

TITLE 1600G Active Loopback Module	DOC No. RFD-20260105300-001	
	REVISION : 01	AUTHORIZED BY : Albert Lin
	DATE : 2026.01.05	CLASSIFICATION : CONFIDENTIAL

1. PRODUCT FEATURES

- Hot-pluggable 1600G OSFP Active Loopback
- 3nm CMOS process DSP
- Compliant with OSFP MSA, close top
- VCC voltage ranges from 2.97V to 3.63V
- Operating case temperature 0°C to +85 °C
- Multi-color LED on the front
- The module power distributed to the 5 burners
- Customized CMIS Rev 5.2

2. PRODUCT APPLICATIONS

- Switch aging and testing
- 8x200G, 8x100G ,8x50G active loopback

3. PRODUCT DESCRIPTION

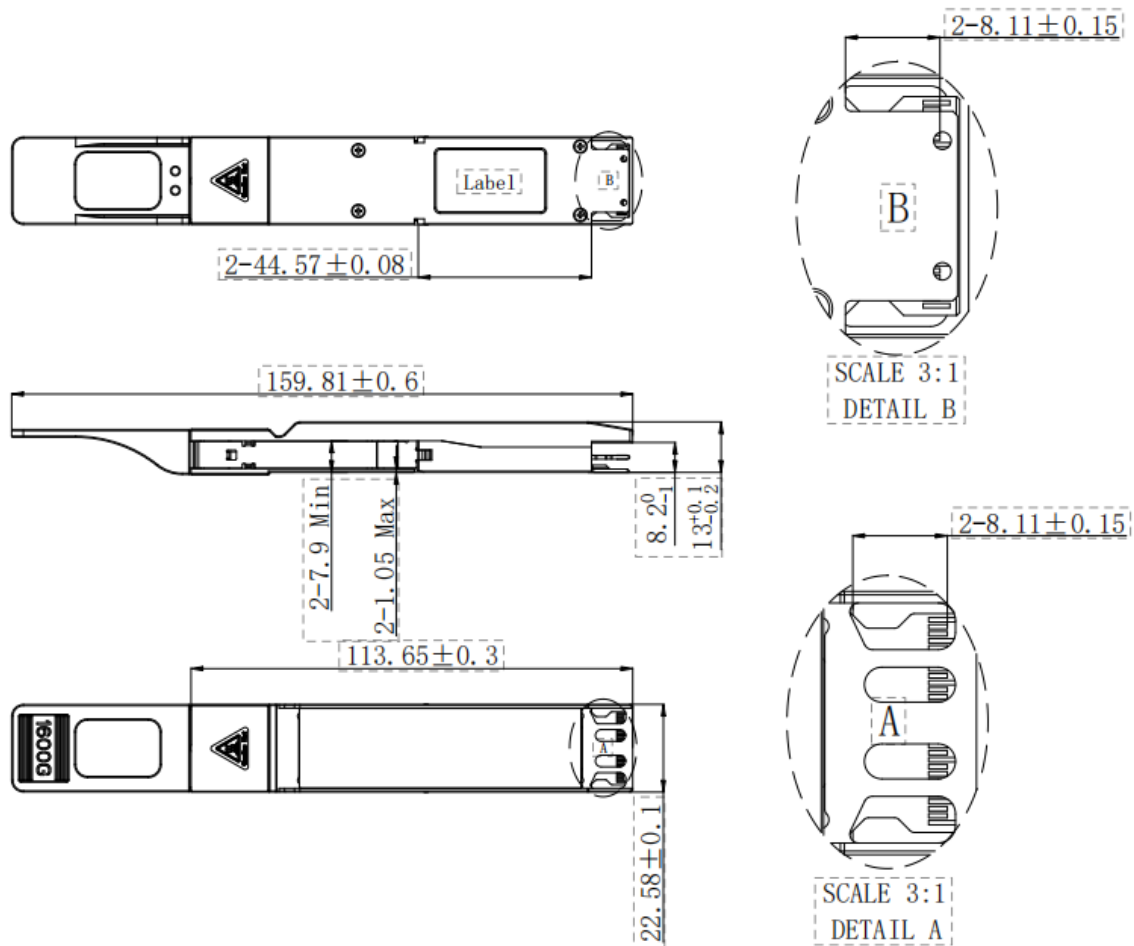
3.1 PRODUCT NAME

1.6T Active Loopback Module

JPC P/N	Bit Rate	Distance	Connector	Tem.	DDMI	Fiber Type
P6930LTKSX00-1	1600G	n/a	n/a	0~85	n/a	n/a

