Product Name: **ZX200SCP-21** HDMI 1.4a 2.0 2.1 type C (mini) receptacle TPA-P TDR electrical breakout adapter

Product Description:

HDMI TPA-R TDR electrical test and measurement breakout adapter supporting Type **C** (mini) HDMI Receptacle connector. All 19 connector signals are accessible via SMA connector. Available GND test points interfacing to internal GND planes as well as top/bottom GND fills. The HDMI electrical breakout adapter is designed for application requiring HDMI Type C (mini) receptacle connector interface for purpose of test and measurement. **ZX200SCP-21** HDMI breakout adapter covers 4K 1080p 720p 520p 480p at 50Hz 60Hz 100Hz and 120Hz operating at 2.97GHz (1.4a compliance) **5.94GHz (2.0 compliance)** bandwidth. ZX200SCP-21 HDMI electrical breakout adapter is designed for 16GHz bandwidth meeting requirement of extended video format 4K 60Hz 100Hz 120Hz and upcoming HDMI 2.1 specification supporting 8K signal bandwidth.

- Insertion loss: 6GHz : $\leq$ -3dB   8GHz : $\leq$ -4dB
- Multi-layer PCB design
- Designed for 16GHz bandwidth.
- Access to All 19 HDMI signals.
- Access to internal GND planes as well as TOP/Bottom GND fills via GND Test Points
- Supports upcoming HDMI 2.1 specification supporting 8K signal bandwidth

ZX200SCP-21 is offered supporting HDMI Type C (mini)Receptacle connector.

ZX200SCP-21 is offered with built-in SMA cable assemblies interfacing directly to scope probe or test equipment.
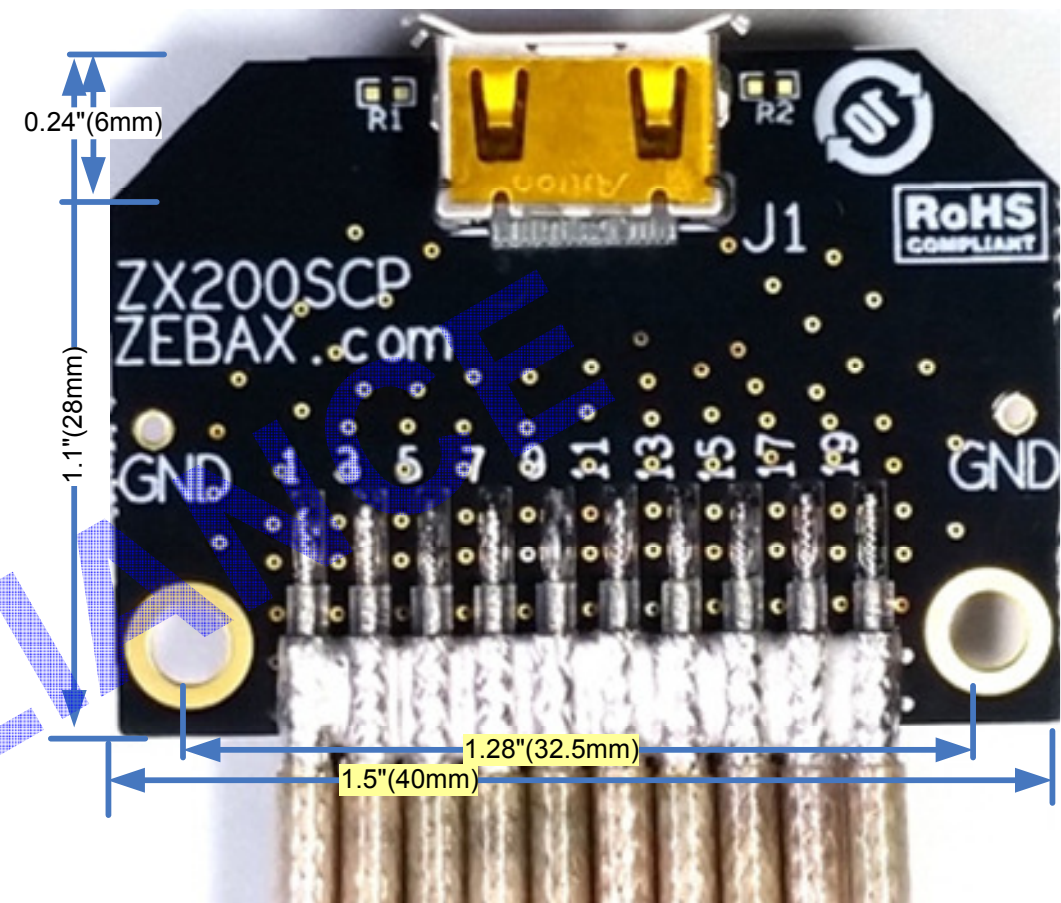
- For proper signal measurements, please connect GND test point to system GND. The GND test points are connected to internal GND planes as well as TOP/Bottom GND fills.
- The HDMI connector's case may be connected to the module's GND planes by installing 0 Ω in R1, R2 locations. As default the connector's case is not connected to the module's GND planes.

