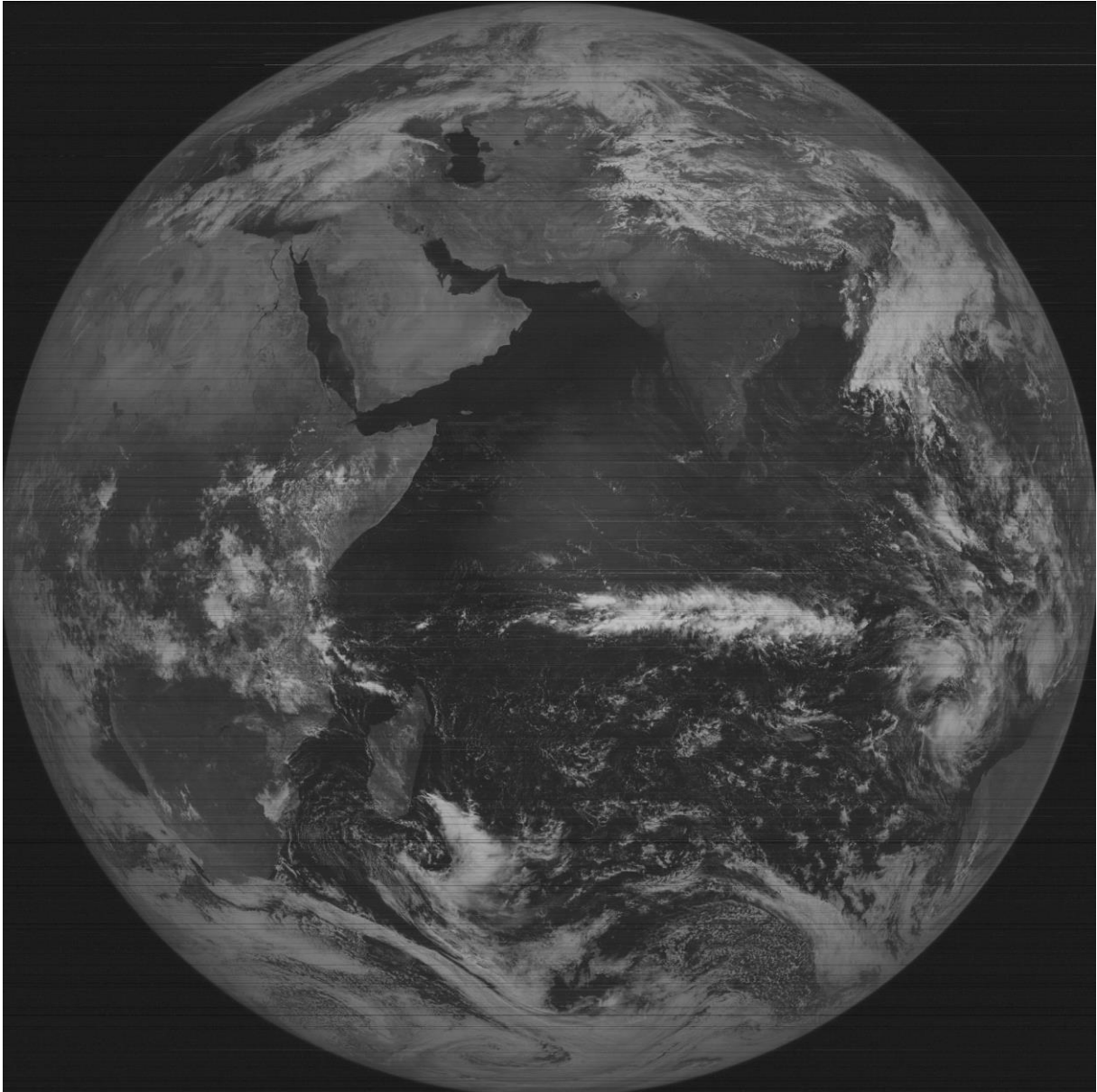


Dual Dipole linear feed for 1690 MHz to receive EWS-G1

Matthias, DD1US, April 25th 2021, Rev 1.0

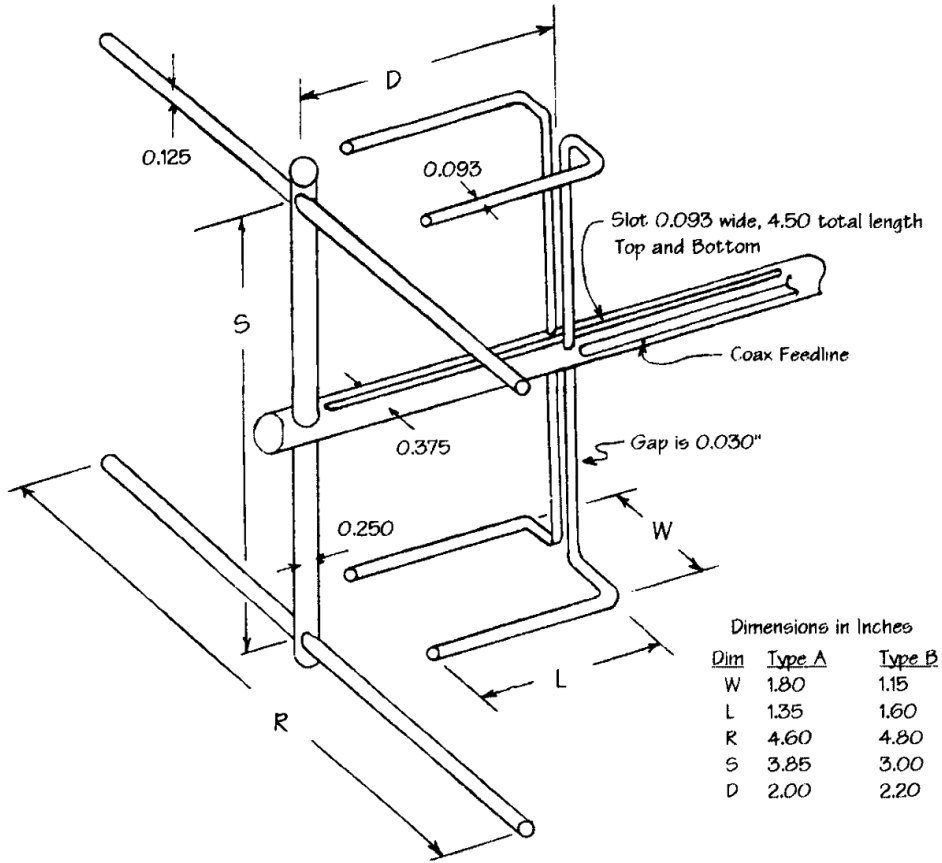
Recently I started receiving the GVAR transmissions of EWS-G1 in L-Band. This is the only geostationary satellite, which I can receive in L-Band transmitting weather images. In spite of the fact that I am using a 2.3m dish the pictures I am getting are noisy.



The feed I am using was built to receive the LEO weather satellites transmitting in L-Band. Therefore, it is RHCP polarized. As EWS-G1 is transmitting linear polarized