

PRODUCT DATA SHEET

DP-100

DisplayPort Extension System



Revision History

Version Number	Revision Date	Page	Description of Changes
0.1	Feb.11.2016	ALL	Initial Version
0.2	Mar.16.2016	6	Electrical Specification modified
1.0	Jul.25.2016	ALL	Initial Version(Production Version)
1.1	Sep.09.2016	4	General Description modified
1.2	Oct.29.2019	ALL	Renewal Specification

PROPRIETARY NOTE

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1. General Description

DP-100, The device complies with the VESA DisplayPort Standard Version 1.2, and supports a four lane Man Link interface signaling up to HBR2 rates at 5.4Gbps per lane.

- Supports DP v1.1a and DP v1.2 Signaling Including HBR2 Data Rates to 5.4Gbps
- DisplayPort Connector Input/Outputs : 20-pin female.
- Supports resolutions of up to 3840x2160@60Hz.
- DPCD signal compliant
- external power supply need for proper operation
- Dual mode is not support.
- Quick and easy to use.

2. General Specification

Parameter	Symbol
Input and Output Signal	DisplayPort Signal
DisplayPort Version	1.2a
Video Bandwidth	4 lanes, 21.6 Gbps(HBR2)
Module Size	53 x 16 x 52.4 mm (W×D×H)
Using electrical connector	20 pin DisplayPort(female)
Weight	80 g (0.17 lb)

3. Absolute Maximum Ratings

Parameter	Rating
Storage temperature	-20°C ~ +70°C Non-Condensing
Operating temperature	0°C ~ +50°C Non-Condensing
Transportation temperature	-20°C ~ +70°C Non-Condensing
Power Supply	-0.3 ~ 5.5 V
Relative Humidity	10 ~ 80 %
Lead solder temperature	260°C, 10 seconds

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

4.1 Electrical Specification

Parameter		Symbol	Min	Typ	Max	Units	Condition
P O W E R	Supply Voltage(DC)	V _{cc}	+4.5	+5.0	+5.5	V	
	Supply Current	I _{cc}	0.35	0.38	0.41	A	DPM2(Out)
	Power Dissipation	P _o	1.57	1.9	2.25	W	4K 60Hz(MST) Length : 40M
M A I N L I N K	Peak-to-peak input differential voltage; RBR, HBR, HBR2	V _{ID}	0.30		1.40	V _{pp}	
	Data rate	d R			5.4	Gbps	
	AC coupling capacitance (each input and each output line)	C _{AC}	75		200	nF	
	Differential output termination resistance	R _{tdiff}	80	100	120	Ω	
	Output termination voltage (AC coupled)	V _{Oterm}	0		2	V	
A U X C H A N N E L	Differential input voltage amplitude (DP mode only)	V _{ID}	300		1400	mV _{pp}	
	Data rate (before Manchester encoding)	d _{R(AUX)}	0.8	1	1.2	Mbps	
	Data rate Fast AUX (300ppm frequency tolerance)	d _{R(FAUX)}		720		Mbps	
H P D	Hot Plug Detect High level	V _{OH}	2.7		3.6	V	
	Hot Plug Detect Low level	V _{OL}	0		0.1	V	
	HPD logic shut off time	t _{T(HPD)}			400	ms	

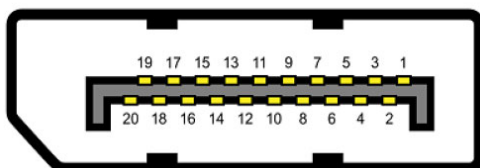
4.2 Connector Pin Assignment

Receiver (IN, Female)

Pin	Signal Assignment	Pin	Signal Assignment
1	Main Link Lane 0 (Positive)	11	Ground
2	Ground	12	Main Link Lane 3 (Negative)
3	Main Link Lane 0 (Negative)	13	Config1 (Ground)
4	Main Link Lane 1 (Positive)	14	Config2 (Ground)
5	Ground	15	AUX Channel (Positive)
6	Main Link Lane 1 (Negative)	16	Ground
7	Main Link Lane 2 (Positive)	17	AUX Channel (Negative)
8	Ground	18	Hot Plug
9	Main Link Lane 2 (Negative)	19	Ground
10	Main Link Lane 3 (Positive)	20	Not used

