

100G DP-QPSK COHERENT RECEIVER TEST FIXTURE

TF-100CR

1. OUTLINE

TF-100CR is a test fixture for 100Gb/s coherent DP-QPSK receiver module. It consists of RF contactor, DC-contactor, K connectors and ribbon cable connector. Users can perform RF test easily by only putting the module into the center contacting area. Insertion loss of RF line is less than 1.3 dB(TYP.) and return loss is over 12 dB(TYP.) in the range of DC to 32 GHz that is good enough in RF performance for 28 or 32 Gbaud DQPSK signal test. RF Contactors performance can be canceled to use De-embedding file for Agilent PNA series.

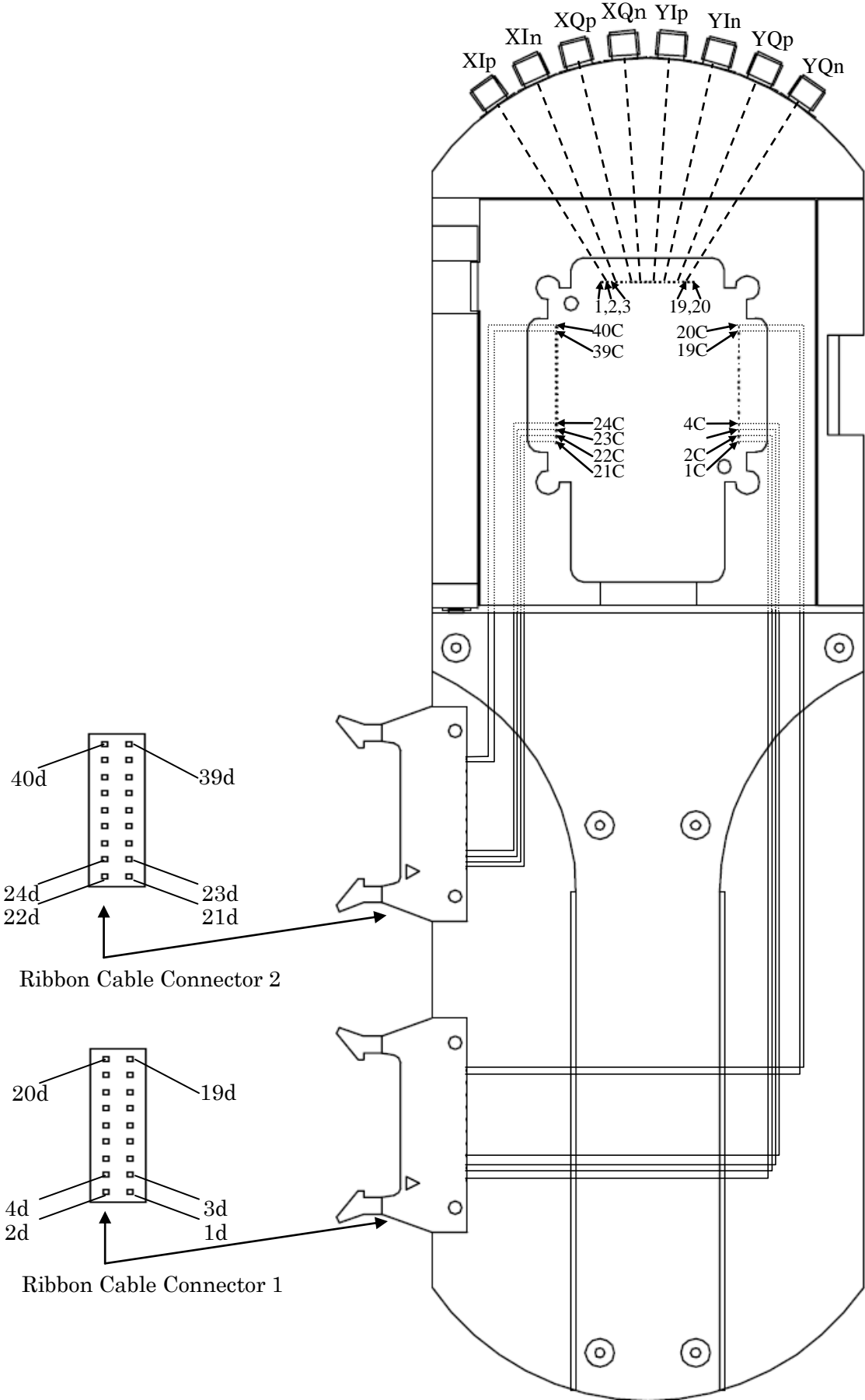
2. FEATURES

- 1) Insertion loss of RF line is 1.3 dB for DC to 32 GHz (typical performance)
- 2) Return loss of RF line is 12 dB for DC to 32 GHz (typical performance)
- 3) De-embedding file is available for Agilent PNA series. (Contactor RF performance can be cancel)
- 4) Easy handling
- 5) Stable contact

