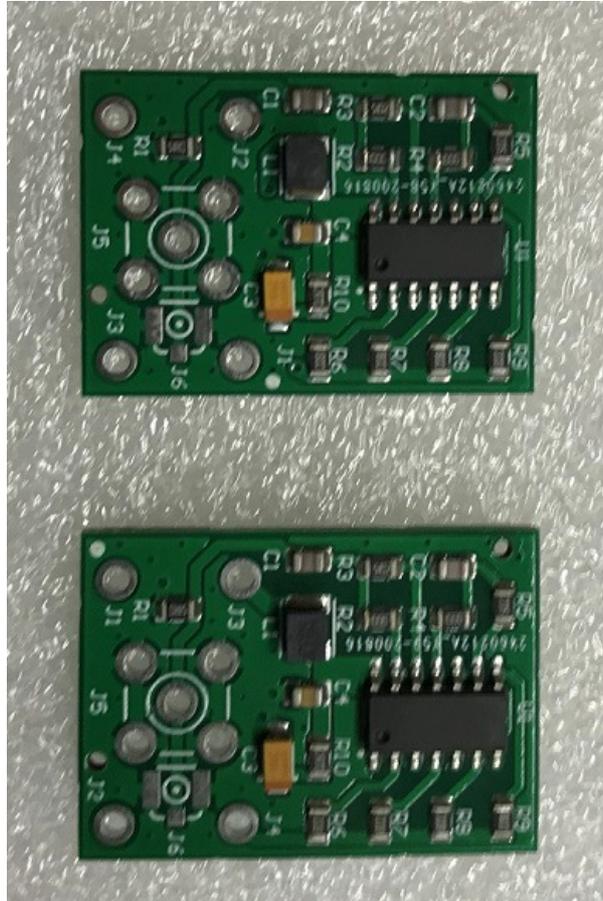


TWTMC-STS Sine to square converters



It's a little board that converts the sine wave output of oscillators and frequency doublers into square wave. Digital devices such as FIFO or DAC have to be fed with square wave therefore this board is required when using the oscillators (TWTMC-DRIXO, TWTMC-EXO, TWTMC-PXO, TWTMC-PXO-AIO) and/or the frequency doublers (TWTMC-DBM).

Features:

Oscillator type: any

Frequencies: 5.6448 MHz to 98.304 MHz

Input: 50 Ohm sine wave

Output: 50 Ohm square wave (+15 dBm)

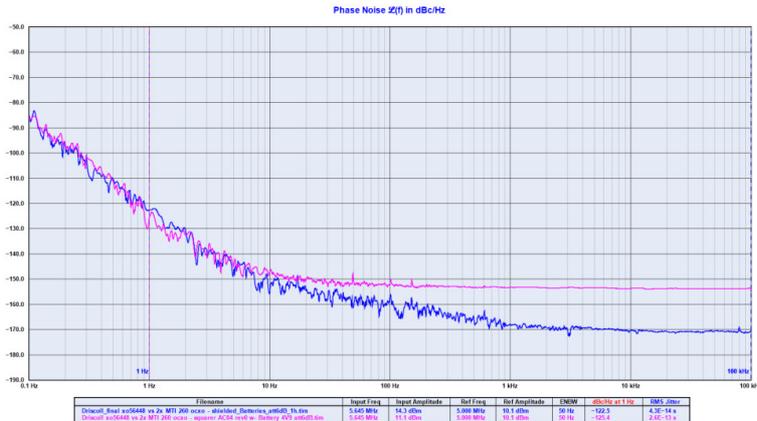
Board size: 21mm x 28mm

Power supply: 3.3 to 5 Vdc 15 mA

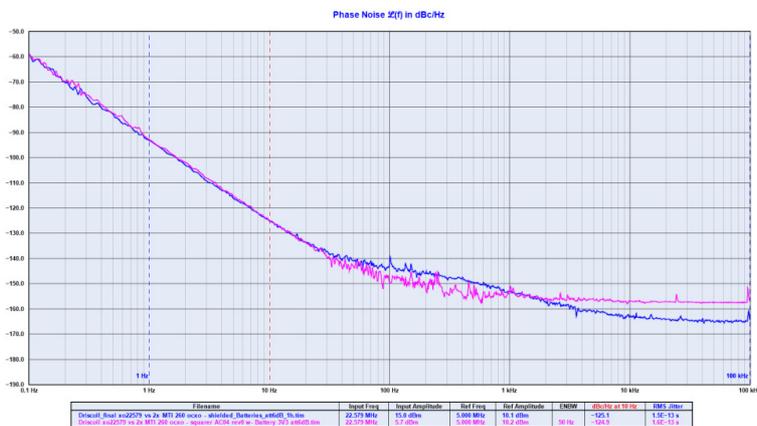
Board options: finished only

Note: supplied without connectors, fits Ian's FIFO

Measured phase noise of the Sine to square converter at different oscillator frequencies (5.6448 MHz and 22.5792 MHz)

