1 Design Drawing.
0.51	Mar. 27. 2023	ALL	Fixed typo and update the connectivity image of chapter2.
0.60	June. 02. 2023	ALL	Modified the chapter 2 and 5 contents.

PROPRIETARY NOTE

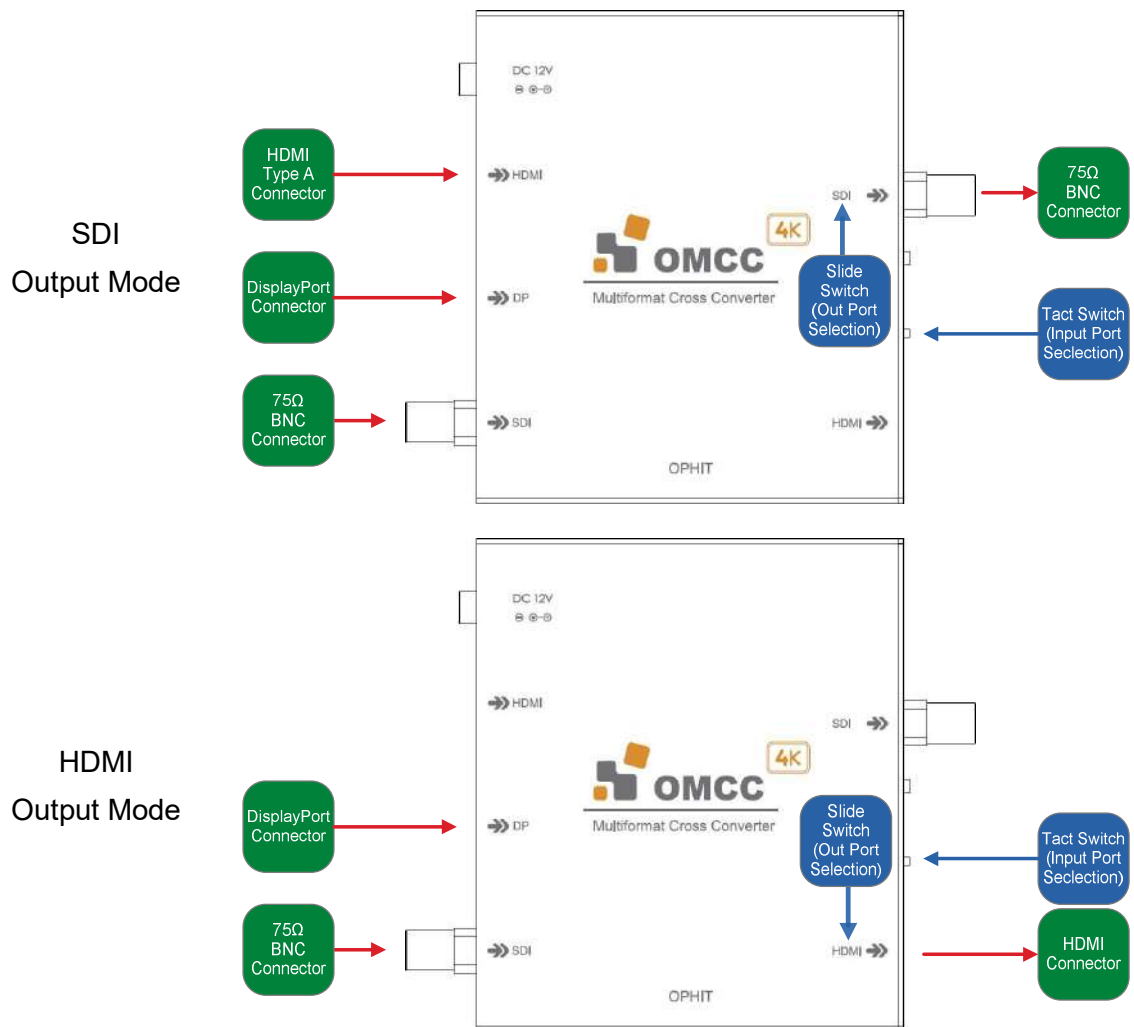
***THIS DOCUMENT CONTAINS INFORMATION CONFIDENTIAL AND PROPIETARY TO OPHIT CO.,LTD AND SHALL NOT BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS OR DISCLOSED TO OTHERS OR USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS OBTAINED WITHOUT THE EXPRESSED AND WRITTEN CONSENT OF OPHIT INCOPORATION**

