

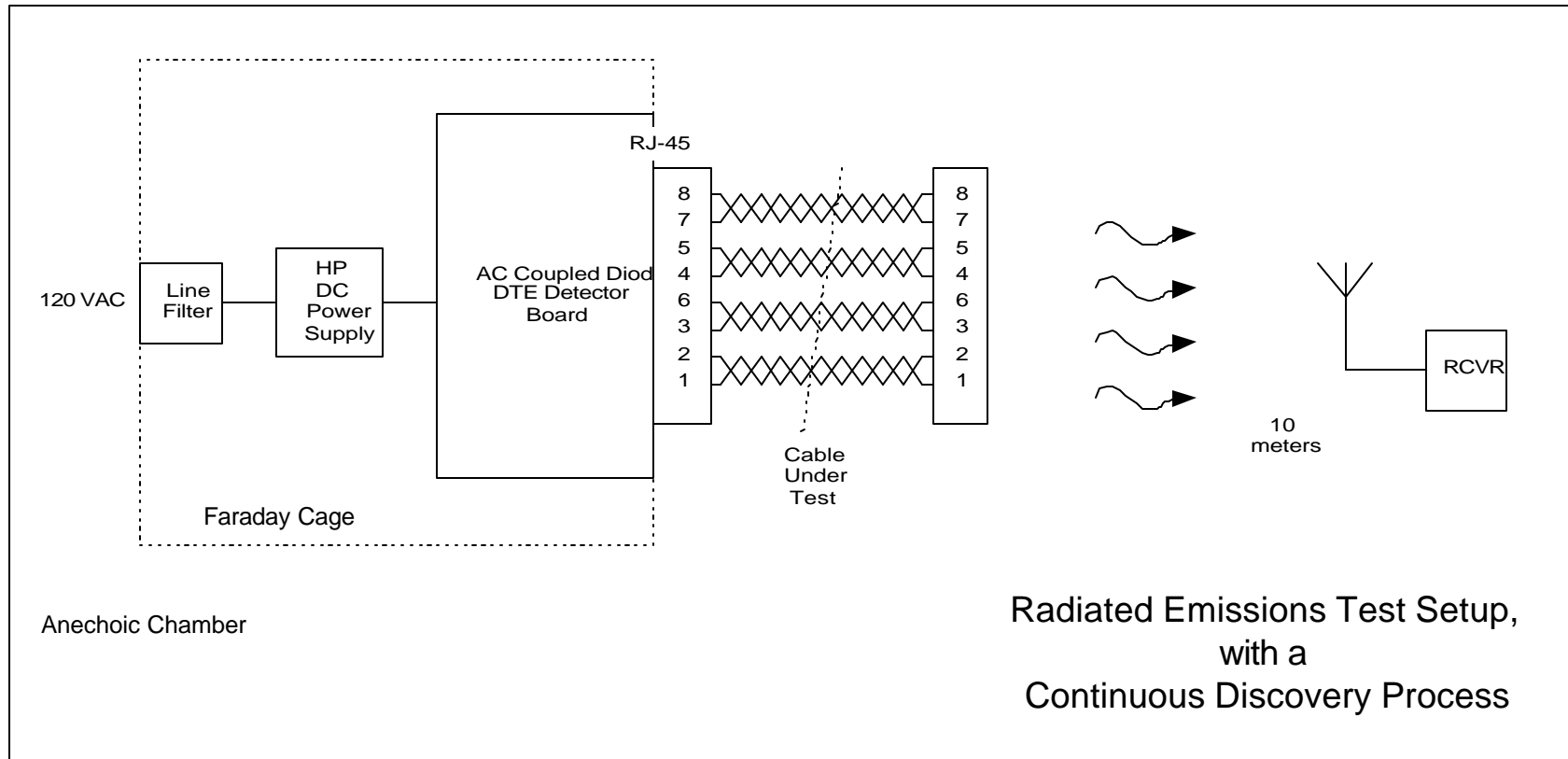
Nortel Coupled Diode Discovery Prototype

