



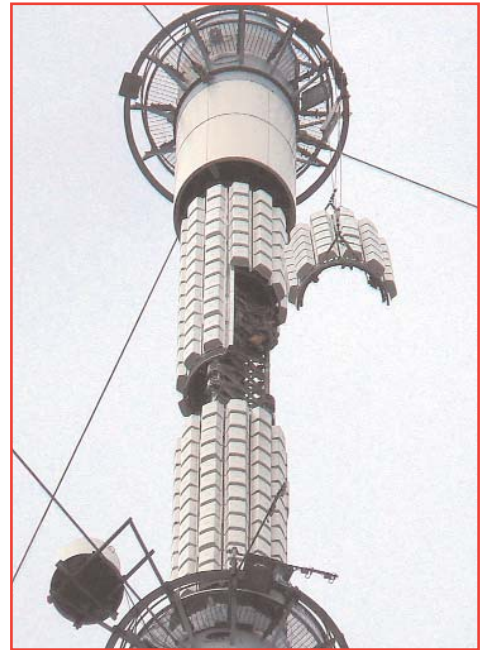
Band IV/V (UHF) TV Panel Arrays

Product Description

The PHP-12S broadband panel is designed as a building block for integration into complex antenna arrays . It is specifically designed to operate on large cross section structures as an alternative to cantilever design or to utilise available aperture.

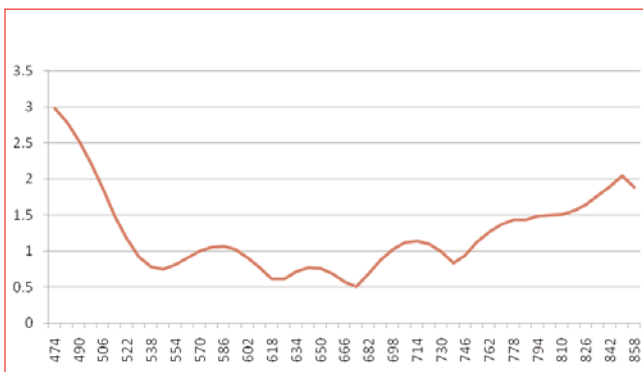
Features

- Fully engineered for Digital TV
- Corrosion resistant aluminium construction with fibreglass radome
- Horizontal polarization
- Low wind loading
- Cyclone rated
- Unprecedented pattern circularity
- Full band operation
- High power rating
- Affords greater array access for maintenance and staff safety.
- Array design allows a variety of horizontal radiation patterns with or without vertical beam tilt and null fill, contact RFS for details
- Temperature range -40 to +60° C available
- Can be mounted on existing towers minimising significant capital investment in tower strengthening.

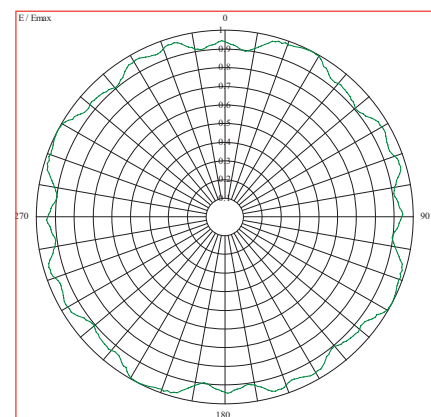


Antenna Specifications

Model Number	PHP-12S
Frequency Band, MHz	470 – 860
Polarisation	Horizontal
Number of levels/bays	Typically 2-12 levels
Gain (Single level omni), dBd	1.5 to 2
Azimuth Pattern	Omnidirectional
Circularity	+/- 2dB (500-860)
Vertical Beamwidth, deg	Dependent upon number of levels
Electrical Downtilt, deg	Typically 0.5° – 1.0°
Nullfill	As required by customer, typically 15% E/E _{max} at first null
VSWR	< 1.1 across the operating band (with < 1.05 possible on individual channels)
Input Power, max , kW	22 av. per level
Impedance, ohms	50
Pressurization	Antenna inputs and feed system pressurised
Connector: Type + Location	Array typically fed with dual 6 1/8 EIA Line
Dimension (D) max, mm	2560 Dia External
Structure styles and sizes, mm /ft	1524 / 5' FW Triangular 1220 / 4' FW Square
Survival Wind Speed, mph / km/h / m/s	150 / 240 / 66.7
Rated Wind Speed, mph / km/h / m/s	100 / 160 / 44.4
Wind load area, (max) EIA-222-F, m ²	2.9m ² per level
Radiating Element Material	Aluminium Alloy (5005)
Radome Material	Fibreglass
Radome Color	White, Orange
Mounting Method	Sidemount
Mounting Hardware Material	Galvanized Steel



