

EVRTH090

Track and Hold Evaluation Module

Features

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

Product Description

The EVRTH090 is an evaluation Module designed to demonstrate the performance of the Teledyne Scientific RTH090-HQ. The module comes fully

assembled and tested, providing an easy way to evaluate the track and hold performance. All is needed are power, differential input and clock signals.



Figure 1– EVRTH90 Module

Ordering information

PART NUMBER	DESCRIPTION
EVRTH090	Track and Hold Evaluation Module with a RTH090-HQ

Signal Description

P/I/O	PIN	NUM.	NAME	FUNCTION
P	1,3,5	3	GND	Power Supply Ground
P	2,4,6,7,8,9	6	VEE	Negative Power Supply
I	SMA	1	CLK1P	Clock 1 Input: High = TH1 in Track Mode Low = TH1 in Hold Mode
I	SMA	1	CLK1N	
I	SMA	1	CLK2P	Clock 2 Input: High = TH2 in Track Mode Low = TH2 in Hold Mode
I	SMA	1	CLK2N	
I	K	1	INP	Analog Input
I	K	1	INN	
O	SMA	1	OUTP	Analog Output
O	SMA	1	OUTN	
R	10	1	NC	Reserved

Power Supplies

The evaluation module requires a negative supply voltage. VEE is a -5V supply (260mA nominal). The evaluation module also requires a ground connection. These connections are made using cables connected to the 5x2pin power header located at the side of the module (Fig 5).

Inputs

The EVRTH090 evaluation module has high performance, SMA connectors for the differential clocks and output signal. The inputs use K connectors. The clock and signal inputs are terminated on-chip with 50Ω RF equivalent impedance to ground (refer to the RTH090 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 RTH090 datasheet). In case of a single ended connection, the unused input can be terminated with a 50Ω resistance to ground through a capacitor or can be left floating.

The clocks CLK1P, CLK1N, CLK2P and CLK2N are the clocks for the two individual track and hold.

The clock circuit is similar to the input. 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 can be terminated with a 50Ω resistance to ground through a capacitor or just left floating.

The two track and hold can be clocked independently (as long as the phase relationship is maintained). Single ended or differential clock schemes can be used, although better dynamic performance is achieved with a differential clock.

Figure 2 and Figure 3 illustrates simple out of phase clocking schemes, both differential and single ended. In the case of single ended clocking, the balun provide the CLK1P and CLK2P. Another option for a single ended configuration is to use a 180 degree power splitter instead of the balun.

Outputs

The EVRTH090 has complementary outputs, OUTP and OUTN, accessible through high performance SMA connectors. Both outputs should be terminated with AC 50Ω impedance to ground (even if a single ended connection is used). For single ended applications an output balun may be used.