Radiated Emissions

IEEE802.3af Plenary Meeting
November 2000

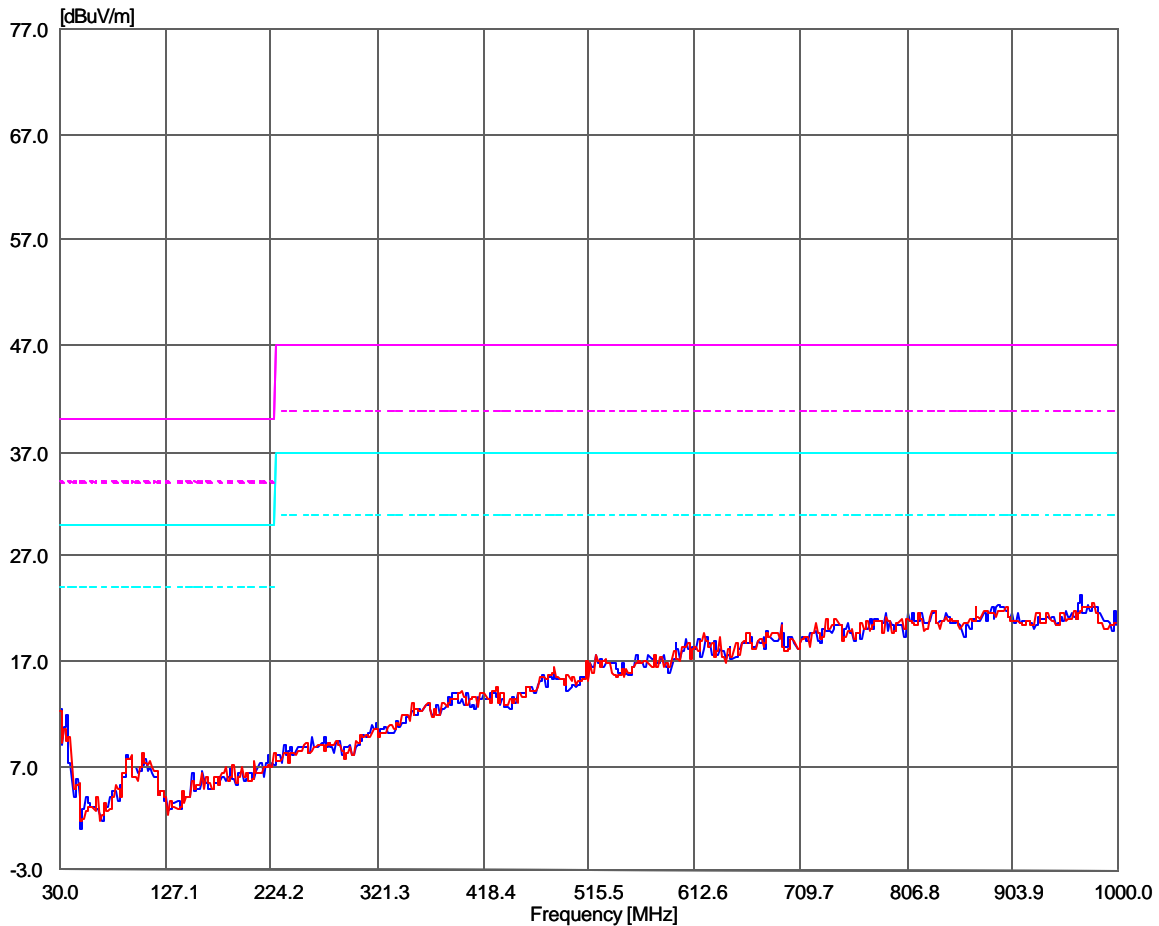
Rick Brooks, ribrooks@nortelnetworks.com

Acknowledgments:
TUV/Nortel 10 meter Anechoic Chamber



10 meter Anechoic Chamber Radiated Emissions Test Setup:

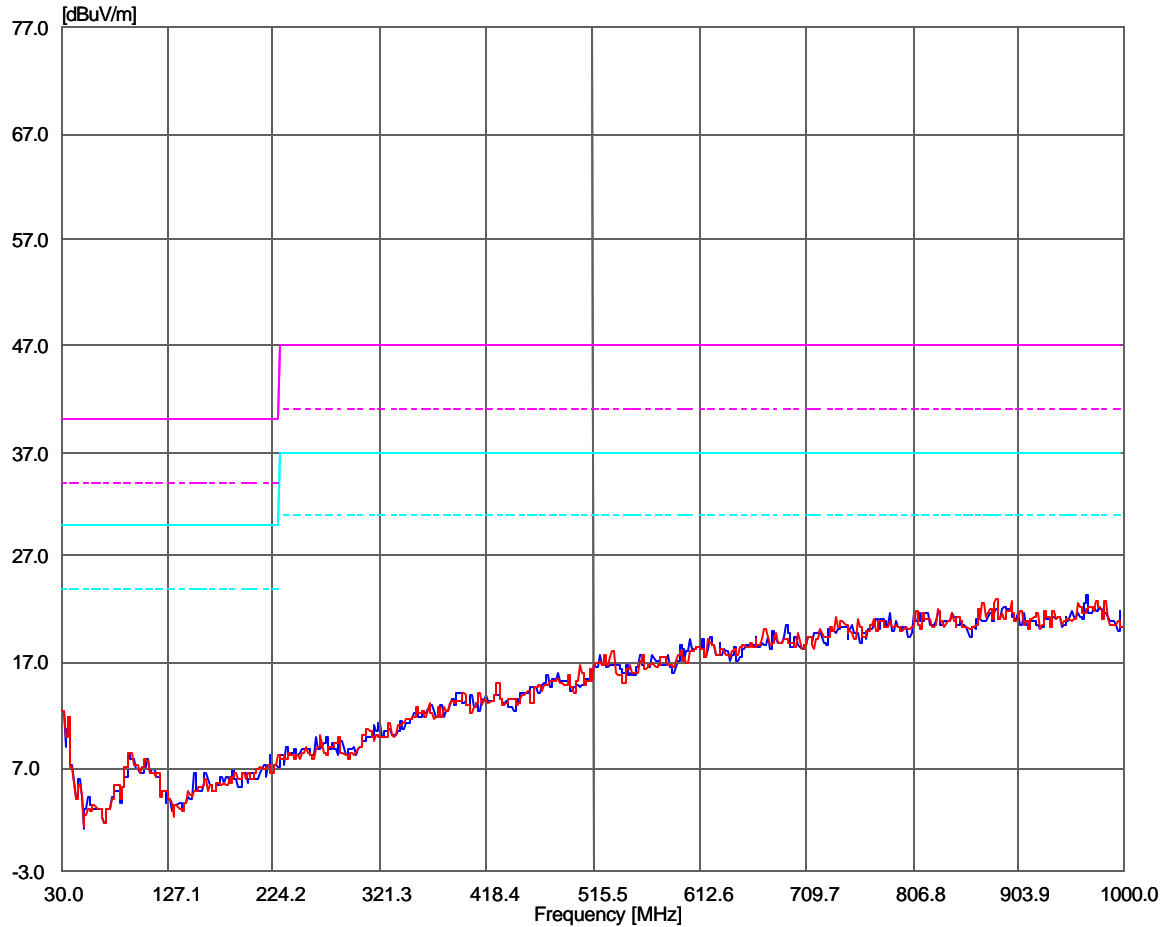
- 1) each configuration tested at each of these conditions: 4 antenna heights, vertical and horizontal orientation, 360 degree rotation, and maximized scan, the process is automated
- 2) the 100 meter CAT-3 and CAT-5 cables are routed on a wooden gantry 7 ft. high by 7 ft. wide. Each cable has two loops around the perimeter of the gantry. The gantry rotates with the equipment under test on the turntable.
- 3) The Faraday Cage is simply a metal box around the PC board, it is omitted in some tests, as noted below
- 4) The magenta lines indicate the class A limit, the light blue lines indicate the class B limit. The dotted lines indicate a 6 dB margin the the limit.