TABLE OF CONTENTS

1. General Description	04
2. General Specification	05
3. Absolute Maximum Ratings	07
4. Electrical Specification	07
5. Mechanical Specification	08
5.1 Design drawing	

1. General Description

- Convert HDMI or DisplayPort to SDI format in 12G, 6G, 3G and HD with SDI bypass function.
- DisplayPort and SDI input can also be converted to HDMI.⁽¹⁾
- Supports SDI Input / Output only Level A.
- Select the input video format using the tact switch.⁽²⁾
- Select the output video format using the slide switch.
- Status LED for lock indicator.
- Supports firmware update via USB port.



(1) Before v030, only supported converting SDI to HDMI.

Note: Does not support input video scaling. Please contact us if this function is needed.

(2) When selecting the input video format, the tact switch should be pressed at least 0.1sec.

2. General Specification

Parameter		
Input Signal / Connector		1 x HDMI via Type-A Female Connector
		1 x DisplayPort via 20P Female Connector
		1 x SDI via BNC Female Connector
Output Signal / Connector		1 x SDI via BNC Female Connector
		1 x HDMI via Type-A Female Connector
USB Connector		1 x mini USB-B Female Connector
Input Data Rate	HDMI	Up to 18Gbps (HDMI 2.0)
	DisplayPort	Up to 21.6Gbps (DisplayPort1.2)
	12G-SDI	Up to 11.88 Gbps (ST-2082-1)
Output Data Rates	12G-SDI	Up to 11.88 Gbps (ST-2082-1)
	HDMI	Up to 18Gbps (HDMI 2.0)
Video Resolution		Up to 4K@60Hz
Module Dimension		103 x 119 x 25.8 mm (W x D x H)
Module Weight		480g
Enclosure Color		White
Power		1 x External Power Supply DC +12V

- **Max video resolution and color depth:**

- HDMI:
 - 4K@60Hz, RGB/YCbCr444, 8-bit
 - 4K@60Hz, YCbCr422, 12-bit
 - 4K@60Hz, YCbCr420, 12-bit
- DisplayPort:
 - 4K@60Hz, RGB/YCbCr444, 8-bit
 - 4K@60Hz, YCbCr422, 12-bit

- **Supporting HDMI and DisplayPort Input Resolutions:**

720p25, 720p30/29.97, 720p50, 720p60/59.94
 1080i50, 1080i60/59.94,
 1080p24/23.98, 1080p25, 1080p30/29.97, 1080p50, 1080p60/59.94,
 2160p24/23.976, 2160p25, 2160p30/29.97, 2160p48/47.98, 2160p50, 2160p60/59.94

- **Supporting 12G-SDI output:**

Automatically detects input video rate and matches to SDI format video rate with YCbCr 4:2:2-10bit Level-A.

If the video format is YCbCr420, it is output without conversion.

720p25, 720p30/29.97, 720p50, 720p60/59.94,

1080i50, 1080i60/59.94,

1080p24/23.98, 1080p25, 1080p30/29.97, 1080p50, 1080p60/59.94,

2160p24/23.98, 2160p25, 2160p30/29.97, 2160p48/47.96, 2160p50, 2160p60/59.94

- **Cable Distance Limitations**

Here below is an overview table of what we as OPHIT recommend to use:

Cable Type	3G-SDI	12G-SDI
Belden, 1694A	100M	NA
Canare, L-5.5CUHD	NA	70M

3. Absolute Maximum Ratings

Parameter	Rating
Operating Temperature	0°C ~ +40°C Non-Condensing
Relative Humidity	10 ~ 80 % Non-Condensing
Power Supply	DC +12 V

NOTICE

Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operations section for extended periods of time may affect reliability.

4. Electrical Specification

Parameter	Symbol	Min	Typ	Max	Units	Condition
P O W E R	Supply Voltage(DC)	Vcc		+12		V +/- 5%
	Supply Current	Icc	0.308	0.386	0.492	A Working 4K60 (DP to SDI Mode)
	Power Dissipation	Po	3.696	4.632	5.904	W

5. Mechanical Specification

5.1 Design Drawing

[DC Power Connector: DC-025A, 2.1pi Locking Plug Type]

