

MILSAT.TXT

For those of you interested in listening to the 242 to 270Mhz Milsat band, here are some tips and equipment ideas to get you on the air. With our current activities in the Gulf, there's plenty to hear !

The antenna I'm using is a 12 turn axial mode helix...the preamp is a 20Db gasfet from Advanced Receiver Research. They advertise in QST. They dont stock a model for the Milsat band, but they'll gladly build you one for around \$100. Mine has a center freq. of 262Mhz.

The receiver is a Yaesu FRG-9600. It's continuous coverage from 60 to 905Mhz, all mode receive. Great little radio.

The helix antenna is VERY easy to build. For a center freq. of 262Mhz the following dimensions will give you about 16Db gain over the entire 242 to 270Mhz Milsat band: Diameter of the helix - 14.5 inches

Circumference of helix - 45.4 inches

pitch or spacing of turns - 11.35 inches

The dimensions are not critical. If you're within 10% of these numbers it'll work fine. The helix element can be constructed from refrigeration type copper tubing, 1/4 inch diameter. The reflector can be anything from chicken wire to hardware cloth. If you make it square, it should be .8 to 1.0 wavelengths on a side...so 45 inches will work well.

The polarization is Right Hand Circular...in other words,if you're standing behind the antenna, at the feedpoint end, the turns of the coil should spiral away from you in a clockwise direction. The nominal impedance of the above antenna is around 140 ohms. To get a good match to 52 ohm coax, try making the first quarter turn at the feedpoint end run parallel to the reflector at about 1/8 to 1/4 inch spacing from it. This will act as an impedance matching transformer and give you a pretty good match.

DO use good low-loss coax. Belden 9913 will give you the best results. This antenna has a beamwidth of 30 degrees and is VERY broadbanded. Be sure to use a non-conductive boom...hardwood works, fiberglass works much better. PVC tubing has too much sag...don't even bother !

What will you hear ?? ALL kinds of things !!! There are many different satellites and modes on this band. To really grasp what's up there, Larry Van Horn's book "Communications Satellites" is REQUIRED reading.(Grove Enterprises-Box 98-Brasstown,N.C.-28902)

As an example, I've heard everything from the Secretary of State, to McMurdo Station Antarctica, to Soviet telephone intercepts to A-10 and F-16 drivers involved in the current conflict. And that's just the stuff that is "in the clear"! The Tactical traffic from Iraq is in the clear in am mode, and really should'nt be there at all. Due

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to poor frequency management, the UHF com frequency they've chosen falls within the uplink passband of one of the satellite transponders. So, they're getting re-broadcast on the satellite just like your local 2 meter repeater ! (Very Weak...though copyable)
80% of the signals in this band ARE digitally encrypted...but the other 20% are some of the most interesting I've ever monitored.

The strongest signals are from Fleetsatcom 1(Pacific relay) in orbit at 100 degrees West, and Fleetsatcom 3 (Atlantic relay), at 23 degrees West. Try tuning 260 to 262.4 Mhz. Some of the signals are strong enough to copy with only a ground plane or discone antenna.

Have FUN !!!

73 de Carl WN8U

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