10 meter Anechoic Chamber, maximized scan of 4 different antenna heights, vert/horiz, and full rotation
Nortel Coupled Diode Discovery Prototype in Faraday Cage

100 meter CAT-5, continuous on/off discovery
Chamber/Equipment Noise Floor

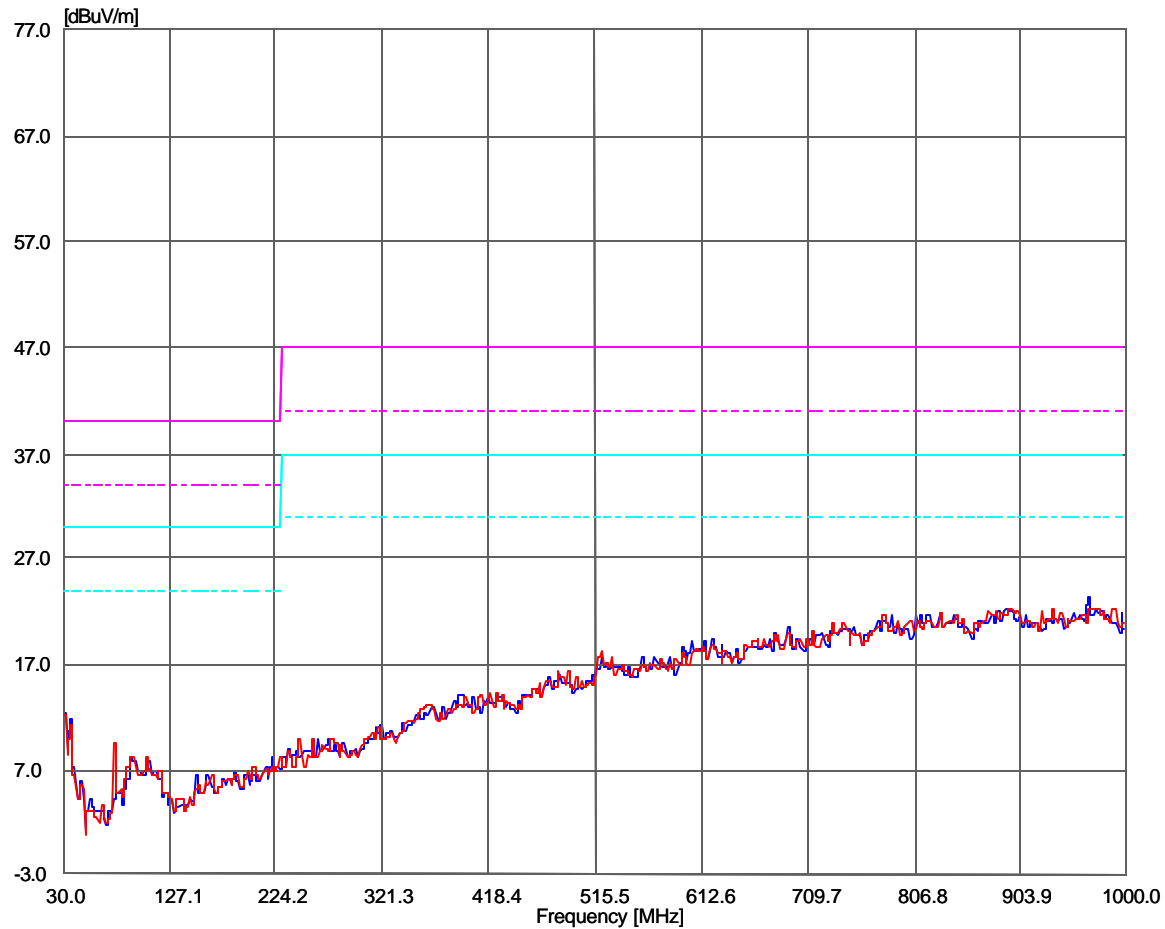
blue trace
red trace



10 meter Anechoic Chamber, maximized scan of 4 different antenna heights, vert/horiz, and full rotation
 Nortel Coupled Diode Discovery Prototype in Faraday Cage