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3.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKING



Unit is millimeter. All dimensions are ± 0.1 mm unless otherwise specified

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4. Absolute Maximum Ratings & Recommended Operating Conditions

Absolute Maximum Ratings						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	V _{cc}	-0.3	-	3.6	V	
Storage Temperature	T _s	0	-	+85	°C	
Operating Humidity	RH	5	-	+85	%	
Control Input Voltage	VI	-0.3	-	VCC+0.3	V	

Recommended Operating Conditions and Power Supply Requirements						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T _C	0	-	85	°C	
Power Supply Voltage	V _{cc}	2.97	3.3	3.63	V	
Power Dissipation	P _{diss}	-	-	50	W	
Supply Current	I _{cc}	1.5	-	16	A	

Digital Diagnostic Specifications						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Temperature monitor absolute error	DMI_Temp	-3	-	3	degC	
Supply voltage monitor absolute error	DMI_VCC	-10%	-	10%	V	

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5. Applications Note:

Top Side (viewed from top)

60	GND	
59	TX1p	
58	TX1n	
57	GND	
56	TX3p	
55	TX3n	
54	GND	
53	TX5p	
52	TX5n	
51	GND	
50	TX7p	
49	TX7n	
48	GND	
47	SDA	
46	VCC	
45	VCC	
44	INT/RSTn	
43	GND	
42	RX8n	
41	RX8p	
40	GND	
39	RX6n	
38	RX6p	
37	GND	
36	RX4n	
35	RX4p	
34	GND	
33	RX2n	
32	RX2p	
31	GND	

----- Module Card Edge -----

Bottom Side (viewed from bottom)

	GND	1
	TX2p	2
	TX2n	3
	GND	4
	TX4p	5
	TX4n	6
	GND	7
	TX6p	8
	TX6n	9
	GND	10
	TX8p	11
	TX8n	12
	GND	13
	SCL	14
	VCC	15
	VCC	16
	LPWn/PRSn	17
	GND	18
	RX7n	19
	RX7p	20
	GND	21
	RX5n	22
	RX5p	23
	GND	24
	RX3n	25
	RX3p	26
	GND	27
	RX1n	28
	RX1p	29
	GND	30

Pin Function Definitions for QSFP28

PIN	Symbol	Name/Description	Note
1	GND	Ground	
2	TX2p	Transmitter Data Non-Inverted	
3	TX2n	Transmitter Data Inverted	
4	GND	Ground	

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5	Tx4p	Transmitter Data Non-Inverted	
6	TX4n	Transmitter Data Inverted	
7	GND	Ground	
8	TX6p	Transmitter Data Non-Inverted	
9	TX6n	Transmitter Data Inverted	
10	GND	Ground	
11	TX8p	Transmitter Data Non-Inverted	
12	TX8n	Transmitter Data Inverted	
13	GND	Ground	
14	SCL	2-wire Serial interface clock	
15	VCC	+3.3V Power	
16	VCC	+3.3V Power	
17	LPWn/PR Sn	Low-Power Mode / Module Present	
18	GND	Ground	
19	RX7n	Receiver Data Inverted	
20	RX7p	Receiver Data Non-Inverted	
21	GND	Ground	
22	RX5n	Receiver Data Inverted	
23	RX5p	Receiver Data Non-Inverted	
24	GND	Ground	
25	RX3n	Receiver Data Inverted	
26	RX3p	Receiver Data Non-Inverted	
27	GND	Ground	
28	RX1n	Receiver Data Inverted	
29	RX1p	Receiver Data Non-Inverted	
30	GND	Ground	

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31	GND	Ground	
32	RX2p	Receiver Data Non-Inverted	
33	RX2n	Receiver Data Inverted	
34	GND	Ground	
35	RX4p	Receiver Data Non-Inverted	
36	RX4n	Receiver Data Inverted	
37	GND	Ground	
38	RX6p	Receiver Data Non-Inverted	
39	RX6n	Receiver Data Inverted	
40	GND	Ground	
41	RX8p	Receiver Data Non-Inverted	
42	RX8n	Receiver Data Inverted	
43	GND	Ground	
44	INT/RSTn	Module Interrupt / Module Reset	
45	VCC	+3.3V Power	
46	VCC	+3.3V Power	
47	SDA	2-wire Serial interface data	
48	GND	Ground	
49	TX7n	Transmitter Data Inverted	
50	TX7p	Transmitter Data Non-Inverted	
51	GND	Ground	
52	TX5n	Transmitter Data Inverted	
53	TX5p	Transmitter Data Non-Inverted	
54	GND	Ground	
55	TX3n	Transmitter Data Inverted	
56	TX3p	Transmitter Data Non-Inverted	

