

**Product Name:** ZX210mD-x Display Port, DP 1.4 HBR3 , CTS 1.2b Test Fixture TPA-P TDR mini plug

**Product Description:**

Display Port , DP, 1.4 HBR3 electrical compliance Test Fixture - Test Access Point Plug ( TPA-P TDR ) supporting mini DP plug connector for applications requiring electrical compliance test and measurements for signal jitter, eye diagram and full **DP 1.4 cts 1.2b** electrical compliance test covering 1.62GHz, 2.7GHz, 5.4GHz and 8.1GHz signal bandwidth. ZX210mD-x DP Test Fixture supports full High Bit Rate, HBR (2.7GHz) , HBR2 (5.4GHz), HBR3 ( 8.1GHz) as well as the Reduced Bit Rate/Low Bit Rate (1.62GHz ) signal bandwidth. ZX210mD-x is designed meeting DP Test Fixture , CTS, version 1.2b requirements, measuring -4.5dB insertion loss at 8.1GHz.

- ZX210mD-x supports Display Port's mini plug connector, mating with receptacle.
- Onboard connector, J1, accessing +3.3V, HOTPLUG, CFG1, CFG2, and GND signal
- The DP Test Fixture is shipped with cable assembly, accessing the J1 signals at pin headers.
- Multi-Layer PCB design, with improved signal integrity and crosstalk
- Insertion Loss -4.5dB @ 8.1GHz
- Includes 8" (20cm) long semi-flexible cable assemblies with SMA Plug or Jack connectors.
- Test Fixture supports electrical compliance for:
  - HBR : High Bit Rate ( 2.7Gbps / lane )
  - HBR2 : High Bit Rate 2 ( 5.4Gbps / lane )
  - HBR3 : High Bit Rate 3 ( 8.1Gbps / lane )
- Test Fixture supports full DP 1.4 standard operating bandwidth of 32.4GHz with 8.1GHz per lane

**S-Parameter, Insertion loss:  
See Page 2**

ZX210mD-x includes 8" (20cm) long semi-flexible cable assemblies with SMA Plug or Jack connectors interfacing directly to scope probe or other cable assemblies. Cable replacement or longer 16" ( 40cm ) cable assemblies can be purchased, see **"Package Includes"**.

The ZX210x DP Test Fixture is characterized using the supplied 8" (20cm) long cable assemblies along with an additional 8" long extension long cable assemblies to scope probes. Tektronix DPO71604C scope using P7313SMA differential probes. Keysight DSA164A Infiniium scope using N2800A probes + differential probe leads N54444A.

**Application:** Full Display Port, DP, 1.4 HBR3 CTS 1.2b electrical compliance test, Clock Jitter, eye diagram, single ended & differential ended signaling electrical measurement.

**Supported resolutions:** HBR3, 8K UHD TV ( 7680x4320 ) @ 60 Hz 4:2:0 subsampling.

**Mates with :** Display Port, DP, Standard socket ( receptacle ) connector.  
SMA connectors mates with standard SMA cable assembly , please see ordering information  
Wire assembly has 0.025" (0.63mm) SQ pin socket at one end interfacing with ZX202HD or standard post header length 0.23" ( 5.83mm )

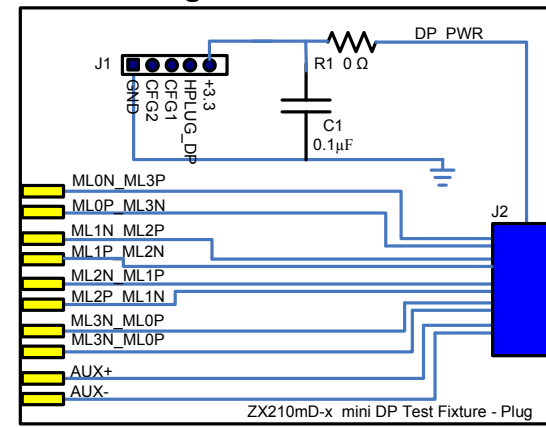
**Test procedure:** [ZXAN-DP-1.4-Test-Procedure](#) application note provides Display Port, DP, test procedure.

