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OMNI DIRECTIONAL HF ANTENNAS-FIXED

CST-HFO-0101/015 - 040 (1.5 – 30 MHz)

Conical Monopole of the series CST-HFO-0101/0xx feature excellent wide-band properties due to their great diameter and special design.

It is a vertically polarized, omnidirectional shortwave antenna and therefore mainly suited for groundwave application and for skywave applications with high take-off angles.

Feeding is carried out at the base, which is insulated against ground. A ground net is supplied with the antenna.

TECHNICAL DATA

Electrical	:	Frequency range	CST-HFO-0101/015 1.5 – 30 MHz CST-HFO-0101/020 2.0 – 30 MHz CST-HFO-0101/025 2.5 – 30 MHz CST-HFO-0101/030 3.0 – 30 MHz CST-HFO-0101/040 4.0 – 30 MHz
		Nominal impedance	50 Ω
		VSWR	2.0 : 1
		RF input power	Receive up to 10kW Average.
		Gain	5dBi (@ 5 MHz)
Mechanical	:	RF connectors	N-type, 7/8“ EIA to 1 5/8’’ EIA (depending on receive to RF power)
		Enveriomental	-35C to 60C
		Wind speed	160 km/h (without ice) 120 km/h (1.2 cm radial ice)

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MECHANICAL DATA

Lower Frequency	Mast Height	Ground Screen Diameter	Cage Diameter	Bend Height
1.5	42 m	84 m	16 m	8 m
2.0	33 m	66 m	16 m	8 m
2.5	27 m	54 m	16 m	8 m
3.0	24 m	48 m	16 m	8 m
4.0	18 m	36 m	12 m	5 m

Table 1: Mechanical dimensions (can be adjusted to site conditions)

The conical-monopole antenna is supported by a hot-galvanized (80 micron) lattice mast steel (comply with EN 10025, 1090, 14732/9606) with insulated base point (C110). The radiator wires are made of Copper-Bronze or Aluminum Clad-Steel Wire (Alumoweld), depending on input power. Tension ropes are Galvanized/Stainless Steel. The antenna is supplied with a star shaped ground network of radials. Solar Obstruction Lights (ICAO) are also provided.

