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Comet CMX-2300 Dual SWR/Power Meter

In the CMX-2300, Comet offers a convenient solution for the ham who operates HF and VHF, yet doesn't want the hassle of wrestling with separate SWR/power meters.

The CMX-2300 provides twin cross-needle meters in a single case. Each meter has two needles: one to indicate forward power and another to indicate reflected power. The needles cross each other over a vertical nomograph where you simultaneously read the resulting Standing Wave Ratio (SWR).

The left hand meter covers 1.8 to 200 MHz at three power levels: 30, 300 and 3000 W. The right hand meter measures 140 to 525 MHz at 20, 50 or 200 W. The meters are completely independent, along with their individual power settings. There is no need to switch between one and the other when you're transmitting at HF or VHF. This is a powerful convenience factor in a multitransmitter station.

The CMX-2300 case measures 9.9 × 3.9 × 5.4 inches with the meter bezels dominating the layout for easy viewing. The meters become illuminated when you supply 11-15 V dc to the input jack on the back panel. I found the lighting to be unusual, but in a pleasant way. The meters glow in a multicolored scheme that is quite striking in a darkened room. In normal light the meters present a beige background.

The enclosure is somewhat heavy at more than 3 pounds, but I suspect this is intended to help stabilize the CMX-2300. There are four SO-239 coaxial jacks on the back panel; HF in and out plus VHF in/out. When you have four cables connected to the CMX-2300 the extra weight helps keep the meters from tilting upward. For this review I had LMR-400 cables attached to the VHF side and Belden 9913 on the HF side. For the input connections I used right-angle SO-239/PL-259 adapters because the meter was positioned next to a wall and I couldn't spare the additional room required to gently curve the cables. In this configuration the CMX-2300 was able to keep all four of its rubber feet firmly on the shelf surface.

It is interesting to note that there are two BNC connectors on the rear panel of the CMX-2300. These are ports for sampling either VHF or HF RF for use with a station



In normal lighting you hardly notice anything out of the ordinary about the CMX-2300 meters. But turn down the lights and you'll see a remarkable change.



The rear of the CMX-2300. Note the BNC ports for sampling attenuated RF.

monitor, frequency counter, etc. Both ports provide 30 dB signal attenuation.

Also on the rear panel is a switch to select average or peak power reading for the meters. This switch affects the behavior of both meters. In other words, you can't have one meter reading average power and the other displaying peak power.

Using the CMX-2300

I found the CMX-2300 to be extremely simple to use. Once I had the meter connected, all I ever had to do was occasionally toggle the power switches if I happened to kick on an amplifier on either band. I enjoyed being able to monitor output power and SWR at a single glance, even after jumping from, say, a conversation on 15 meters to a little satellite work on 2 meters and 70 centimeters.

The ARRL Lab measured the accuracy of the unit used in this review and discovered some deviations from the forward/reflected power specification (+/- 10% at full scale) at the highest and lowest ends of the frequency

range. On 160 meters the CMX-2300 power readings were about 25% low. On 70 centimeters the CMX-2300 reads about 30% high. Otherwise, the meter met its accuracy specifications on all other bands. Insertion loss was measured at 0.2 dB or less, except on 70 centimeters where it rose to 0.5 dB.

Since we did not perform measurements on several CMX-2300s, we can't say if this behavior is typical of all units. I performed a few tweaks of the internal potentiometers and was able to make substantial improvements using a Bird wattmeter as my reference.

Capable Convenience

The accuracy issues notwithstanding, I found the CMX-2300 to be a handy item in the shack. It is a rugged, well-built meter that adds an extra dimension of operating convenience.

Distributed in the United States by NCG Inc, 15036 Sierra Bonita Lane, Chino, CA 91710; www.cometantenna.com. Available at many Amateur Radio dealers. Suggested list price: \$224.95.