100 meter CAT-5, open load discovery
 Chamber/Equipment Noise Floor

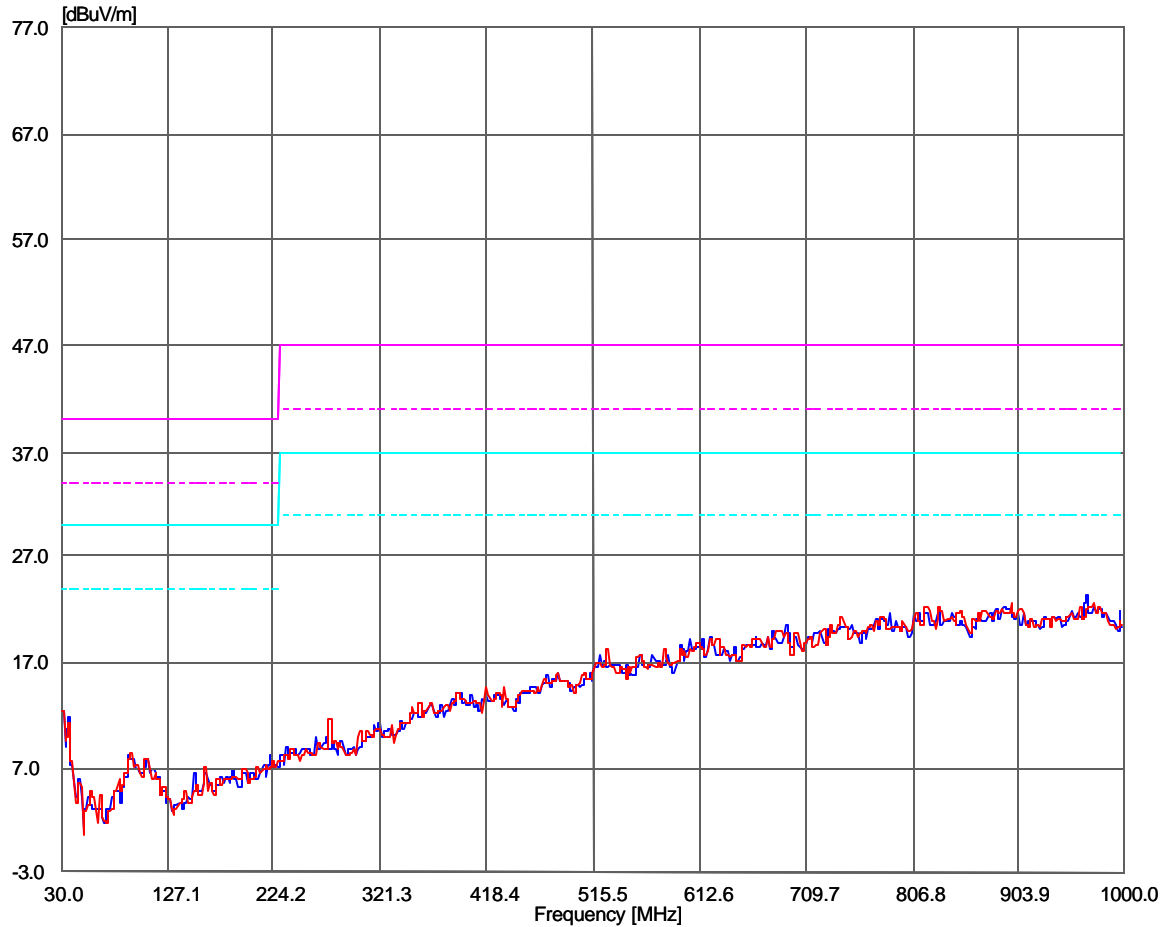
red trace
 blue trace



10 meter Anechoic Chamber, maximized scan of 4 different antenna heights, vert/horiz, and full rotation
 Nortel Coupled Diode Discovery Prototype in Faraday Cage