**Package includes:**

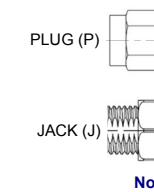
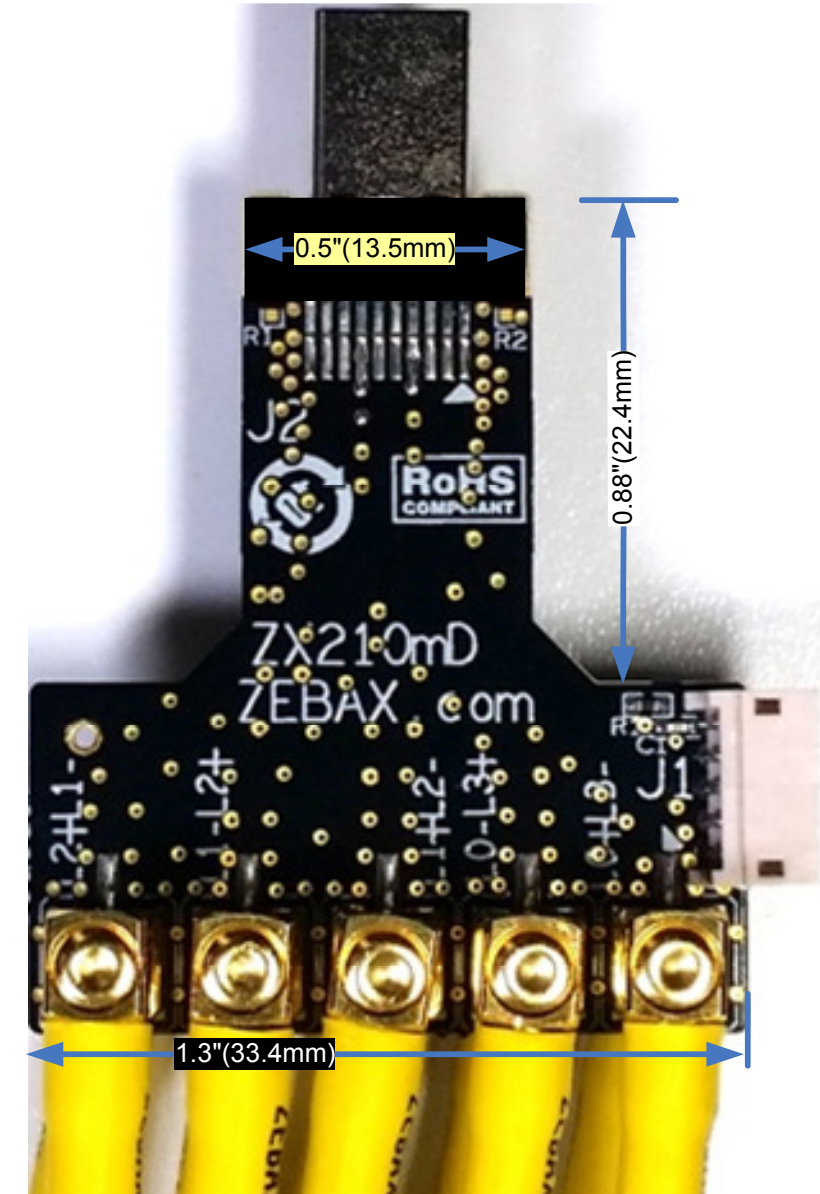
Item	Part number	Quantity	Description
1	ZX210mD-x	1	Display Port, DP , HBR3 Test Fixture TPA-P mini plug
2	ZX00010308R-DP	1	Complete set of DP 8" (20cm) long coax cable assemblies, SMA Jack
	or ZX00020308R-DP	1	SMA Plug – Please see ordering information.
3	ZXJS1173-05	0	Wire assembly – DP to ZX202DP interface cable assembly
4	ZXJS1173-DP	1	Wire assembly for DP interface cable assembly, Note 1
5	ZX200L508-HD	0	USB based Termination board
6	ZX00WT9NM	0	SMA Wrench Torque 5/16" (8mm) 9 NM ( 8lb-in )

**Notes:** 1- Supplied extension wire assembly enabling to interface with 3<sup>rd</sup> party modules.

**Circuit Diagram**



Note: MLxP\_MLyN = MLxP when DownStream



**Ordering INFO:**  
Part Number  
ZX210mD-x options  
J : SMA Jack ( Standard )  
P : SMA Plug connector

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SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT	ASSEMBLY DRAWING ITEM: ZX210mD-x
DESCRIPTION: Display Port DP 1.4 HBR3 1.2b CTS Test Fixture TPA-P TDR mini plug	
CHECKED: M. MARINA	DRAWN: SLAVIK
	REVISION: 1.0 SHEET: 1 OF 2

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**Product Name:** ZX210mD-x Display Port, DP 1.4 HBR3 , CTS 1.2b Test Fixture TPA-P TDR mini plug Cont's

**Test Record:** Test record for the ZX210D-J TPA-P TDR Display Port Test Fixture

[ZXTR-ZX210mD-J](#)

**Insertion loss:** Very low insertion loss typical -5.4dB at 8.1GHz

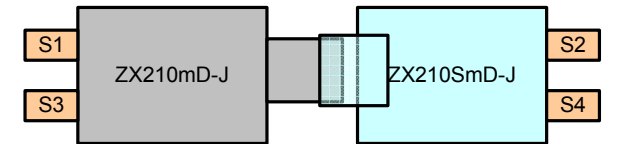
**Insertion loss table**

Signal Pairs	Mated Insertion Loss , IL , for Display Port test Fixture pairs								
	1.0GHz	1.485GHz	2.0GHz	2.97GHz	3.0GHz	3.33GHz	5.97GHz	6.0GHz	8.0GHz
LxN-LxP	-2.00	-3.00	-2.70	-2.80	-2.90	-3.69	-7.90	-9.20	-10.90
AUXN-AUXP									

