

Product Name: ZX210SmDP Display Port, DP 1.4 HBR3 , CTS 1.2b breakout adapter – test module TPA-P TDR mini receptacle

Product Description:

Display Port , DP, 1.4 HBR3 breakout adapter – test module - Test Access Point Receptacle (TPA-R TDR) supporting mini DP receptacle connector for applications requiring electrical breakout adapter for measurements & signal analysis for signal jitter, eye diagram and tests, covering 1.62GHz, 2.7GHz, 5.4GHz and 8.1GHz signal bandwidth. ZX210mDP mini DP breakout adapter – test module, 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.

- ZX210SmDP supports mini Display Port's receptacle connector, mating with mini plug connector.
- Multi-Layer PCB design, with improved signal integrity and crosstalk
- Insertion loss: 6GHz : $\leq -3\text{dB}$ 8GHz : $\leq -4.5\text{dB}$
- Designed for 16GHz bandwidth.
- Includes 20 pc of 5" (13cm) long semi-flexible cable assemblies with SMA Jack connectors.
- Access to All 20 HDMI signals.
- Access to internal GND planes as well as TOP/Bottom GND fills via GND Test Points
- Display port breakout adapter – test module , supports electrical test measurement & analysis for:
 - HBR : High Bit Rate (2.7Gbps / lane)
 - HBR2 : High Bit Rate 2 (5.4Gbps / lane)
 - HBR3 : High Bit Rate 3 (8.1Gbps / lane)
- For proper signal measurements, please connect GND test point to system GND. The GND test points are connected to internal GND planes as well as TOP/Bottom GND fills.
- The DP connector's case may be connected to the module's GND planes by installing 0 Ω in R1, R2 locations. As default the connector's case is not connected to the module's GND planes.

ZX210SmDP-J includes 5" (13cm) long semi-flexible cable assemblies with SMA Plug or Jack connectors interfacing directly to scope probe or other cable assemblies.

The ZX210SmDP-J DP breakout adapter is characterized using the supplied cable assemblies to test equipment. Tektronix DPO71604C scope using P7313SMA differential probes. Keysight DSA164A Infiniium scope using N2800A probes + differential probe leads N54444A.

Application: mini Display Port, DP, 1.4 HBR3 electrical test, Clock Jitter, eye diagram, single ended & differential ended signaling electrical measurement & analysis.

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

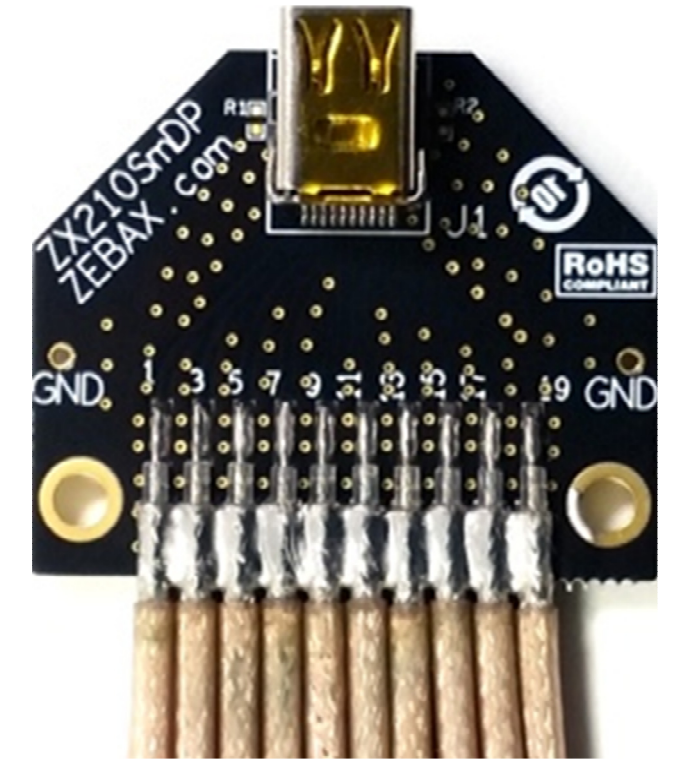
Mates with : mini Display Port, DP, mini plug connector.
SMA connectors mates with standard SMA cable assembly , please see ordering information