100 meter CAT-5, shorted load discovery
 Chamber/Equipment Noise Floor

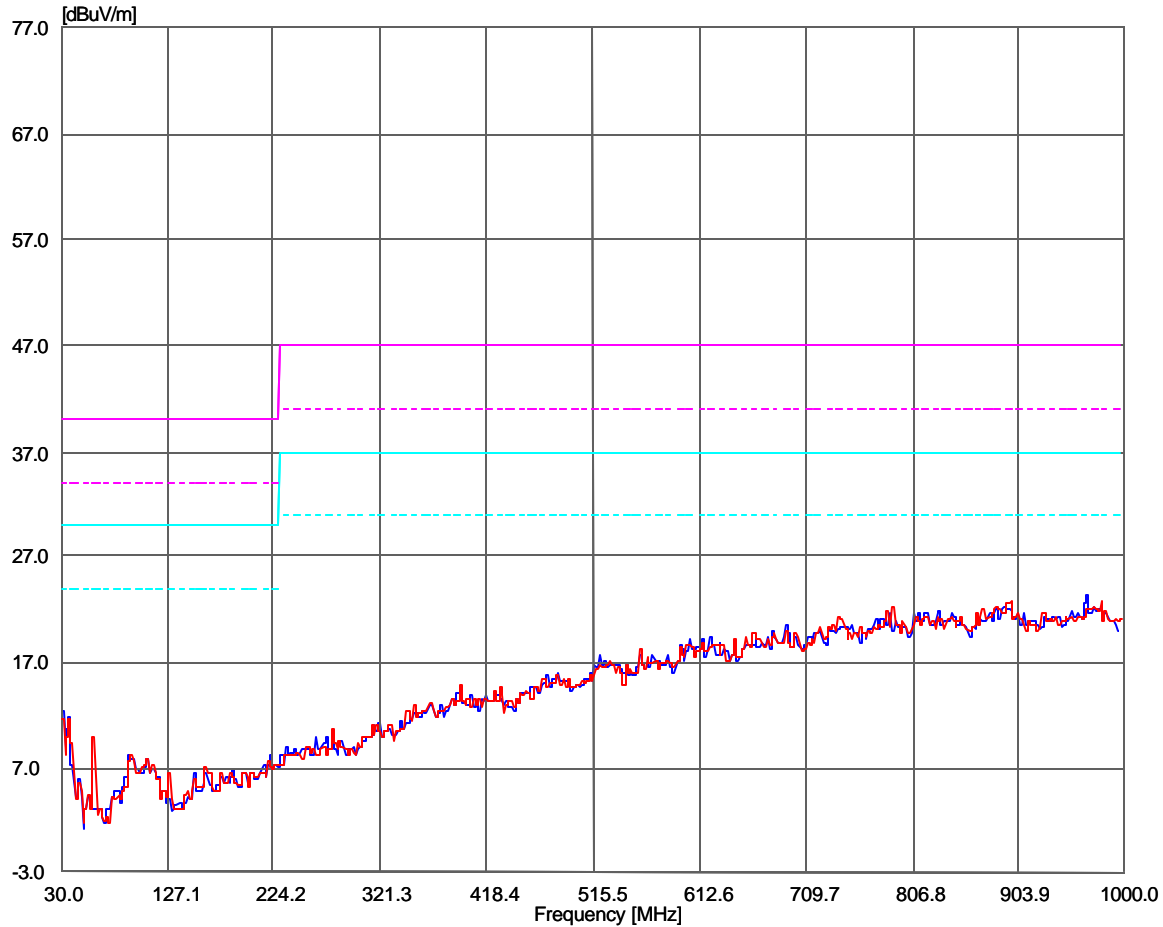
red trace
 blue trace



10 meter Anechoic Chamber, maximized scan of 4 different antenna heights, vert/horiz, and full rotation
 Nortel Coupled Diode Discovery Prototype in Faraday Cage

