12,000 MHz Radio Telescope for $200

For the past year I have been experimenting with the 18-inch DDS dish antennas. The dish and LNB have no problem detecting the difference between cold sky, the Sun, worm bricks or a person's body.

I needed a simpler IF/Detector unit and had planned to use the one from the SARA 408 MHz receiver. Kerry Smith informed me of a Channel Master Model 1004IFD tuning meter that met all these needs and provided an **audible tuning indicator** the same as the SARA post processor.

The unit works great! With zero on the meter for a cold sky, it is full scale on the Sun and about 1/2 scale for a human or 300 deg. K.

Here is a photo of the LBT (Little Bitty Telescope). Note the offset feed like the GBT and where the shadow of the Sun must be for peak output.

The Channel Master Model 1004IFD tuning meter available from www.satwarehouse.com is shown below. The unit is $99 plus shipping. Kerry found a similar model number unit from www.starkelectronic.com for $75 but it appears to be an older model. I did not research this. The www.satwarehouse.com unit is shown below with a full-scale deflection from the sun.

What else do you need?
The unit normally gets 15 vdc from the satellite receiver in the house via the coax center pin. Put a RF choke of about any value in series with your positive power lead and feed it into the SAT RX terminal. Don't forget the ground or negative connection. The unit may work fine on 12 vdc, but more on that later.
The 12gHZ LNB is installed in the 5 meter dish shown in the Sept/Oct98 SARA newsletter. I did not have the tuning meter when we were checking out the unit, but I am sure it will work better than the IF strip I constructed. (This was not the SARA IF strip)

The output of the tuning meter can be fed into your computer. Kerry noted that the coil in the meter movement would pick up movement of the unit by detecting changes in the earth's magnetic field, so you may want to replace the meter with a resistor that can be switched in and out of the circuit.

What's next?
My dish and tuning meter is being donated to the Space Place in Madison, WI to provide a demo radio telescope to use along with observations of sunspots. You could do the same!

I have two (2) more dishes and expect to have a portable 12 gHz interferometer at Greenbank next year. I will call it my VLI (Very Little Interferometer).

Kerry has detected the moon with his 4-foot dish. **Boy, excuses why you can not do any radio astronomy work are sure fading fast.**

Chuck Forster