3. APPLICATION

Test fixture for 100Gb/s coherent DP-QPSK receiver module (OIF-DPC-RX-01.0)

4 PIN NUMBER DEFINITION



5. TERMINAL DESCRIPTION

Pin No	Pin Name	Function /description	Note
1d, 2d, , , 19d, 20d		DC pins (power supply, signal control, dc ground) of ribbon cable connector 1	HIF3DA-20PA-2.54DS
21d, 22d, , , 39d, 40d		DC pins (power supply, signal control, dc ground) of ribbon cable connector 2	HIF3DA-20PA-2.54DS
1c, 2c, , , 39c, 40c		DC contactor (power supply, signal control, DC ground)	
1,3,5,6,8,10,11,13,15, 16,18, 20	GND	RF ground	
2		RF contactor connected to XIp connector internally	
4		RF contactor connected to XIn connector internally	
7		RF contactor connected to XQp connector internally	
9		RF contactor connected to XQn connector internally	
12		RF contactor connected to YIp connector internally	
14		RF contactor connected to YIn connector internally	
17		RF contactor connected to YQp connector internally	
19		RF contactor connected to YQn connector internally	
	XIp	XI channel signal output (positive.)	K (female)
	XIn	XI channel signal output (negative)	K (female)
	XQp	XQ channel signal output (positive)	K (female)
	XQn	XQ channel signal output (negative)	K (female)
	YIp	YI channel signal output (positive.)	K (female)
	YIn	YI channel signal output (negative)	K (female)
	YQp	YQ channel signal output (positive)	K (female)
	YQn	YQ channel signal output (negative) ,	K (female)

6. ABSOLUTE MAXIMUM RATINGS

(This value is a critical point that may damage the unit. At this point, performance is not guaranteed.)

Related terminal	Parameter	Symbol	Unit	Minimum	Maximum
	Storage temperature	Tst	Degree C	0	85
	Operating temperature (ambient)	Topamb	Degree C	0	85
	Current of DC contactor		A		0.5
	Applied voltage of DC contactor		V		8