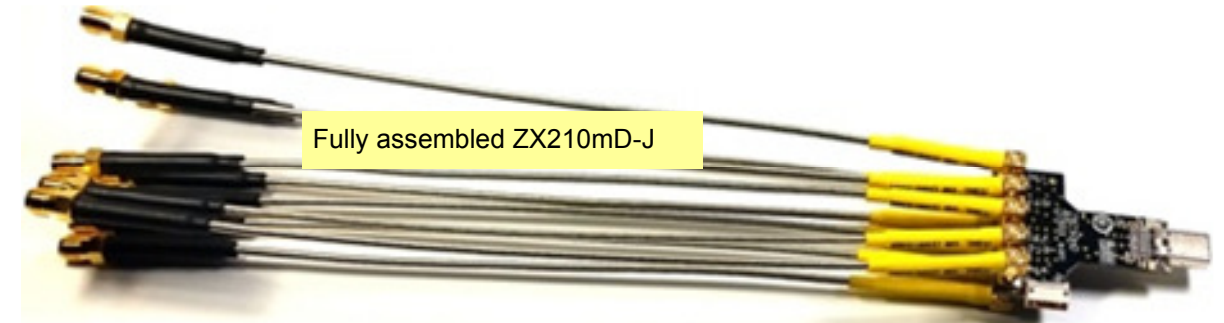
All values are dB  
 The listed values are for fixture pair configuration, S12 s-paramets  
 LxN : L0N, L1N, L2N, L3N  
 LxP : L0P, L1P, L2P, L3P  
 AUXN-AUXP: AUXP, AUXN

**S-Parameter files:** The S-Parameter was obtained using mated ZX210mD-J and ZX210SmD-J Display Port Test Fixture as shown above.  
 Please download the S-Parameter files, .s2p files for all the 10 high speed signals :

[ZX210mD-ZX210SmD-s-parameter](#)



**Test network :** ZX210mD ( Plug ) & ZX210SmD ( Receptacle )  
 via the supplied SMA cable assembly  
 S12 : ML0+- / ML1+- / ML2+- / and ML3+-



Display Port Connector type (Plug)				Display Port Connector type( mini Plug - mDP)					
Pin	Labeled Coax	Connector		Connector Standard (Plug)	Pin	Labeled Coax	Connector		Connector type (mini Plug - mDP)
		Top	Bottom				Top	Bottom	
1	T3_N / R0_P	1		ML3N_ML0P	1		1		GND
2			2	GND	2	J1.2 HPD	2		HPD
3	T3_P / R0_N	3		ML3P_ML0N	3	T0_P / R3_N	3		ML0P_ML3N
4	T2_N / R1_P		4	ML2N_ML1P	4	J1.3 CFG1		4	CONFIG1
5		5		GND	5	T0_N / R3_P	5		ML0N_ML3P
6	T2_P / R1_N		6	ML2P_ML1N	6	J1.4 CFG2		6	CONFIG2
7	T1_N / R2_P	7		ML1N_ML2P	7		7		GND
8			8	GND	8		8		GND
9	T1_P / R2_N	9		ML1P_ML2N	9	T1_P / R2_N	9		ML1P_ML2N
10	T0_N / R3_P		10	ML0N_ML3P	10	T3_P / R0_N	10		ML3P_ML0N
11		11		GND	11	T1_N / R2_P	11		ML1N_ML2P
12	T0_P / R3_N		12	ML0P_ML3N	12	T3_N / R0_P	12		ML3N_ML0P
13	J1.3 CFG1	13		CONFIG1	13		13		GND
14	J1.4 CFG2		14	CONFIG2	14		14		GND
15	AUX+	15		AUX+	15	T2_P / T1_N	15		ML2P_ML1N
16			16	GND	16	AUX+	16		AUX+
17	AUX-	17		AUX-	17	T2_N / T1_P	17		ML2-_ML1+
18	J1.2 HPD		18	HPD	18	AUX-	18		AUX-
19		19		GND	19		19		GND
20	J1.1 VS		20	DP_PWR (3.3V)	20	J1.1 VS	20		DP_PWR

J1	
Pin	Function
1	DP_PWR (3.3V)
2	HPD
3	CFG1
4	CFG2
5	GND



Complete set of DP 8" (20cm) long coax cable assemblies, SMA type Jack – Part Number [ZX00010308-DP](#)

**SMA Cable Assembly** is semi-flexible coax cable with Max. bends of 35mm. Please do not over exert beyond the cable's tolerance.

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