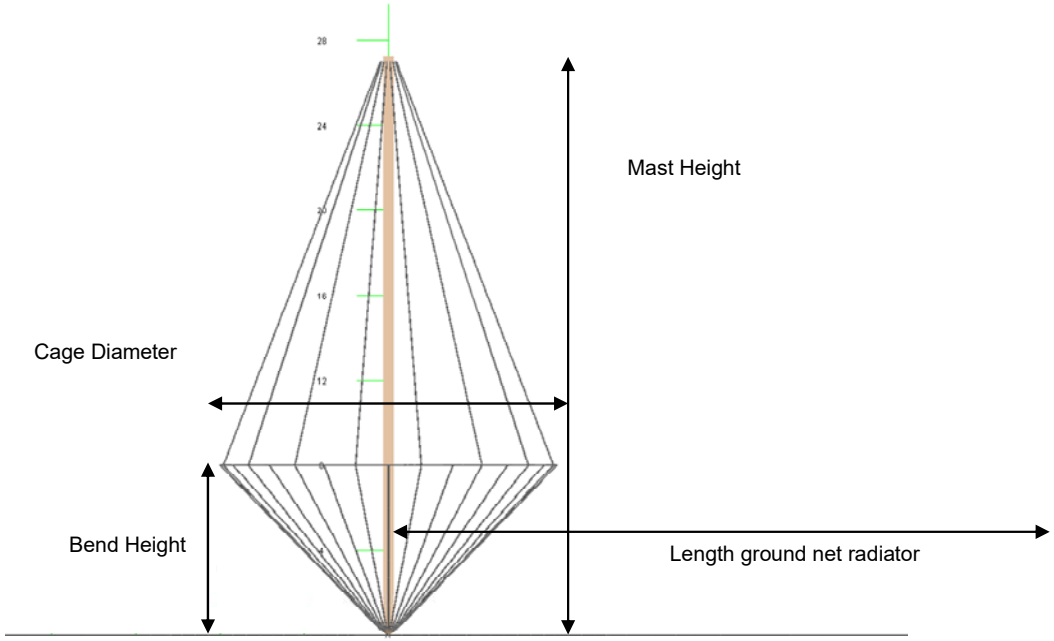

Figure 1: Main Dimensions

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ELECTRICAL DATA

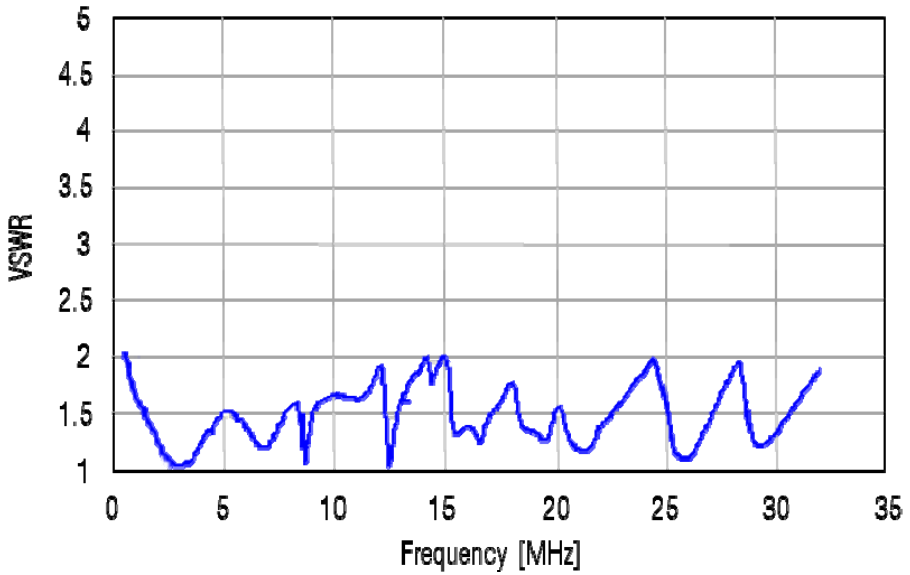

Figure 2: Therotical VSWR values CST-HFO-0101/025

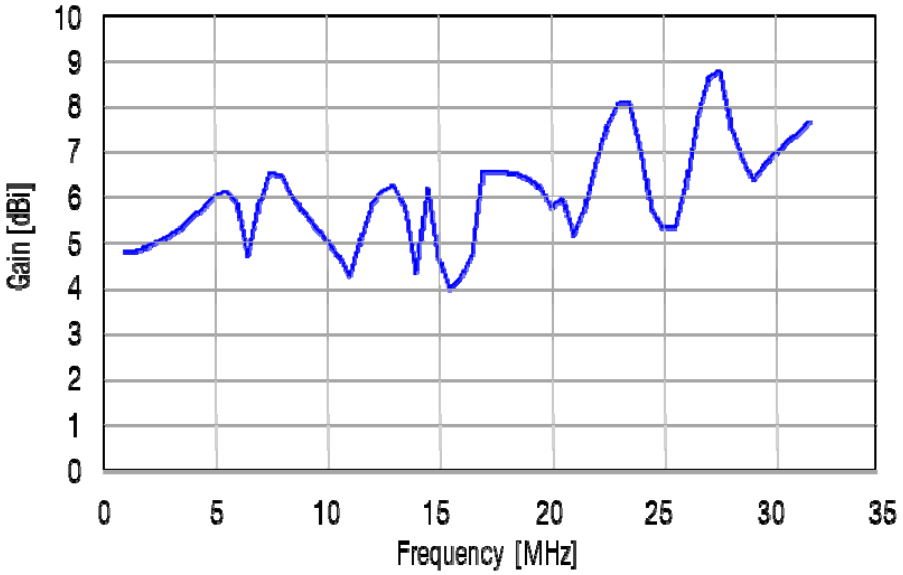

Figure3: Gain over ideally conducting ground CST-HFO-0101/025

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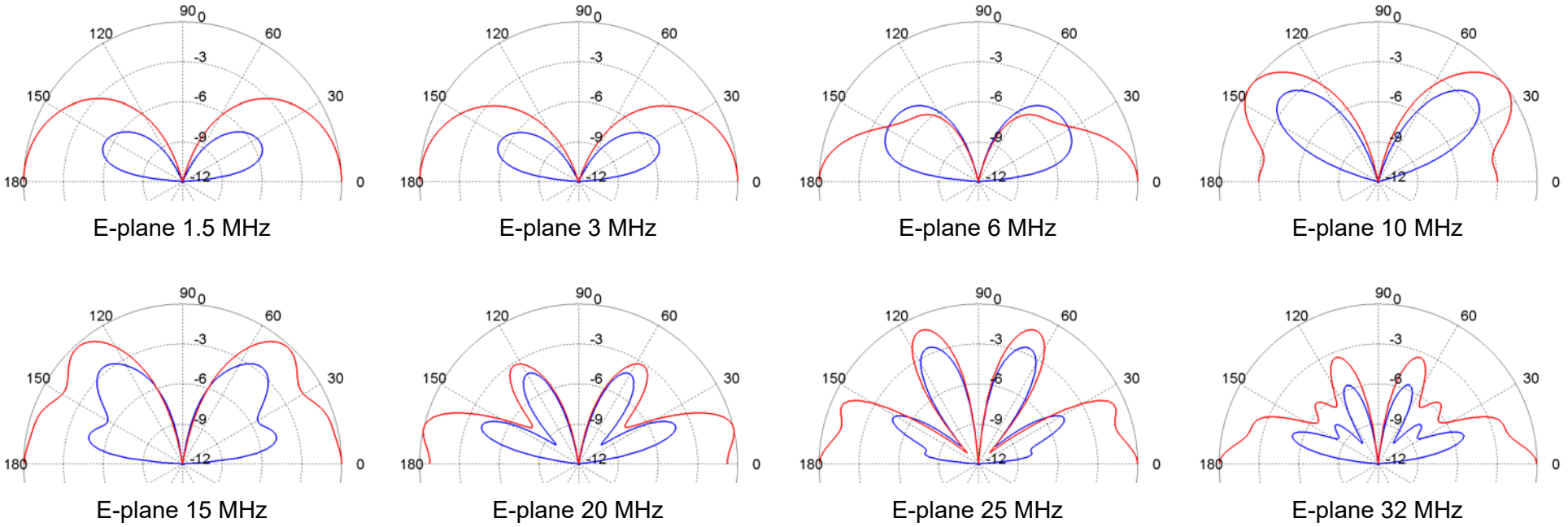
Radiation patterns:



E-plane 1.5 MHz | E-plane 3 MHz | E-plane 6 MHz | E-plane 10 MHz

E-plane 15 MHz | E-plane 20 MHz | E-plane 25 MHz | E-plane 32 MHz

Figure 4: E-plane radiation patterns CST-HFO-0101/025 over ideally conducting ground (red) and real ground (blue)