Zebax offer ZX202HD (EDID emulator) and ZX200L508-HD (HDMI Termination board) for application requiring EDID emulator or termination load module.
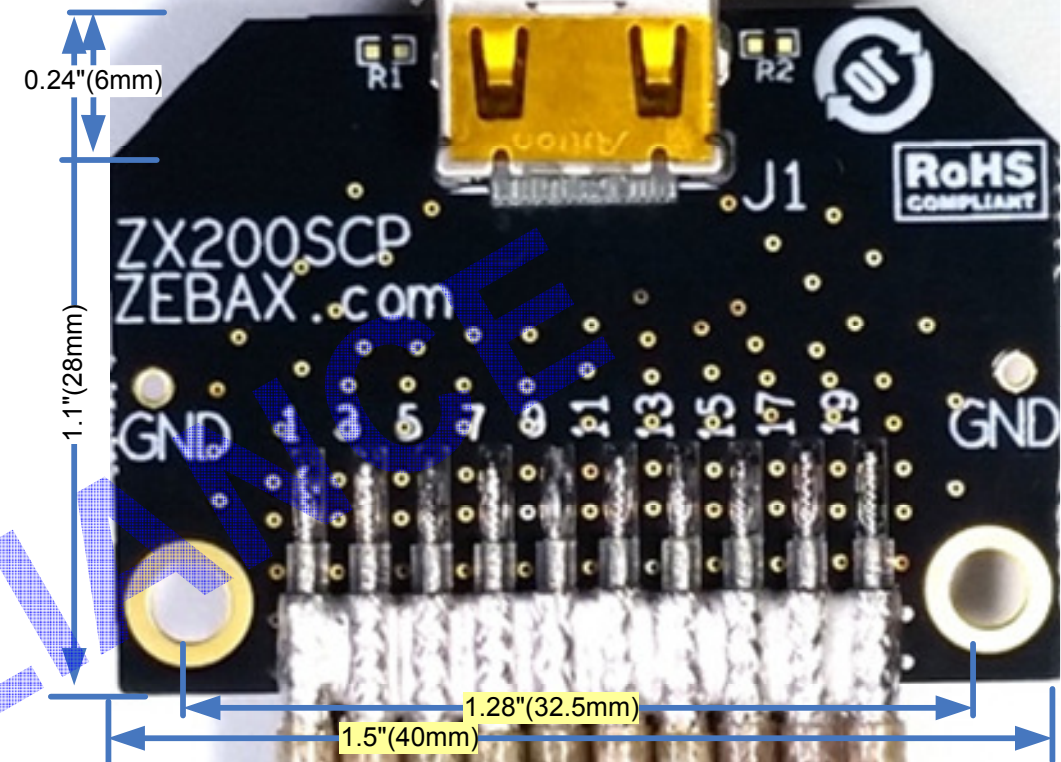
Application: Full HDMI **1.4a 2.0 2.1** electrical test and measurement.

Supported resolutions: Full HDMI 1.4a 2.0 is supported, including:
8K and **4K at 60Hz 100Hz 120Hz operating at 5.94GHz to 10GHz.**
Supports upcoming HDMI 2.1 8K resolution 10GHz bandwidth.

