

Radio Astronomy Supplies

VLB-1™ VLBI Capable Radio Telescope System (For 1420 MHz and 1665 MHz)



Radio Astronomy Supplies VLBI Receiver (Shown - 1665 MHz Version)

Another first by Radio Astronomy Supplies! The first VLBI capable receiver for serious research. This new research radio telescope converts the frequency range ± 10 MHz to a baseband output of 0-20 MHz. It is a triple conversion super heterodyne that utilizes three phase locked local oscillators which are locked to an external 10 MHz sine wave reference. The entire receiver is contained in a standard 19" rack mount chassis and is powered by an external desk top power supply that will operate from 110VAC or 220VAC without adjustment. A standard international power cord connector is supplied on this supply. The total DC power consumption of the complete receiver is about 4 Watts.



External LO Port



Baseband Frequency Out Port



RF Input Port

Two front panel mounted LEDs that serve dual functions. Both serve as power on indicators and as PLL UNLOCKED ALARMS. Under normal operation with the reference attached PLL chips in the local oscillators will be locked on frequency. This is indicated by a weak red glow from both LEDs. The left LED serves as a PLL indicator for the 1st and 2nd local oscillators while the right LED serves as the 3rd local oscillator indicator. If a PLL becomes unlocked (usually caused by low or absent 10 MHz reference drive) its indicator will glow very brightly. These indicators will normally flash brightly at power up as the PLL chips settle onto frequency. If the LEDs remain brightly lit after power up then check the reference level and frequency. If this seems ok then try cycling the power on/off for 10 seconds to reprogram the PLL chips. Any problem with the PLL circuits will most likely be caused by an improper reference signal.



Front Panel PLL LEDS

A Note of Praise for the Operation from a Well Respected Australian Researchers!

Hi Carl (RAS Lead Design Engineer),

I have some good news for you. We recently took the receiver you built for us and the rest of our gear to Hobart, Tasmania, Australia. We installed our complete system on the University of Tasmania 14m Radio Telescope . We attempted interferometry between the 14m and a 26m system they have on the same site some 150m away. We were successful!. Our first target was Taurus (Crab nebula) which is very bright at approx. 900 Jy. We then tried 15 and finally 5 Jy sources and achieved fringes in both cases, admittedly very weak in the case of the 5 Jy source. This is excellent news. Our next step is to try between a 6m dish back here in Auckland NZ and the 64m at Parkes in Australia. The combined area of these is approx. same as the 14 and 26m dishes at Hobart so we are hopeful of a positive result. I had a chance to test the receiver for coherence / freq. stability against the Hobart Hydrogen maser, it performed impeccably when fed from our Rubidium freq. standard. Your circuitry is very stable.

Included with your system: WD5AGO Low Noise LNA (33 dB @ .33 NF), Feed Horn, Instructions and Warranty plus Engineering access for questions and support.

The continuing good news is the price for this research grade system! In the continuing tradition of affordability, we offer this system for:

\$1500.00 plus shipping

(US - \$65.00 FEDEX Ground / Foreign (EURO) - 185.00 FEDEX / Pacific Rim - \$265.00 FEDEX /South America - \$250.00 FEDEX)

(Six - Eight week availability from the time we receive your order)

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