

EVRTH130

Track and Hold Evaluation Board

Features

- ◆ RF connectors for all signal / clock inputs and signal output.
- ◆ Fully Assembled and Tested.

Product Description

The EVRTH130 is an evaluation board designed to demonstrate the performance of the Teledyne Scientific RTH130-QN. The board comes fully assembled and tested, providing an easy way to

evaluate the track and hold performance. All is needed are power, a differential input and clock signals.

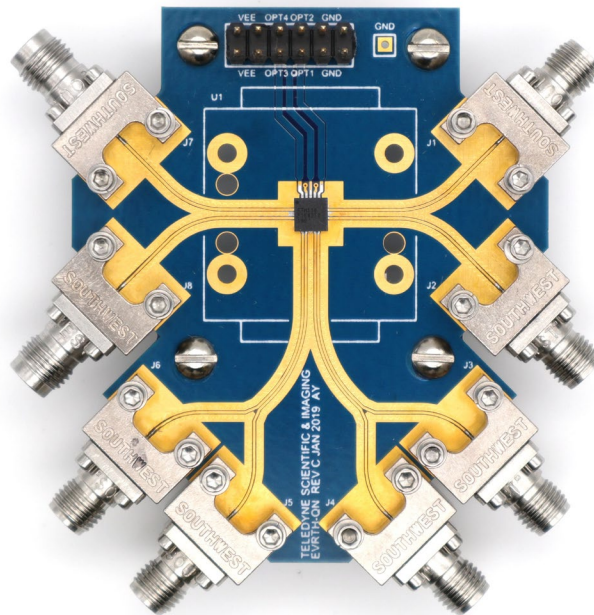


Figure 1– EVRTH130 Board

Ordering information

PART NUMBER	DESCRIPTION
EVRTH130	Track and Hold Evaluation Module with a RTH130-QN

Signal Description

P/I/O	PIN	NUM.	NAME	FUNCTION
P	11,12	2	GND	Power Supply Ground
P	3,4,5,6,7,8	6	VEE	Negative Power Supply
I	SMA J5	1	CLKIP	Clock Input
I	SMA J6	1	CLKIN	
I	SMA J7	1	INP	Analog Input (2.4mm Connectors)
I	SMA J8	1	INN	
O	SMA J2	1	OUTP	Analog Output
O	SMA J1	1	OUTN	
I/O	1,2	2	TSEN	Temperature Sensor
I	9,10	2	CCAL	Current Cal: Connect to GND

Power Supplies

The evaluation board requires a negative supply voltage. VEE is a -5.2V supply (290mA nominal). The evaluation module also requires a ground connection. These connections are made using cables connected to the 6x2 pin power header located at the top of the board (Fig 4 and 5).

Inputs

The EVRTH130 evaluation board has high performance, 2.4mm connectors for the differential inputs. The clocks and outputs have SMA connectors. The signal inputs are terminated on-chip with 50Ω RF equivalent impedance to ground (refer to the RTH130 datasheet for the equivalent circuit).

It is recommended that the inputs are AC coupled. If a DC coupled connection is used the input common mode voltage should be observed (refer to the RTH130 datasheet). In case of a single ended

connection, the unused input should be terminated with a 50Ω resistance to ground through a capacitor.

The clock CLKIP, CLKIN, is the clock for the two individual track and holds. It directly clocks the first track and hold. The clock for the second track and hold are generated internally from CLKI.

It is recommended that they are AC coupled, if not the clock signal should comply with the clock common mode voltage. When a single ended clock is used, the unused input should be terminated with a 50Ω resistance to ground through a capacitor.

Outputs

The EVRTH130 has complementary outputs, OUTP and OUTN, accessible through high performance SMA connectors. Both outputs should be terminated with 50Ω impedance to ground (even if a single ended connection is used). For single ended applications an output balun may be used.

PCB Evaluation

Input Path Measurements

A PCB test board (Fig 2) was design with same geometry of the input path (replicated twice on the test PCB). The attenuation was then measured using a PNA and the result is displayed in the graph below (Fig 3).



Figure 2– Input path test PCB.