Pattern Ripple (+/-) across band



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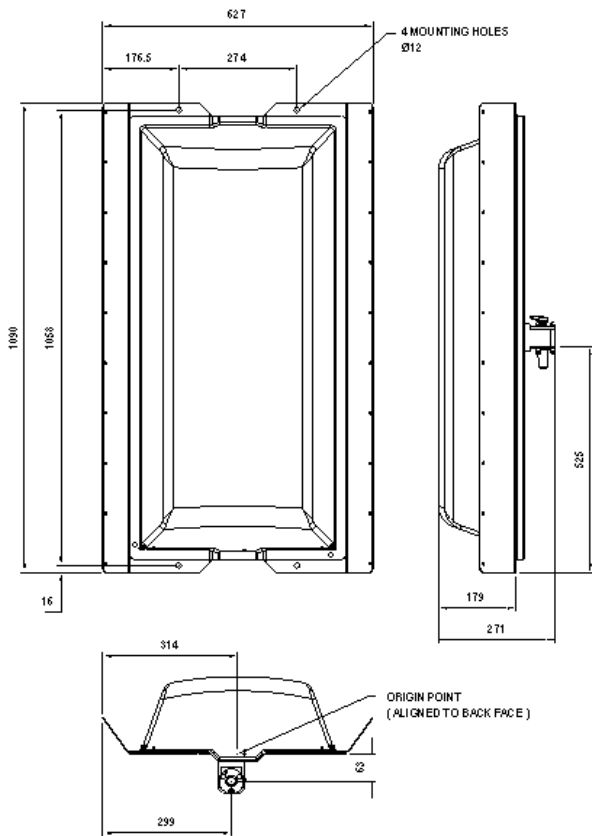
Antenna Array Specifications

Number of bays	1	2	3	4	5	6	8	10	12	14	16
Panels per bay	12	12	12	12	12	12	12	12	12	12	12
Vertical Spacing between Bays (m)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
HRP Directivity (dBd)	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
VRP Directivity (dBd)	4.59	7.7	9.15	10.35	11.23	12.05	13.33	14.3	15.09	15.75	16.33
Gain (dbd)	5.47	8.58	10.03	11.23	12.11	12.93	14.21	15.18	15.97	16.63	17.21
Gain (times)	3.52	7.21	10.07	13.27	16.26	19.63	26.36	32.96	39.54	46.03	52.60
Weight (kg)	300	600	900	1250	1600	1900	2500	3100	4400	5000	5600
Weight (lbs)	662	1323	1985	2756	3528	4190	5513	6836	9702	11025	12348
Antenna Aperture L (m)	1.2	3.5	4.6	5.8	6.9	8.1	10.4	12.7	15.0	17.3	19.6
Antenna Aperture L (ft)	3.8	11.3	15.1	18.9	22.6	26.4	34.0	41.5	49.0	56.6	64.1
Effective area (m2)	2.9	5.1	8.7	11.6	14.7	17.3	23.3	29.0	34.7	40.6	46.7
Effective area (ft2)	31	55	94	125	158	187	252	313	374	438	504
Windload @ 50m/s (kN)	4.4	7.7	13.0	17.4	22.0	26.0	35.0	43.5	52.0	60.9	70.0
Windload @ 50m/s (lbs)	979	1733	2925	3915	4950	5850	7875	9788	11700	13703	15750

Note 1: Load calculations do not include tower/mast

Note 2: Interface steelwork antenna system to tower is not included in load calculations.

Antenna Panel Dimensions



Nomenclature

Equal Split



Number of faces: L=12

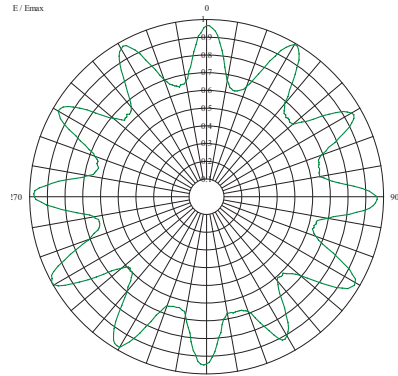
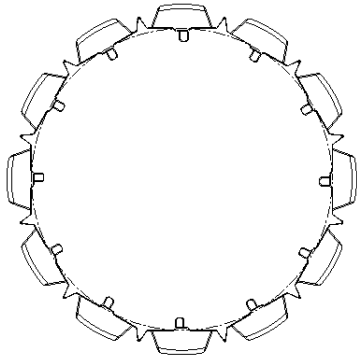
Total number of Panels: 12, 24, 36, 48 etc