100 meter CAT-3, continuous on/off discovery
 Chamber/Equipment Noise Floor

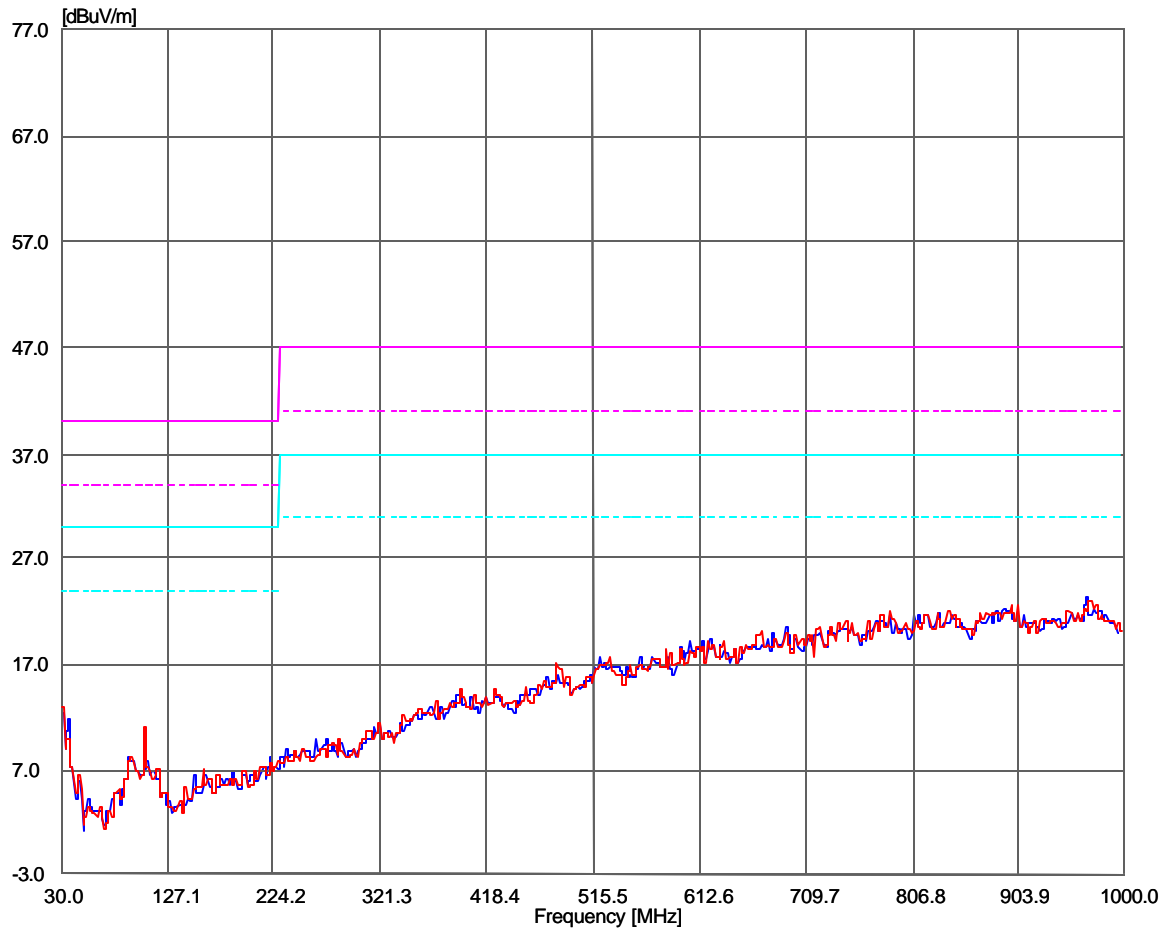
red trace
 blue trace



10 meter Anechoic Chamber, maximized scan of 4 different antenna heights, vert/horiz, and full rotation
 Nortel Coupled Diode Discovery Prototype in Faraday Cage