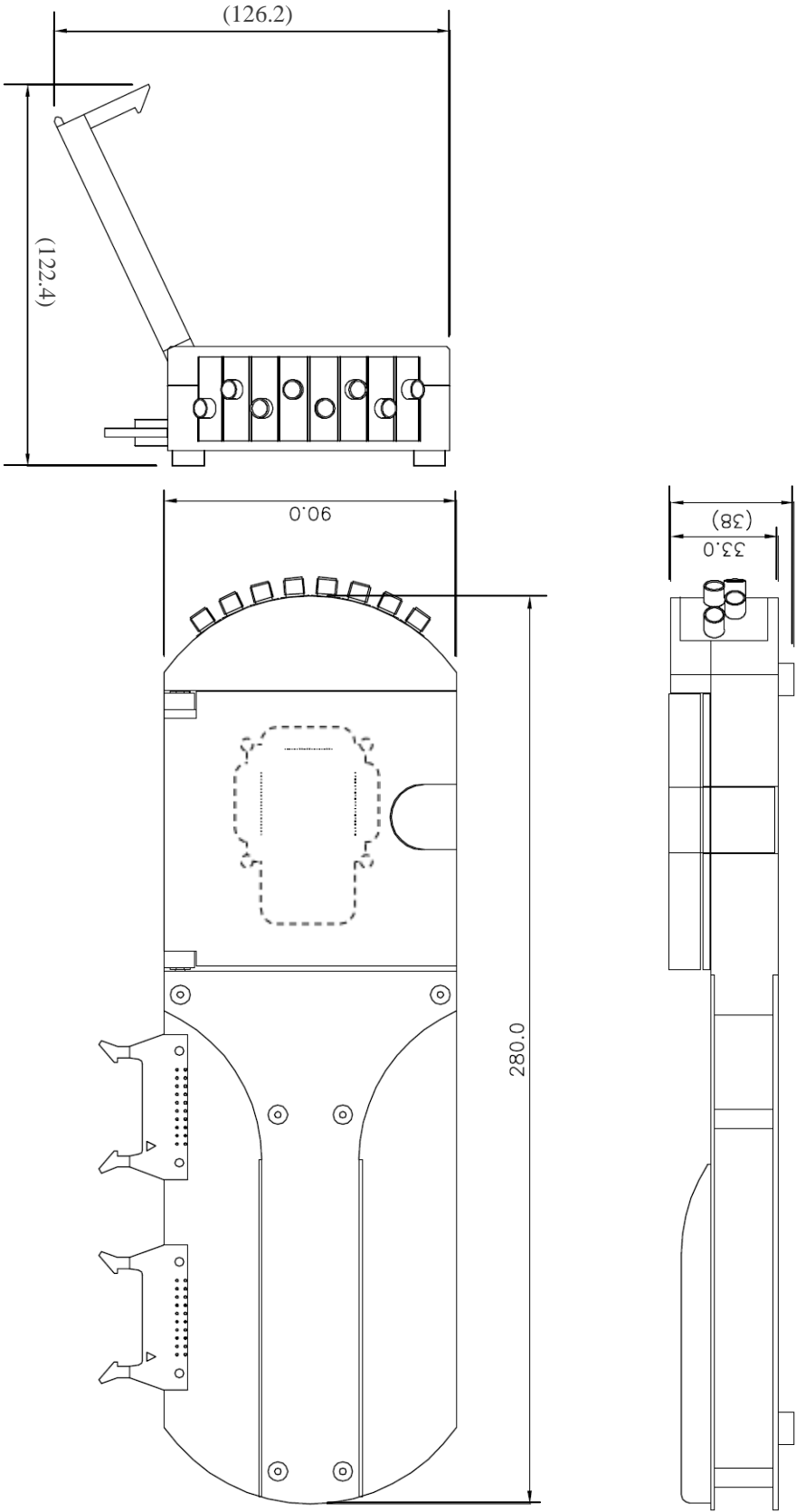
7. RECOMMENDED OPERATION CONDITION

Related terminal	Parameter	Symbol	Unit	Specification		
				Minimum	Typical	Maximum
	Operating temperature (ambient)	Topc	°C	0		40

8. CHARACTERISTICS

Related terminal	Parameter	Symbol	Unit	Specification		
				Min	Typ	Max
XIp, XIn	Operating bit rate		Gb/s	32		
XQp, XQn, YIp, YIn YQp, YQn,	S parameter at 10 MHz to 32 GHz (RF output port --- port 1, RF contact probe pin--- Port 2)	Maximum S11 (LogMag) Minimum S21	RL IL	dB dB		-12 -1.3
	Skew between positive and negative	SPN	ps			1
	Channel skew	CS	ps			5
1,2, , , , 23, 24	Diameter of RF contactor tips		um	90	100	110
	Maximum RF power RF contactor		dBm		10	
	Material of RF contactor			BeCu		
1c, 2c, , , , , 39c, 40c	Diameter of DC contactor tips		um	90	100	110
	Contact resistance of DC contactor tips	Rc	Ohm		0.2	0.5
	Material of RF contactor			BeCu		
All DC and RF contactors	Maximum contacting count (Endurance)				>100k	