Mates with : **HDMI type C Plug** connector.
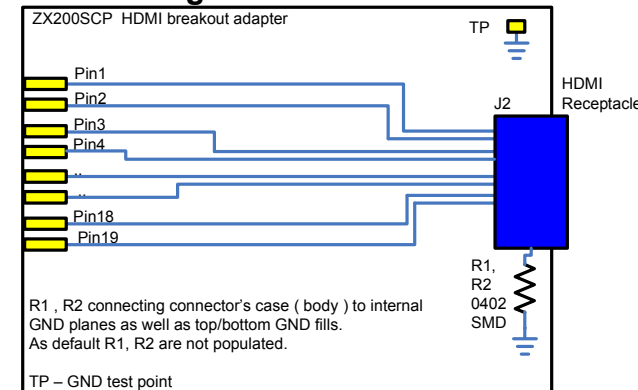**SMA connectors** mates with standard SMA connector

S-Parameter, Insertion loss: See Page 2

0.24"(6mm)
1.1"(28mm)
1.28"(32.5mm)
1.5"(40mm)

R1   R2
J1
ZX200SCP
ZEBAX .com
GND   1 3 5 7 9 11 13 15 17   GND
RoHS COMPLIANT

Package includes:

Item	Part number	Quantity	Description
1	ZX200SCP-21	1	HDMI type C TPA-R electrical breakout adapter
2	ZX200L508-HD	0	USB based HDMI Termination board
3	ZX202HD	0	HDMI EDID emulation module
4	ZX00WT-09NM	0	SMA Wrench Torque 5/16" (8mm)

JACK (J)

Ordering INFO:
Part Number
ZX200SCP

Note
ALL ZEBAX products are **RoHS** compliant and **Lead Free** unless otherwise indicated.

Circuit Diagram

ZX200SCP HDMI breakout adapter
TP
Pin1
Pin2
Pin3
Pin4
Pin18
Pin19
J2
HDMI Receptacle
R1, R2
0402 SMD

R1 , R2 connecting connector's case (body) to internal GND planes as well as top/bottom GND fills.
As default R1, R2 are not populated.

TP – GND test point

ZEBAX TECHNOLOGIES
SANTA CRUZ, CA U.S.A (831) 2 2 2 – 0717
WWW.ZEBAX.COM

SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT	ASSEMBLY DRAWING
	ITEM: **ZX200SCP-21**

DESCRIPTION: **HDMI 1.4a 2.0 2.1 type C (mini) receptacle TPA-R TDR electrical breakout adapter 16GHz**

CHECKED: M. MARINA	DRAWN: SLAVIK	REVISSION: **1.0**
		SHEET: 1 OF 2

Product Name: **ZX200SCP-21** HDMI 1.4a 2.0 2.1 type C (mini) receptacle TPA-P TDR electrical breakout adapter , Cont's

Test procedure: ZXAN-HDMI-2.1-Test-Procedure application note
provides HDMI electrical test procedure.

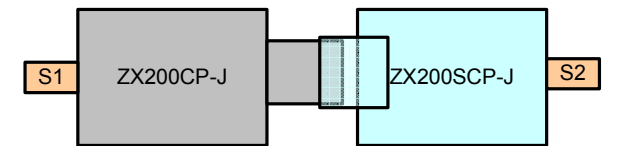S1 ZX200CP-J   ZX200SCP-J S2

Test network : ZX200CP-x Plug and Receptacle via the supplied SMA cable assembly
S12 : Pins 1 .. 19

Test Record: Below are links to the existing test record for the ZX200SCP-21 TPA-P TDR HDMI electrical breakout adapter.