I can improve my systems sensitivity by 3dB when changing to a linear polarized feed. My dish has a diameter of 2.3m and an f/D of 0.4.

I found an interesting article of a stacked dipole feed from Bob Larkin W7PUA which was printed in QEX journal February 1996. He described a feed for the 23cm ham radio band which was a modified dipole antenna with a single reflector.

He called the antenna “dual handlebar dipole with reflector feed” because of its unique shape.

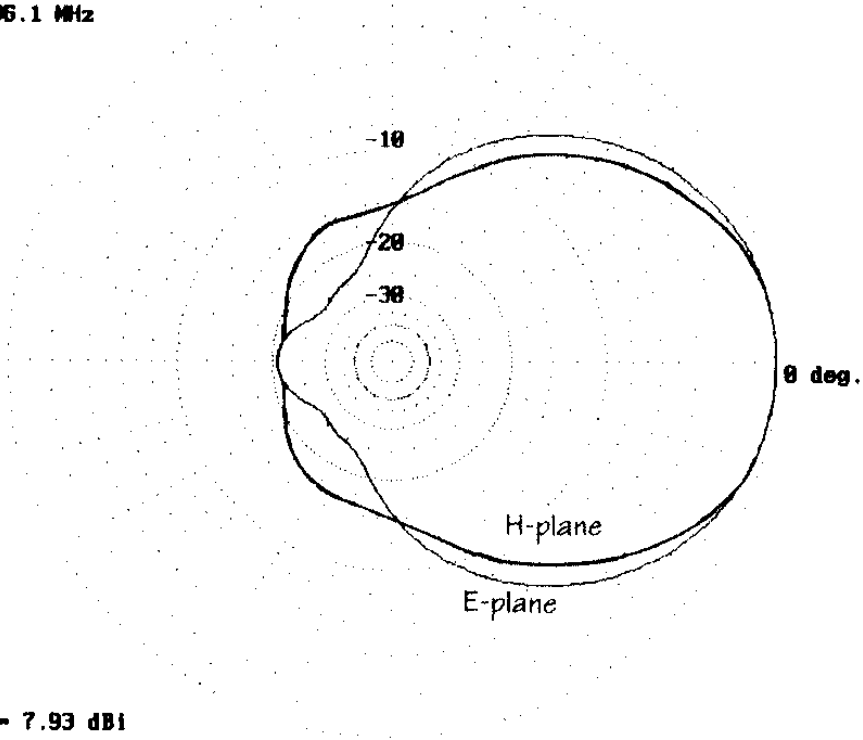


The gain and radiation pattern looks quite promising with E-plane and H-plane quite similar:

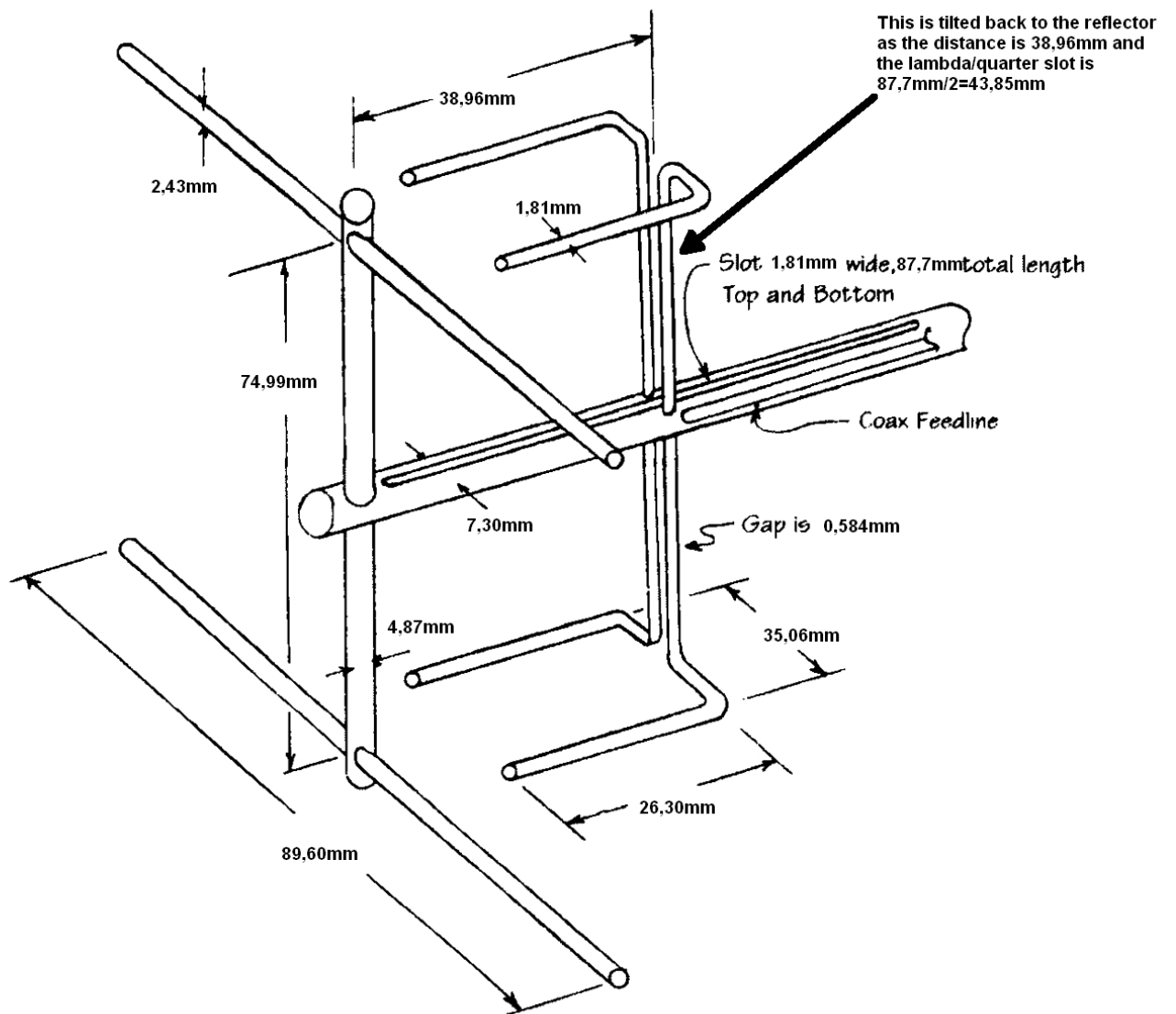
01-19-1996 16:27:22
 Freq = 1296.1 MHz

0 dB

EZNEC 1.0



Thus, I recalculated the antenna for 1690 MHz and a dish with an $f/D = 0.4$:



I have not yet built and tested this feed but plan to do so. If anyone has experience with such a feed or a similar one, I appreciate his feedback.

Kind regards

Matthias

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