9. MECHANICAL DIMENSIONS



Unit: mm

Tolerance: ±0.5

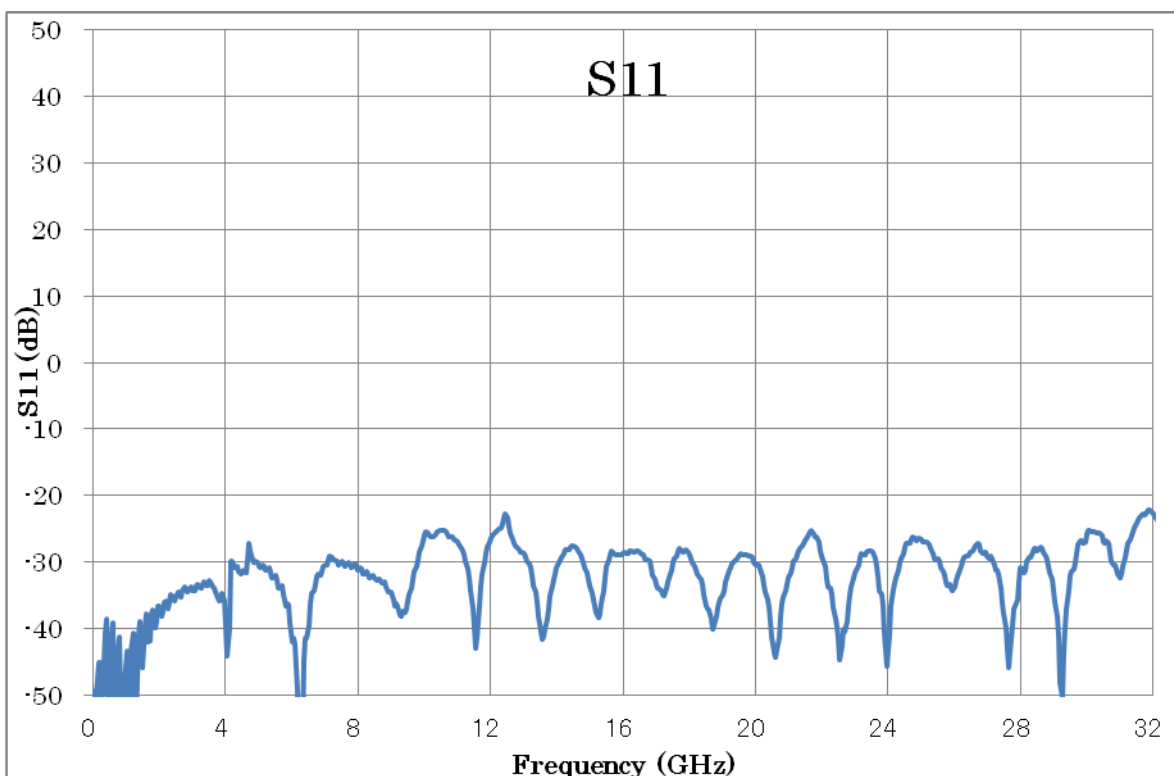
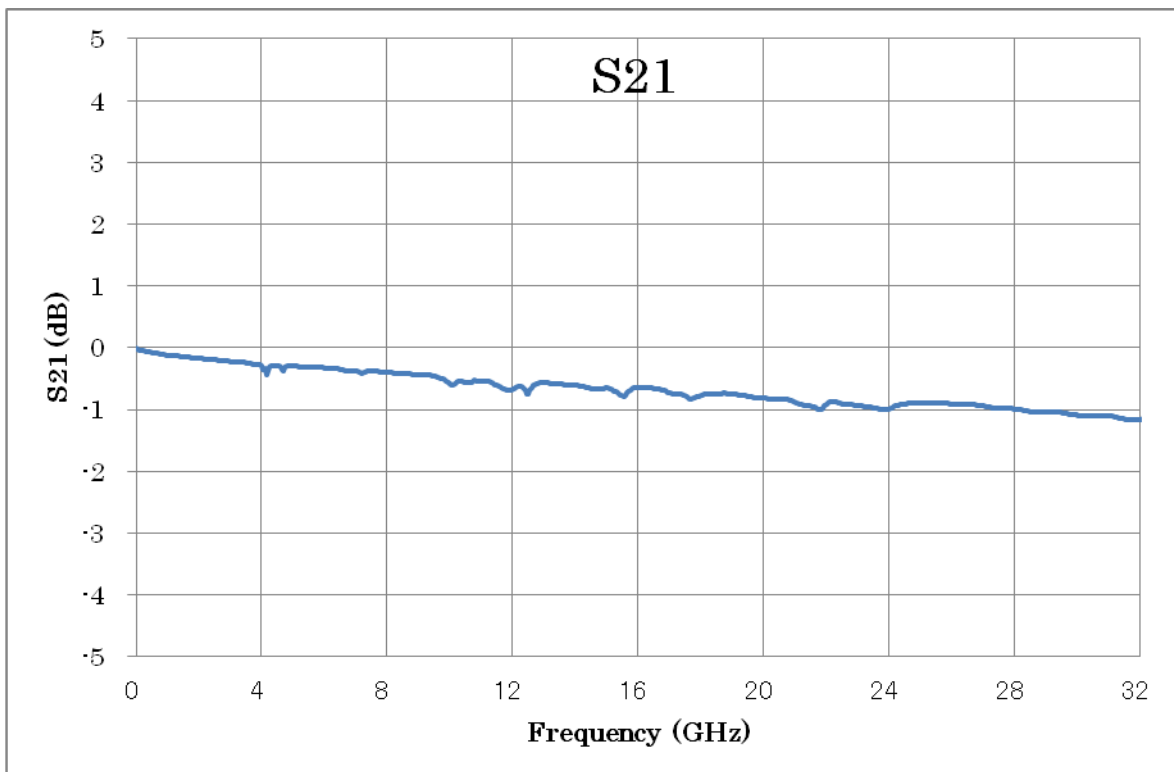
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10. TYPICAL CHARACTERISTICS

(GSG-1mm Pitch)

RF Connector: Port 1

Contactors: Port 2



11. IMPLEMENTATION EXAMPLE
(100 Gb/s DP-QPSK Receiver Test Set-up)