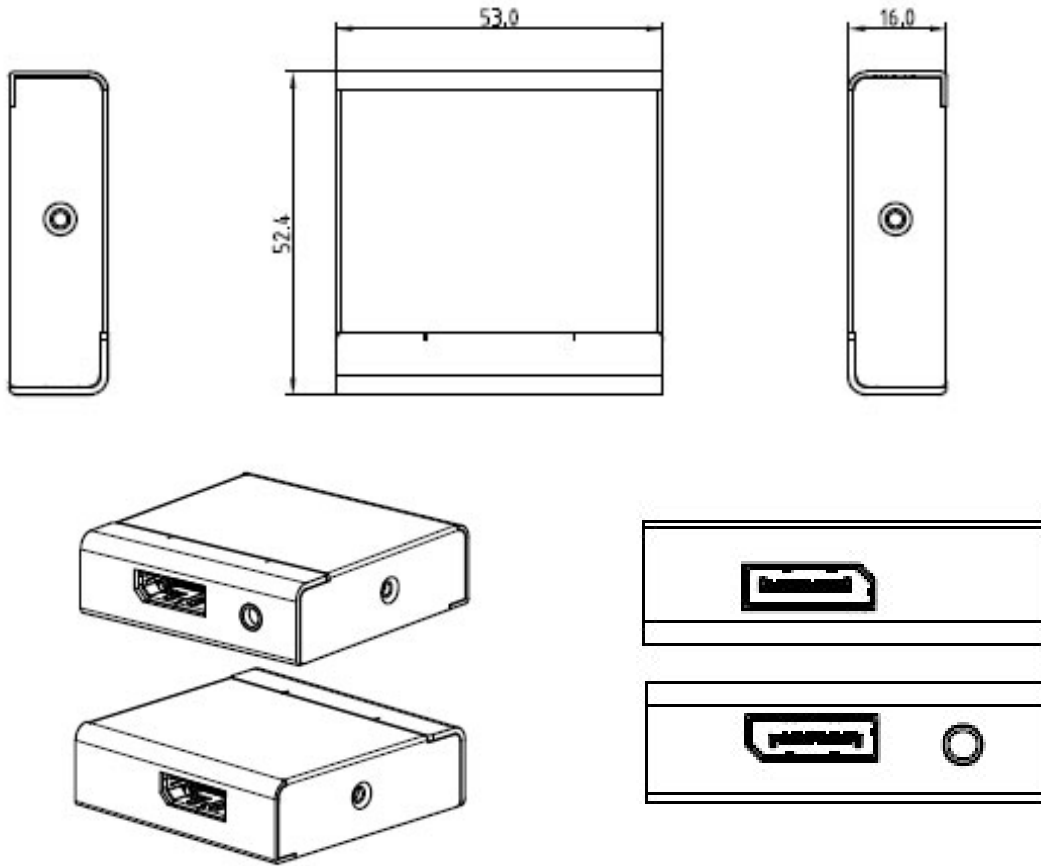
Transmitter (OUT, Female)

Pin	Signal Assignment	Pin	Signal Assignment
1	Main Link Lane 0 (Positive)	11	Ground
2	Ground	12	Main Link Lane 3 (Negative)
3	Main Link Lane 0 (Negative)	13	Config1 (Ground)
4	Main Link Lane 1 (Positive)	14	Config2 (Ground)
5	Ground	15	AUX Channel (Positive)
6	Main Link Lane 1 (Negative)	16	Ground
7	Main Link Lane 2 (Positive)	17	AUX Channel (Negative)
8	Ground	18	Hot Plug
9	Main Link Lane 2 (Negative)	19	Ground
10	Main Link Lane 3 (Positive)	20	DP_PWR (+3.3V input)



