



SYSTEMS WITH RELIABILITY, LTD.
Broadcast Antenna and Transmission Systems

PATTERN CERTIFICATION

DIRECTIONAL FM ANTENNA

WMEX-FM

August 1, 2001

Station	:	WMEX – FM
Location	:	Farmington, NH
Frequency	:	106.5 MHz
Channel	:	293
Antenna Model	:	FM 3/3 DA
Maximum Antenna Gain	:	
Horizontal	:	2.248 / 3.52 dB
Vertical	:	2.248 / 3.52 dB

ANTENNA DESCRIPTION

A custom designed FM3 antenna was used to produce the required directional pattern. It is a circularly polarized radiating element and is comprised of a three bay-radiating element mounted to a tower leg oriented at 243.5 degrees true north.

DESCRIPTION OF TEST PROCEDURE

The test antenna is consisted of a one-third-model scale antenna and parasitic system. This antenna was mounted to a model tower of the actual structure where it's intended to be mounted. The tower was mounted 20 ft. on a platform. All feed cables are properly grounded during pattern testing. Horizontal and vertical parasitic elements were used to obtain the desired directional pattern.

The source antenna, a vertical/horizontal dipole Cavity Back Resonator antenna configuration was mounted approximately 100 feet from the test antenna. The source's height was adjusted to provide a uniform field at the test antenna location. The CBR antenna was operated in the transmit mode at a frequency of 319.5 MHz. The antenna under test was rotated in a clockwise direction. A gain reference was taken using a dipole tuned to 319.5 MHz. No where does the received signal exceed a maximum to minimum of 15 dB.