PHP: Panel Horizontally Polarised

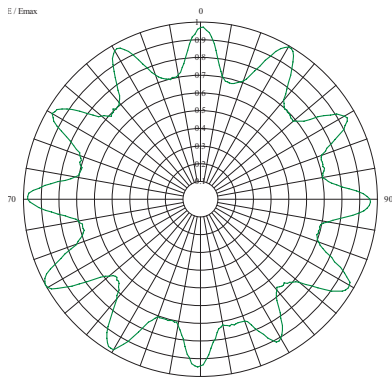
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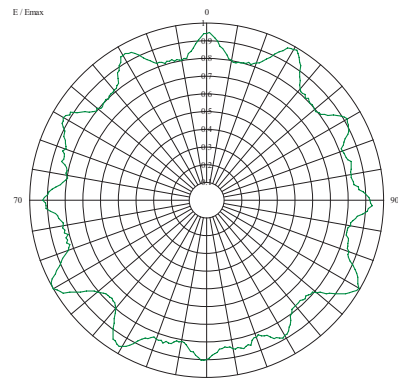
Horizontal patterns



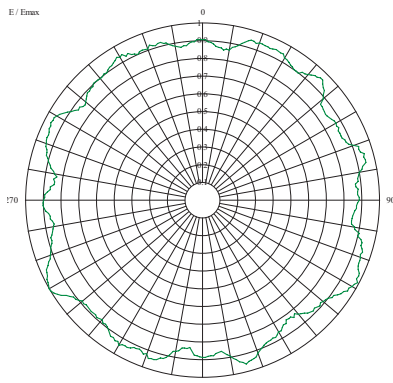
HRP PHP-12S 498MHz 2.14dBd



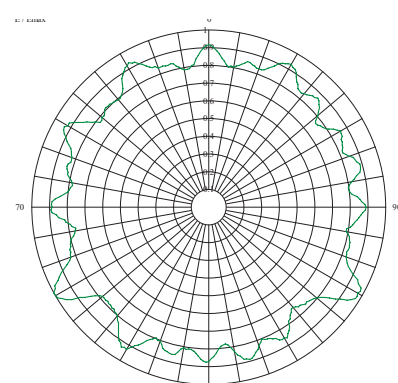
HRP PHP-12S 506MHz 1.85dBd



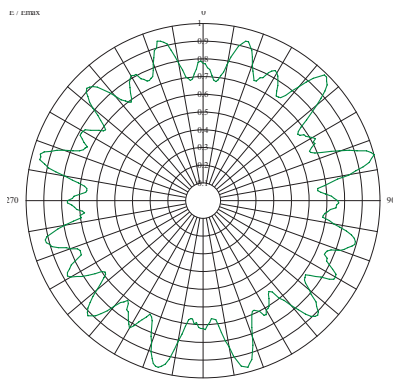
HRP PHP-12S 554MHz 1.31dBd



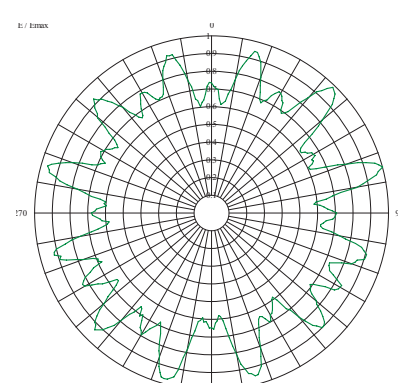
HRP PHP-12S 666MHz 0.88dBd



HRP PHP-12S 706MHz 1.47dBd



HRP PHP-12S 802MHz 1.99dBd

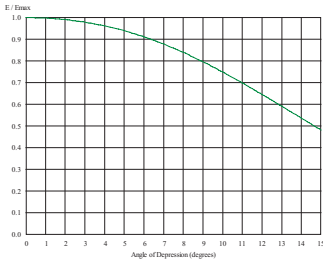


HRP PHP-12S 826MHz 2.29dBd

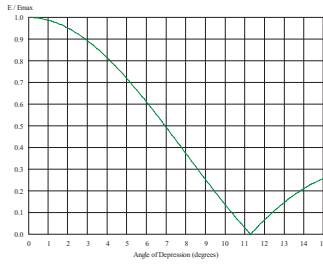
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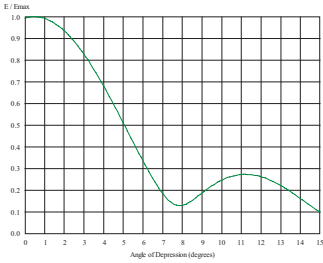
Vertical patterns



