

TSR 137

Crossed-Dipole Antenna for the Weather Satellite Band 136 - 138 MHz



DESCRIPTION:

- ★ The TSR 137 is especially optimized for reception of weather image from orbiting weather satellites like the NOAA and METEOR types operating in the satellite frequency range 136 - 138 MHz.
- ★ These satellites transmit righthand circular polarisation to minimize fading effects.
- ★ The TSR 137 has the following main features:
 - ★ Hemispherical coverage - no satellite tracking necessary.
 - ★ Righthand circular polarisation (RHCP) in vertical direction corresponding to the satellites.
 - ★ Linear, horizontal polarisation in the horizontal plane for best suppression of man-made electrical interference.
 - ★ Reflector, to create a directional characteristic for the suppression of fading caused by multipath propagation due to ground reflections.
 - ★ Optimized reflector-distance of $3/8 \lambda$ for widest possible beamwidth to increase signal strength when the satellite is at or near the horizon.
- ★ The crossed-dipole turnstile antenna with reflector is ideal for the purpose, as it receives righthand circular polarisation when the satellite is directly overhead, and has an omnidirectional, horizontally polarized pattern for signals arriving parallel to the ground.
- ★ The reflector shields the crossed-dipole element from ground reflections which otherwise may cause the signal to disappear into the noise due to cancelling effects. Enhancing the dipole-to-reflector spacing from ideally $1/4 \lambda$ to $3/8 \lambda$ increases the strength of signals received at low angles.
- ★ Consequently, a constant signal throughout the pass with virtually no fading is ensured.

SPECIFICATIONS:

ELECTRICAL	
MODEL	TSR 137
ANTENNA TYPE	Crossed-dipole turnstile antenna with reflector
FREQUENCY	136-138 MHz
IMPEDANCE	Nom. 50 Ω
POLARISATION	Horizontally polarized in horizontal plane. Righthand-circular polarized in vertical direction
BANDWIDTH	16 MHz @ SWR \leq 1.5
SWR	\leq 1.3 @ f. res.
MAX. POWER	100 watt (if used as a transmitting antenna)
MECHANICAL	
CONNECTOR	UHF-female
WIND SURFACE	0.036 m ²
WIND LOAD	55 N @ 160 km/h
TOTAL HEIGHT	Approx. 0.95 m
TIP TO TIP LENGTH	Approx. 1.14 m
WEIGHT	Approx. 1.0 kg
MOUNTING	On 30 - 44 mm dia. mast tube