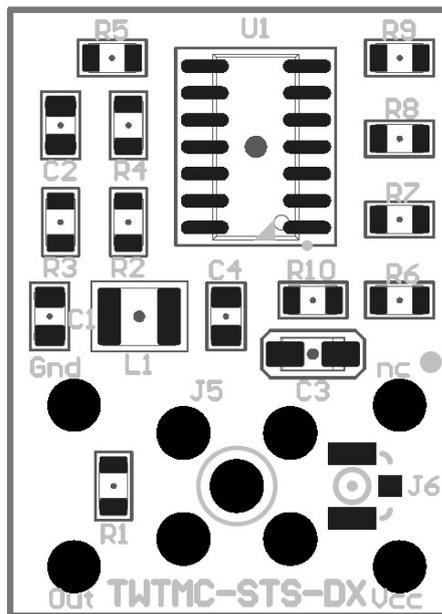
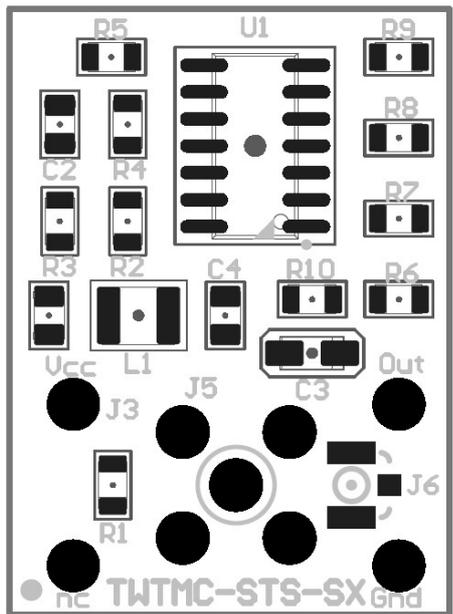


TWTMC-STX 5.6448 MHz phase noise (Driscoll oscillator)



TWTMC-STX 22.5792 MHz phase noise (Driscoll oscillator)

PCB layout



Connectors

J5: RF input. SMA plug connector and RG400 semi-rigid cable should be used to connect the board to the oscillator (Molex 73391-0070 Mouser part 538-73391-0070).

J6: RF input. U.fl plug connector alternative to SMA connector (Hirose U.FL-R-SMT(10) Mouser part 798-U.FL-R-SMT10).

Vcc, Out, Gnd: output pins to fit lan's boards. 4 pins extracted from a DIP socket can be soldered to the TWTMC-STs boards to fit directly lan's FIFO boards (Mill-Max 110-41-308-41-001000 Mouser part 575-11041308410010)

The screenshot shows the Superbat website's 'Custom Cable Assemblies' configuration interface. At the top, there is a navigation bar with the Superbat logo, contact information (email: info@rfsupplier.com, contact us button), and a search bar. Below the navigation bar, the page title is 'Custom Cable Assemblies' with a play button icon. A sub-header reads 'Design your Cable Assembly from any combination compatible connectors and cables.' Underneath, there is a section for 'Instructions' with three configuration panels:

- Cable Type:** A dropdown menu set to 'RG400' with an image of a coiled RG400 cable.
- Connector 1:** A dropdown menu set to 'SMA Straight Plug' with an image of an SMA straight plug.
- Connector 2:** A dropdown menu set to 'SMA Straight Plug' with an image of an SMA straight plug.

Below these panels is a 'Cable Length' section with a vertical line and input fields for '58 cm or' and '19.69 inch(s)', and a conversion note '1 inch = 2.54 cm'. To the right is a diagram of a cable assembly with 'Connector A' and 'Connector B' at each end, with 'Heat Shrink Tube' sections at the ends and a 'LENGTH' dimension line across the middle.

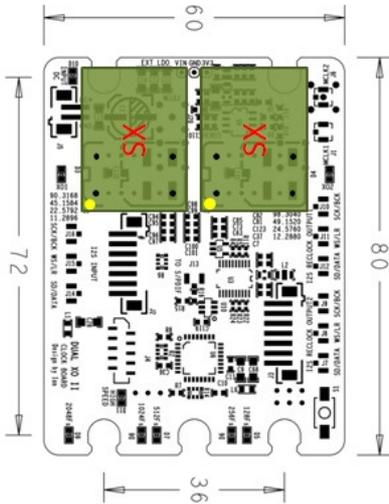
There are two different layouts for these boards:

- TWTMC-STs-SX (lan's Dual XO board, McFifo, FifoPi)
- TWTMC-STs-DX (McFifo, FifoPi)

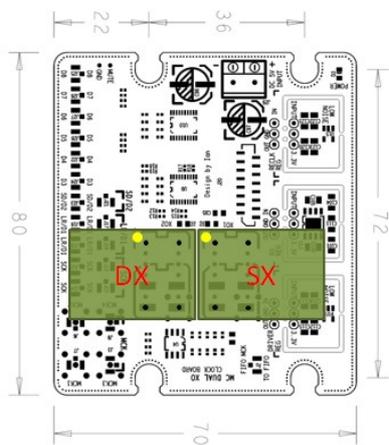
Fit the TWTMC-STS Sine to square converter into lan's FIFO

The following pictures show the correct placement of the TWTMC-STS-SX and the TWTMC-STS-DX boards on lan's FIFO buffer devices.