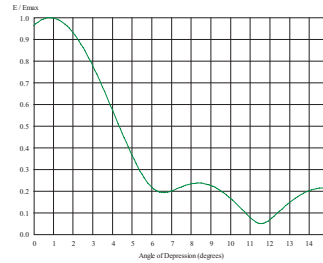
VRP PHP-1 666MHz 4.59dBd



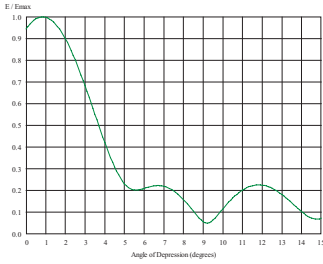
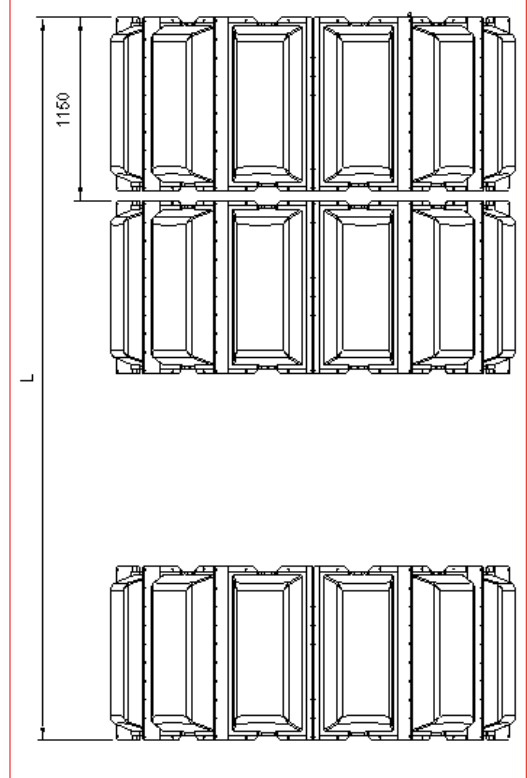
VRP PHP-2 666MHz 7.70dBd



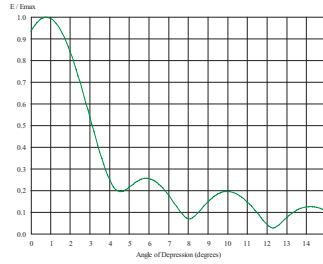
VRP PHP-3 666MHz 9.15dBd



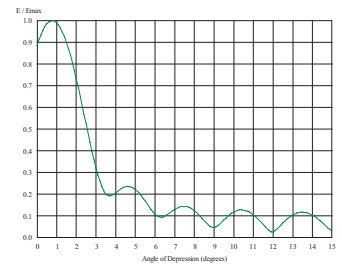
VRP PHP-4 666MHz 10.35dBd



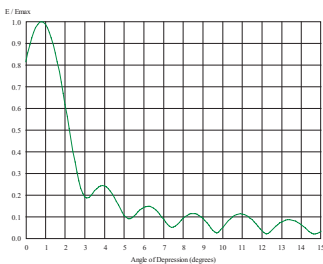
VRP PHP-5 666MHz 11.23dBd



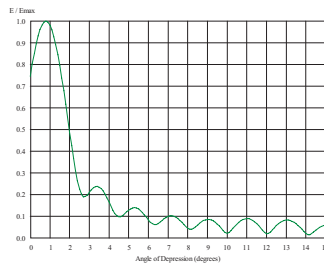
VRP PHP-6 666MHz 12.05dBd



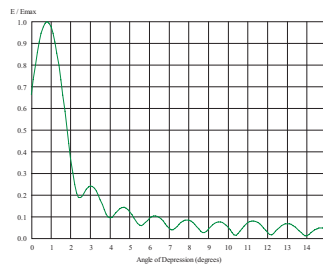
VRP PHP-8 666MHz 13.33dBd



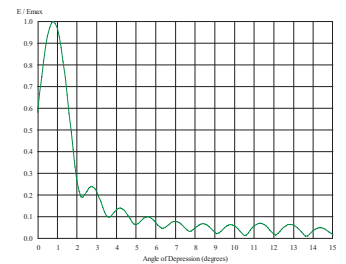
VRP PHP-10 666MHz 14.3dBd



VRP PHP-12 666MHz 15.09dBd



VRP PHP-14 666MHz 15.75dBd



VRP PHP-16 666MHz 16.33dBd

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