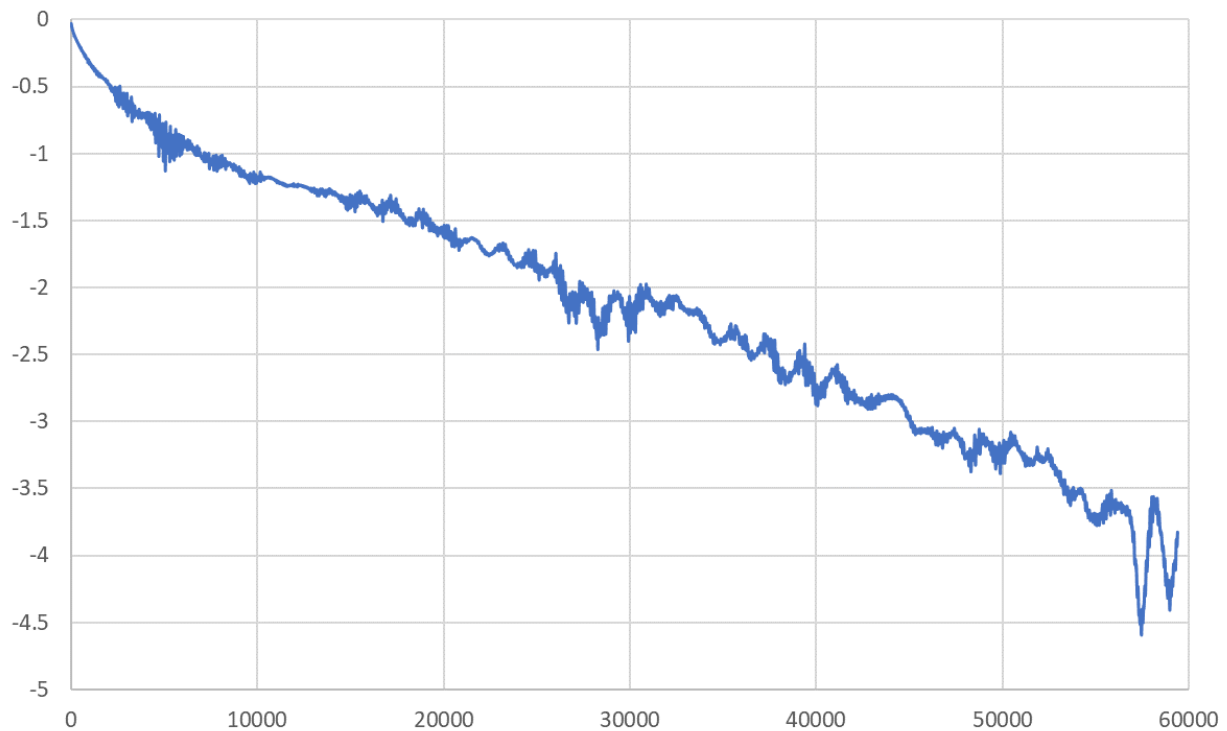


Figure 3– Input path test PCB attenuation.

Board Connections

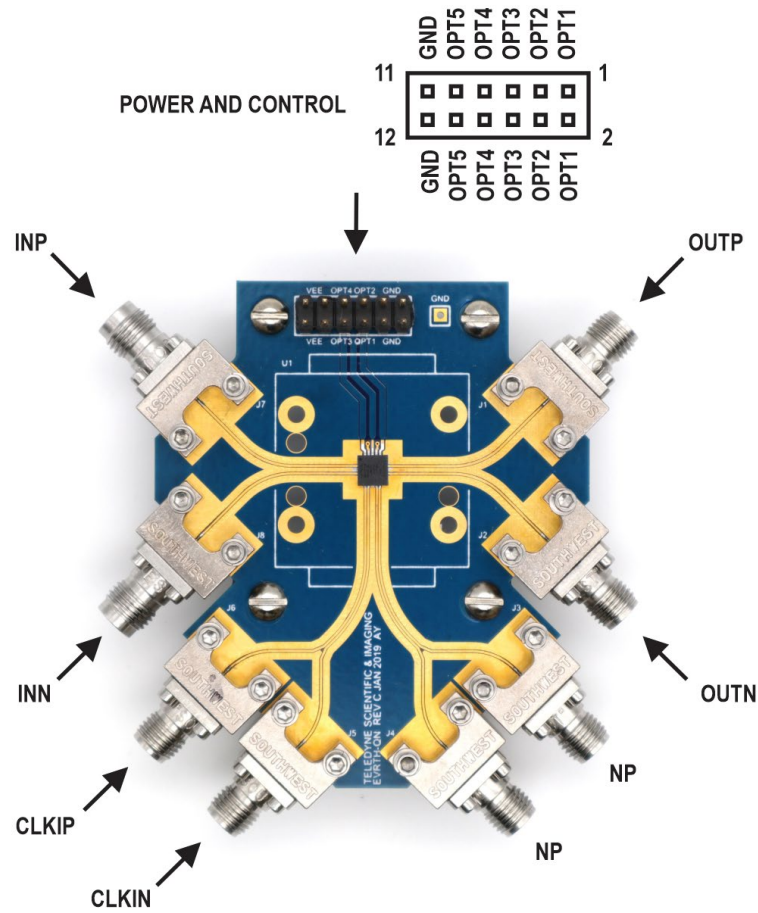


Figure 4 – Top view

DEVICE-QN	RTH090	RTH110	RTH120	RTH130	TPS002	TCB001	TPG002
OPT1	VEE	TSEN	CNTRL	TSEN	REF	REF	TSEN
OPT2	VEE	VEE	VEE	VEE	VCC	VCC	VTERM
OPT3	GND	GND	GND	VEE	-	-	VEE
OPT4	VEE	VEE	VEE	VEE	VCC	VCC	VEE
OPT5	VEE	CCAL	IREF	CCAL	-	-	DRVGC

Figure 5 – Connections for Cable to be Used with EV-QN Rev E.