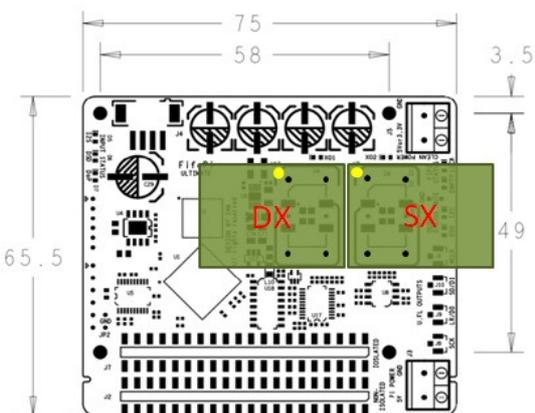
The Dual XO clock board needs 2 x TWTMC-STS-SX as in the following figure.



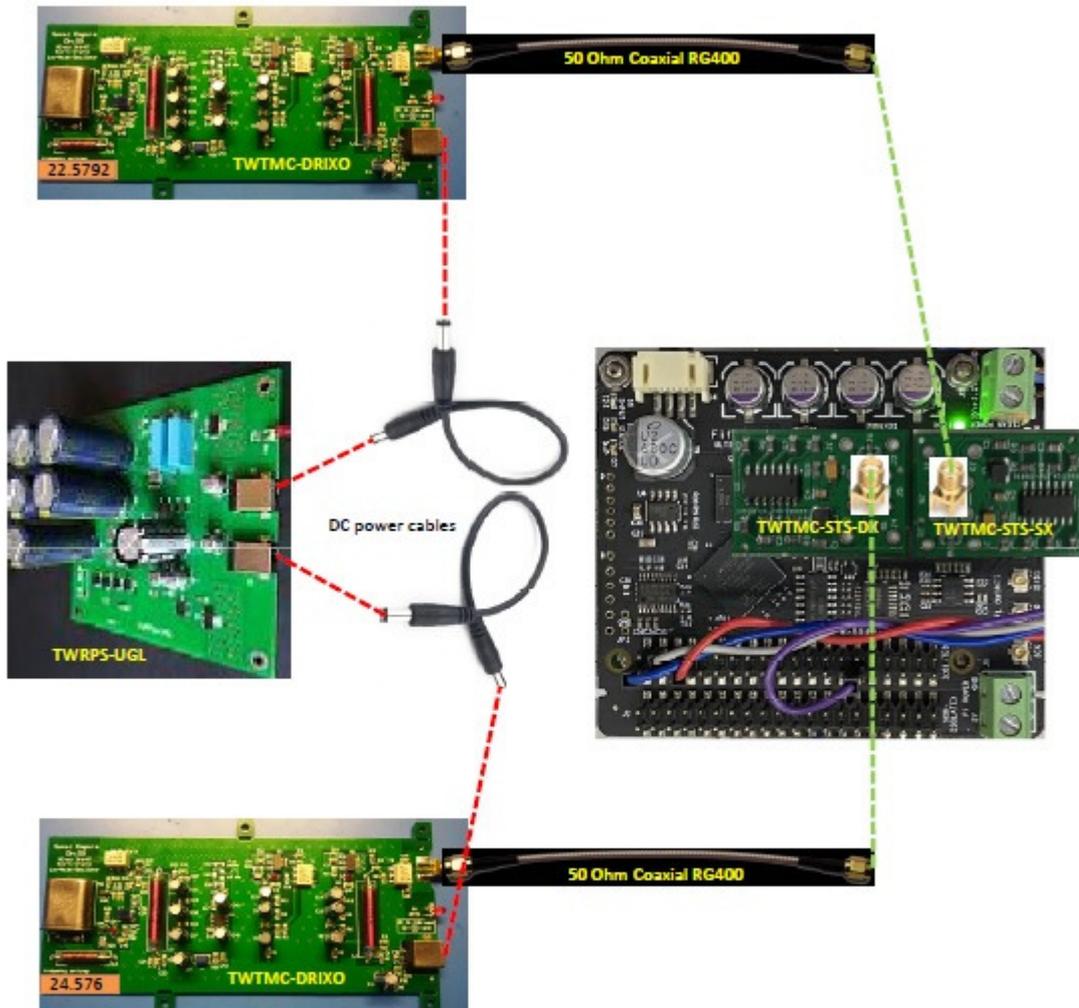
The MC Dual XO board needs 1 x TWTMC-STS-SX + 1 x TWTMC-STS-DX as in the following figure.



The FifoPi board needs 1 x TWTMC-STS-SX + 1 x TWTMC-STS-DX as in the following figure.



FifoPi master clock connections (22.5792 + 24.576 MHz)
2 oscillators + 2 sine to square converters + 1 power supply



- 1 x TWTCM-DRIXO 22.5792 MHz
- 1 x TWTCM-DRIXO 24.576 MHz
- 1 x TWTCM-STC-SX
- 1 x TWTCM-STC-DX
- 1 x TWRPS-UGL