100 meter CAT-3, open load discovery
 Chamber/Equipment Noise Floor

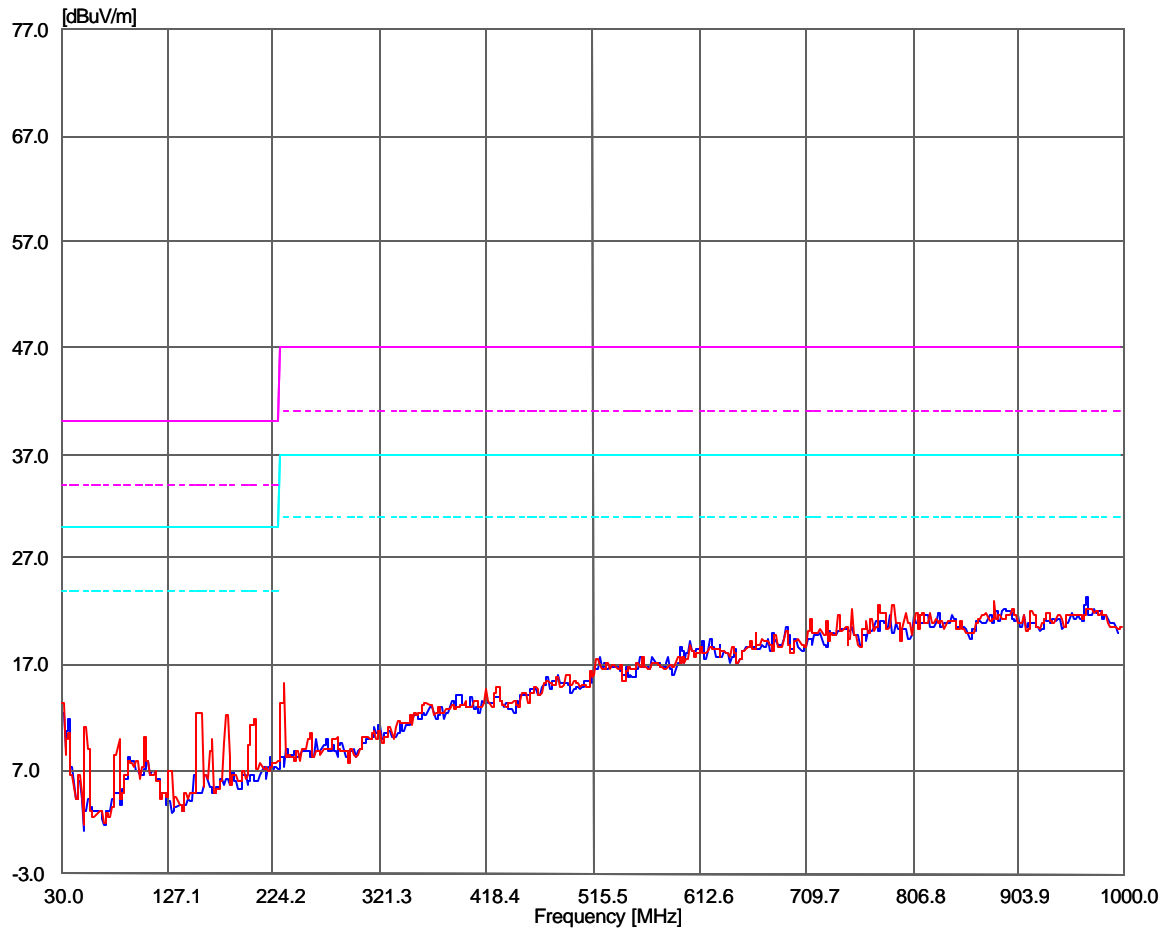
red trace
 blue trace



10 meter Anechoic Chamber, maximized scan of 4 different antenna heights, vert/horiz, and full rotation
 Nortel Coupled Diode Discovery Prototype in Faraday Cage

100 meter CAT-3, shorted load discovery
 Chamber/Equipment Noise Floor

red trace
 blue trace



10 meter Anechoic Chamber, maximized scan of 4 different antenna heights, vert/horiz, and full rotation
 Nortel Coupled Diode Discovery Prototype **bare board in chamber, no shielding or box**

100 meter CAT-3, open load discovery
 Chamber/Equipment Noise Floor

red trace
 blue trace