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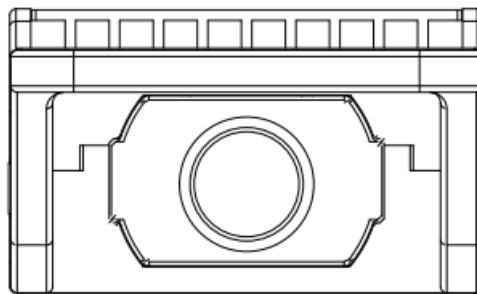
57	GND	Ground	
58	TX1n	Transmitter Data Inverted	
59	TX1p	Transmitter Data Non-Inverted	
60	GND	Ground	

Digital Diagnostic Specifications

Customized CMIS rev 5.2.

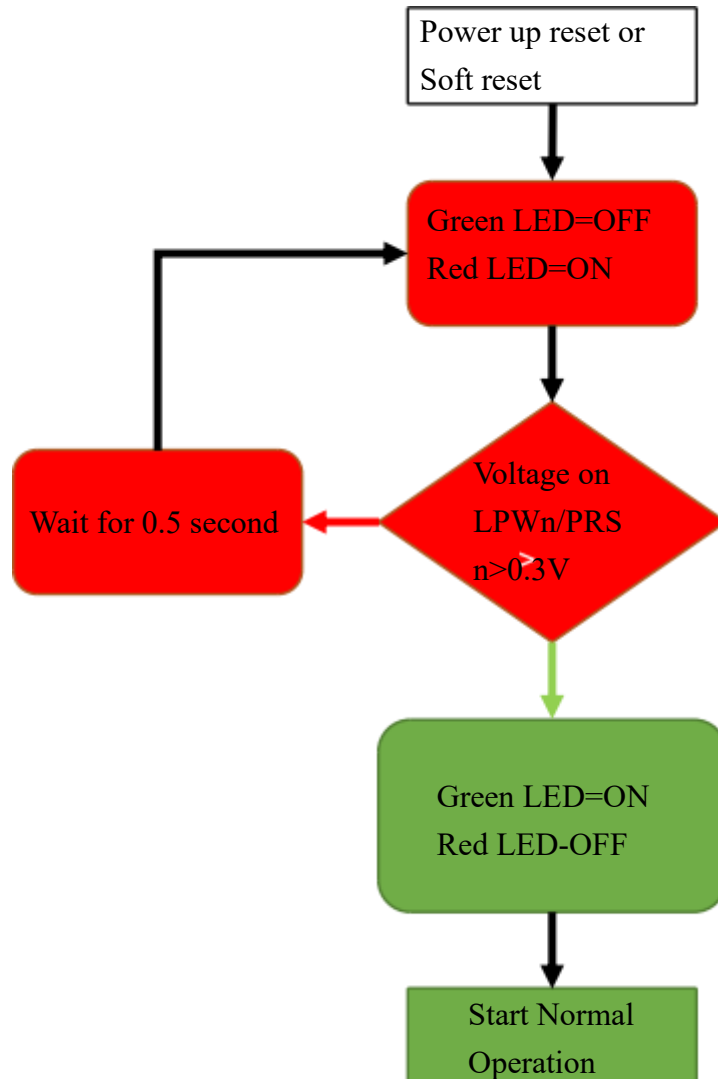
Status LED

A multi-color LED viewed from the front of the module in order to signify high/low power modes, module fully insert, and interrupts:



LED interface arrangement

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Power up reset or Soft reset

- Illuminate RED LED,
- Continuous illuminate Red LED if the voltage on LPWn/PRSn is below 0.3V
- Once the LPWn/PRSn is above 0.3V, illuminate Green LED, and
- Start the Normal operation.

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Normal Operation

- Solid green: low-power mode
- Solid red: high-power mode
- Blinking green: low-power mode with any of the interrupt flag is set
- Blinking red: high-power mode with any of the interrupt flag is set

6. Modification History

Rev.	Comments	Date	Originator	Approval
01	Initial	2026.01.05	Albert Lin	Mike Sun