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

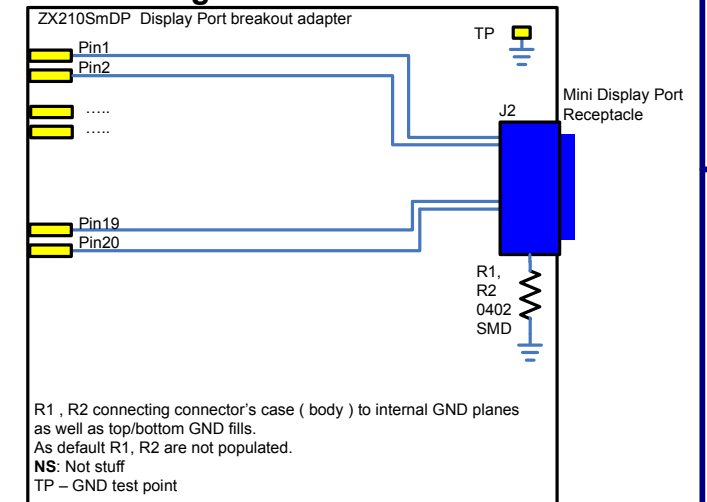
Package includes:

Item	Part number	Quantity	Description
1	ZX210SmDP-J	1	mini Display Port, DP , HBR3 test fixture TPA-P receptacle
2	ZX200L508-HD	0	USB based Termination board
3	ZX00WT9NM	0	SMA Wrench Torque 5/16" (8mm) 9 NM (8lb-in)

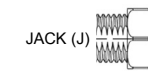
**S-Parameter, Insertion loss:
See Page 2**



Circuit Diagram



Ordering INFO:



Part Number: ZX210SmDP-J

Note
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SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT		ASSEMBLY DRAWING ITEM: ZX210SmDP-J
DESCRIPTION: Mini Display Port DP 1.4 HBR3 1.2b CTS Test Fixture TPA-P TDR receptacle		
CHECKED: M. MARINA	DRAWN: SLAVIK	REVISION: 1.0 SHEET: 1 OF 2

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Product Name: ZX210SmDP Display Port, DP 1.4 HBR3 , CTS 1.2b breakout adapter – test module TPA-P TDR mini receptacle Cont's

Test Record: Test record for the ZX210SmDP-J TPA-P TDR mini Display Port breakout adapter – test module

[ZXTR-ZX210SmDP-J](#)

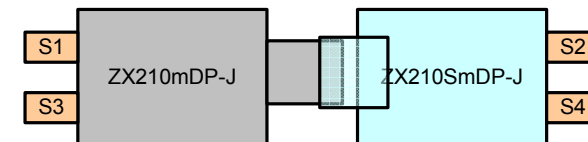
Insertion loss: Very low insertion loss typical -4.5dB at 8.1GHz

Insertion loss table

Frequency	Insertion Loss (dB)		
	Min	Typical	Max.
1.62GHz	-0.90	-0.95	-1.03
2.7GHz	-1.20	-1.30	-1.68
5.4GHz	-3.20	-4.00	-4.20
8.1GHz	3.25	-4.50	-4.95

S-Parameter files: The S-Parameter was obtained using mated ZX210mDP-J and ZX210SmDP-J mini Display Port breakout adapter – test module as shown above. Please download the S-Parameter files, .s2p files for all the 20 signals :

[ZX210mDP-ZX210SmDP-s-parameter](#)



Test network : ZX210mDP (Plug) & ZX210SmDP (Receptacle) via the supplied SMA cable assembly via connector pins 1 through 20
S12 : Pin 1 .. Pin 20



Fully assembled ZX210SmDP-J

Display Port Connector type (Plug)				Display Port Connector type(mini Plug - mDP)					
Pin	Labeled Coax	Connector Front		Connector Standard (Plug)	Pin	Labeled Coax	Connector		Connector type (mini Plug - mDP)
		Top	Bottom				Top	Bottom	
1	T3_N / R0_P			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		MLOP_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

MLxN / MLyP: MLxN when Upstream(UFP)

MLyP when Downstream(DFP)

ZX210D, ZX210mD are UFP, Upstream Facing Port

ZX210SD, ZX210SmD are DFP, DownStream Facing Port.

HPD: Hot Plug Detect

MLxN / MLyP: MLxN when Upstream(UFP)

MLyP when Downstream(DFP)

ZX210D, ZX210mD are UFP, Upstream Facing Port

ZX210SD, ZX210SmD are DFP, DownStream Facing Port.

HPD: Hot Plug Detect

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