

Brooks Shera GPS Frequency Standard

74HCT4520 Divide by 32 Modifications

For VCXOs with a frequency at 10 MHz or above it is desirable to increase the division ratio to 32. Division by 16 is the maximum that can be obtained with the 4520 4-bit counter U2a. A second 4520 can be connected "piggyback" fashion on top of U2 to achieve higher division ratios.

74HCT4520 Divide by 32 Modifications:

The power and grounds for the upper 4520 (U) are obtained by soldering together the appropriate pins to the lower 4520 (L) Pins 2,7,8 and 16.

Use wire jumpers to make the signal connections:

U1 to L6

U9 and U10 to L8

For division by 32 take the output from Upper pin 3 and connect it to the header (P3) pin 1 that feeds U3 pin 3.

This sounds more complicated than it is, and it leaves the PCB undisturbed so it is easy to return to the original configuration by plugging a normal 4520.

Clip the unneeded pins on upper 74HCT4520 (pins 4,5,6,11,112,13,14,15)

Upper	Lower
Pin 1	Pin 6
Pin 2	Pin 2 (+5v)
Pin 3	to PCB Header (P3) pin 1 (divide by 32)
Pins 4-6	NC (data out)
Pin 7	Pin 7 (gnd)
Pin 8	Pin 8 (gnd)
Pin 9	Pin 8 (gnd)
Pin 10	Pin 8 (gnd)
Pins 11-15	NC
Pin 16	Pin 16 vcc

