



SYSTEMS WITH RELIABILITY, INC.
Broadcast Antennas and Transmission Systems

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PATTERN CERTIFICATION

DIRECTIONAL FM ANTENNA

October 8, 2001

Station	:	WWPJ – FM
Location	:	Trenton, NJ
Frequency	:	89.5 MHz
Channel	:	205
Antenna Model	:	FMEVR/1 DA
Maximum Antenna Gain	:	
Horizontal	:	1.2358 / 0.92 dB
Vertical	:	1.2358 / 0.92 dB

ANTENNA DESCRIPTION

A custom designed FMEV antenna was used to produce the required directional pattern. It is a vertically polarized loop/dipole radiating element with vertical parasitic system. The antenna is comprised of a single bay-radiating element mounted to a tower pointing 316 degrees true north.

DESCRIPTION OF TEST PROCEDURE

The test antenna is consisted of a third-scale dipole antenna and parasitic system. This antenna was mounted to a 12-inch model tower with the use of mounting brackets supplied with the finalized antenna. The tower was 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 268.5 MHz. The antenna under test was rotated in a clockwise direction. A gain reference was taken using a dipole tuned to 268.5 MHz. No where does the received signal exceed a maximum to minimum of 15 dB.