5. Mechanical Specification

5.1 Case Dimension



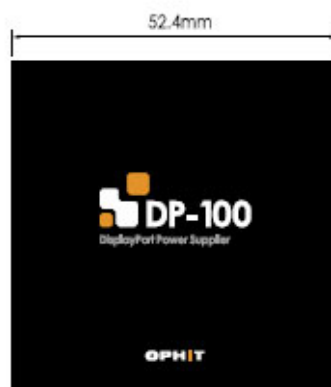
5.2 Design drawing

Assembly

LEFT VIEW



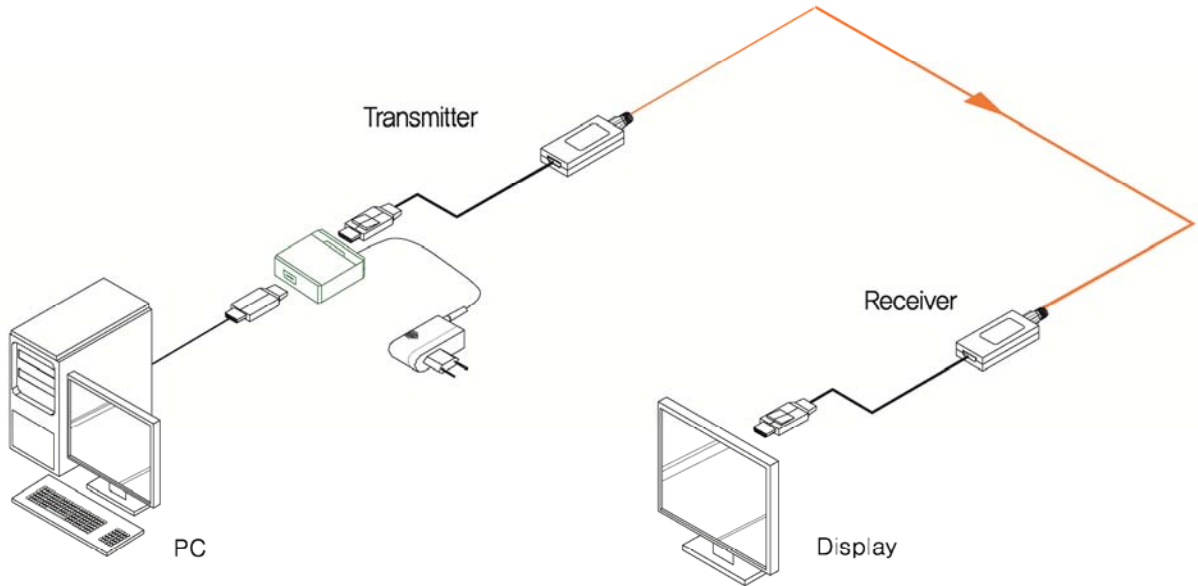
FRONT VIEW



RIGHT VIEW



5.3 Connection



6. Regulatory

7.1 EMC & Safety Agency approval

7.1.1 CE-EMC compliance:

This Product is investigated to EN55022:2010+A1:2011/EN 55024:2010/
EN61000-3-2:2014 and EN61000-3-3:2013

7. Packing Information

Set(Unpacking, DPH Only)	52.4mm*53.0mm*16.0mm	80.0g
Package(1Set, Inner Box Packing)	160.0mm*140.0mm*67.0mm	338.0g
Package(Multi, 32PCS Packing)	595.0mm*305.0mm*345.0mm	10.8Kg

8. RoHS

OPHIT is fully aware of the requirement under the **Restriction of Hazardous Substances in Electrical and Electronic Equipment Directive EU 2015/863(RoHS3)**, which adds four new restricted substances to the previous Directive 2011/65/EU(RoHS2).

Hereby we guarantee that we do not intentionally use the substances described below and based on third party chemical analysis the thresholds of the substances as indicated are not exceeded for our all products.

Substance	CAS #	RoHS Limity by % (PPM)
Lead (PB)	7439-92-1	0.1% (1000 PPM)
Mercury (Hg)	7439-97-6	0.1% (1000 PPM)
Hexavalent Chromium (CrVI)	15840-29-9	0.1% (1000 PPM)
Polybrominated Biphenyls (PBB)	-	0.1% (1000 PPM)
Polybrominated Diphenyl Ethers (PBDE)	-	0.1% (1000 PPM)
Cadmium (Cd)	7440-43-9	0.01% (100 PPM)
Bis(2-Etylhexyl) phthalate(DEHP)	117-81-7	0.1% (1000 PPM)
Benzyl butyl phthalate(BBP)	85-68-7	0.1% (1000 PPM)
Dibutyl Phthalate(DBP)	84-74-2	0.1% (1000 PPM)
Disobutyl Phthalate(DIBP)	84-69-5	0.1% (1000 PPM)

Banned Substances by RoHS Directive 2011/65/EU+2015/863/EU, EN50581:2012

OPHIT will continue to monitor any new amendments/changes to Directive and subsequently review our all products with regards to compliance. OPHIT will also ensure that any new information is communicated to its customers, suppliers and stakeholders as required.

Signature : Jong-Kook, Moon *Jong-kook, Moon*
Title/Issue date : President/July.22.2019

10. REACH

The European REACH Regulation 1907/2006 on Registration, Evaluation, Authorization, and Restriction of Chemicals(REACH), Annex XV II entered into Force in June 2009, and affects all companies producing, Importing, using, or placing Products on the European market. The aim of the REACH regulation is to ensure a high Level of protection of human health and the environment from chemical substances.

OPHIT Co., Ltd substances management system follow and complies with the current revision of the REACH Regulation on the substances as identified by ECHA(European Chemical Agency).

OPHIT Co., Ltd products are considered articles as defined in REACH Article 3(3). These products/articles under normal and reasonable conditions of use do not have intended release of substances. Therefore the requirement in REACH Article 7(1)(b) for registration of substances contained in these products/articles does not apply.

OPHIT Co., Ltd products/articles, do not contain **Substances of very High Concern** or if there **SVHC** in the product/article, the content is less than the 0.1%(wt/wt) as defined by REACH Article 57, Annex XIV, Directive 67/548/EEC. Therefore the requirement in REACH Article 7(2) to notify ECHA if a product/article contains more than 0.1% wt/wt of an SVHC and tonnage exceeding 1 tone per importer per year is not applicable.

OPHIT's European operations do not manufacture or import chemicals, therefore OPHIT Co., Ltd has no obligation to register substances.



Jong-Kook, Moon
President

OPHIT Co., Ltd ACCEPTS NO DUTY TO NOTIFY USERS OF THIS OF DECLARATION OF UPDATES OR CHANGES TO THIS DECLARATION.