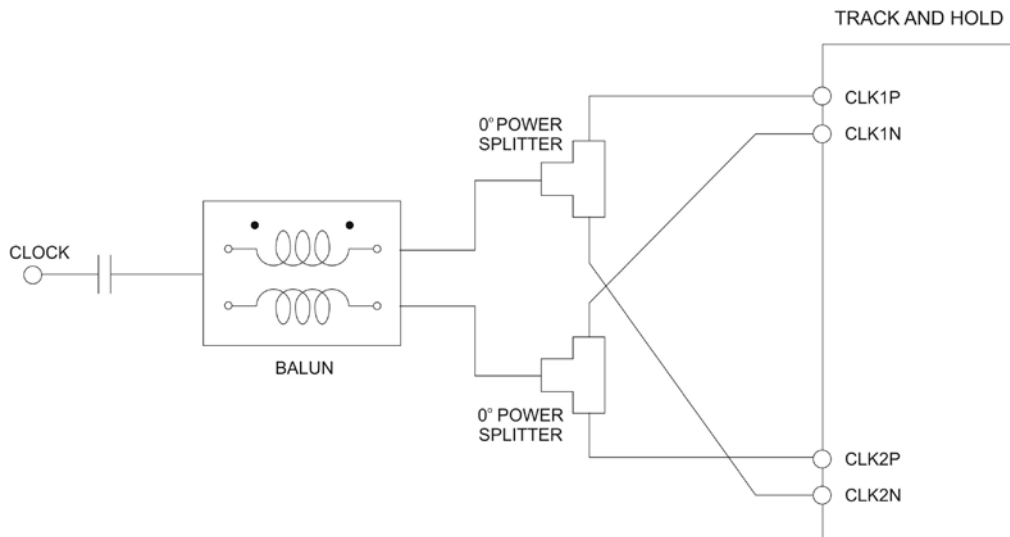


Figure 2– Setup for simple out of phase differential clocking

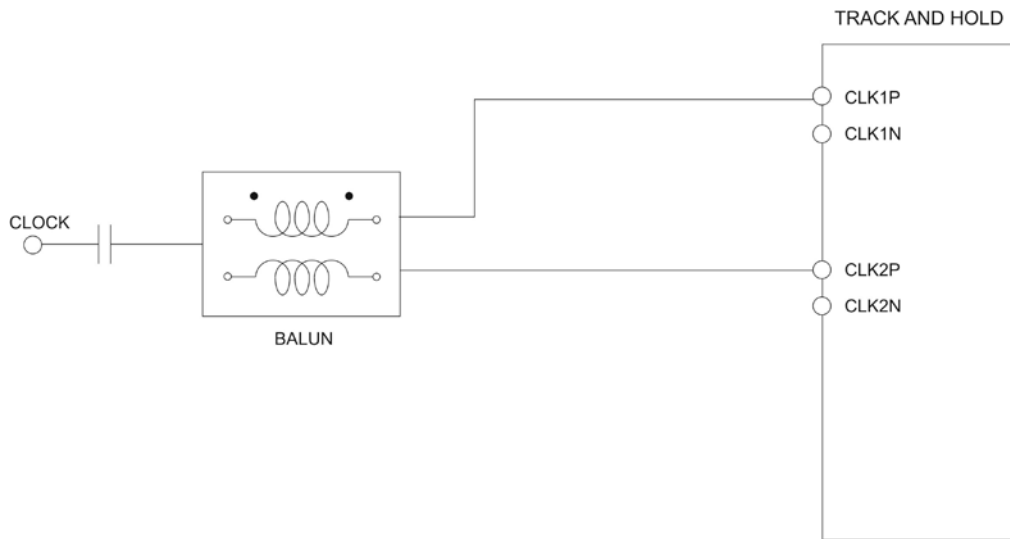


Figure 3– Setup for single ended clocking

Module Configuration

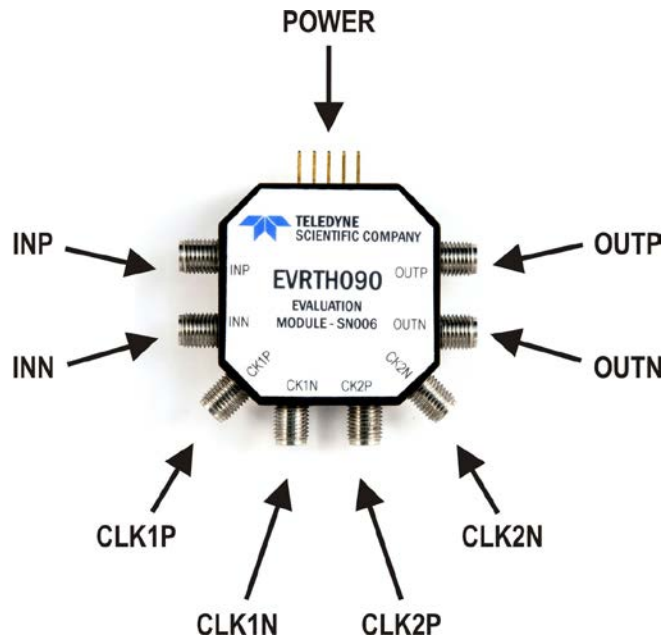


Figure 4 – Top view

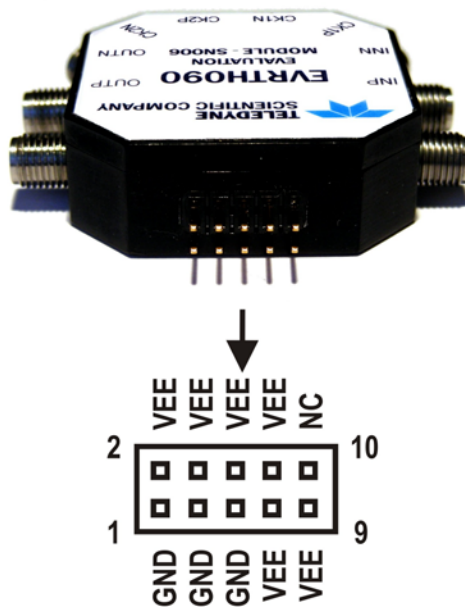


Figure 5 – Side view showing the power connector



Figure 6 – Side view showing the input, K connectors



Figure 7 – Side view showing the output, SMA connectors