ZXTR-ZX200CP-SCP

Fully assembled ZX200SCP-21 HDMI electrical breakout adpater

Insertion loss: ZX200SCP-20 with low insertion loss measuring ≤ -3dB at 6GHz ≤ -4dB at 8GHz

S-Parameter files: The S-Parameter was obtained using mated ZX200CP-21 and ZX200SCP-21 HDMI electrical breakout adapters. Please download the S-Parameter files, .s2p files for ALL 19 signals networks from here :

ZX200CP-SCP-21-S-Parameter

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

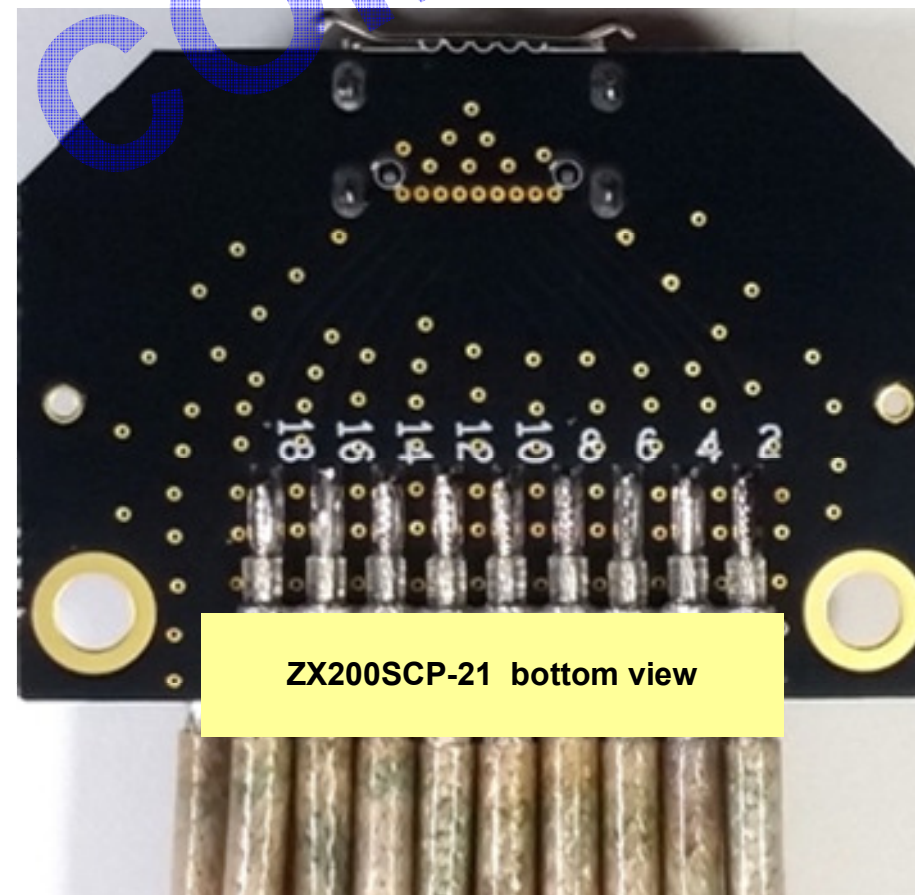**Pinouts:** HDMI Plug signal assignments listed below

Pin	HDMI Connector type		
	Type A	Type C (mini)	Type D (micro)
1	TXD2P	GND	HOTPLUG/ HEAC-
2	GND	TXD2P	RSV / HEAC+
3	TXD2N	TXD2N	TXD2P
4	TXD1P	GND	GND
5	GND	TXD1P	TXD2N
6	TXD1N	TXD1N	TXD1P
7	TXD0P	GND	GND
8	GND	TXD0P	TXD1N
9	TXD0N	TXD0N	TXD0P
10	TXCP	GND	GND
11	GND	TXCP	TXD0N
12	TXCN	TXCN	TXCP
13	CEC	GND	GND
14	RSV / HEAC+	CEC	TXCN
15	DDC_SCL	DDC_SCL	CEC
16	DDC_SDA	DDC_SDA	GND
17	GND	RSV / HEAC+	DDC_SCL
18	+5V	+5V	DDC_SDA
19	HOTPLUG / HEAC-	HOTPLUG / HEAC-	+5V

ZX200SCP-21 bottom view

Note

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ASSEMBLY DRAWING

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DESCRIPTION: **HDMI 1.4a 2.0 2.1 type C (mini) receptacle TPA-R TDR electrical breakout adapter 16GHz**

CHECKED: M. MARINA

DRAWN: SLAVIK

REVISSION: **1.0**

SHEET: **2 OF 2**