

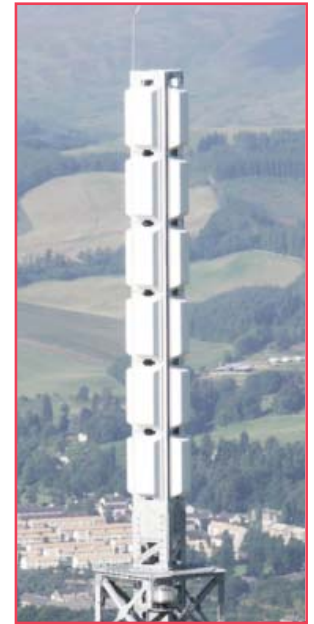
## Band IV/V (UHF) TV Panel Arrays

### Product Description

The PSP broadband panel is designed as a building block for integration into complex antenna arrays or it can be used individually for simple antenna systems. The PSP panel covers the UHF band without field adjustment.

### Features

- Fully re-engineered for Digital TV
- Corrosion resistant aluminium construction with fibreglass radome (optional stainless steel)
- Slant polarization
- Low wind loading
- Cyclone rated
- Full band operation
- High power rating
- 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



### Antenna Specifications

Product Type	Band IV/V (UHF) TV Panel Arrays
Frequency Range, MHz	470 - 860
Polarization	Slant: 80% horizontal, 20% vertical
Number of Channels	Multichannel
Nominal Gain (Mid-band), dBd	11 - 13
Half Power Beamwidth Azimuth, degrees	60
Return Loss, dB	25
Input Connector	7-16 DIN; 7/8" EIA Flange
Power Rating, kW	2.5 Note # 1
Impedance, Ohms	50 unbalanced
Weight, kg (lb)	12 (26)
Mounting (Standard), mm (in)	4 x 12mm (1/2) bolts
Effective Area Front (full antenna), sq m (sq ft)	0.45 (4.84)
Effective Area Side (full antenna), sq m (sq ft)	0.35 (3.76)
Design Wind Speed ( max), km/h (mph)	240 (150)
Colour	White radome standard, other upon request
Pressurization - Operational, kPa (psi)	10 - 25 (1.4 - 3.6) 7/8" EIA Version
Pressurization - Test, kPa (psi)	100 (15) 7/8" EIA Version
Material - Radome	Fibreglass
Material - Insulators	PTFE
Material - Radiators	Corrosion resistant aluminium (optional Stainless Steel)
Material - Reflecting Screen	Corrosion resistant aluminium

Note 1: Power rating is limited by input connector - 7-16 DIN version rated for 1.75kW

Note 2: 80/20 split must be accounted for in ERP calculations



Band IV/V (UHF) TV Panel Arrays

Antenna Array Specifications

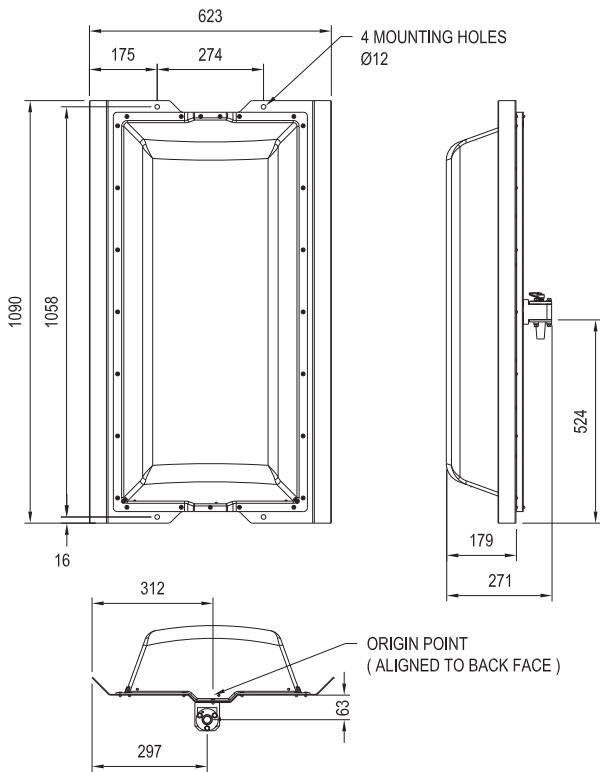
Number of bays	1				2				3				4			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Panels per bay	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Vertical Spacing between Bays (m)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
HRP Directivity Hpol (dB)	7.89	4.73	3.06	1.56	7.89	4.73	3.06	1.56	7.89	4.73	3.06	1.56	7.89	4.73	3.06	1.56
VRP Directivity (dBd)	4.39	4.39	4.39	4.39	7.7	7.7	7.7	7.7	9.06	9.06	9.06	9.06	10.08	10.08	10.08	10.08
Gain Hpol component(dBd)	12.28	9.12	7.45	5.95	15.59	12.43	10.76	9.26	16.95	13.79	12.12	10.62	17.97	14.81	13.14	11.64
Gain (times)	16.90	8.17	5.56	3.94	36.22	17.50	11.91	8.43	49.55	23.93	16.29	11.53	62.66	30.27	20.61	14.59
Weight (kg)	13	54	71	88	26	108	142	176	111	162	213	264	148	216	284	352
Weight (lbs)	29	119	157	194	57	238	313	388	245	357	470	582	326	476	626	776
Antenna Aperture L (m)	1.2	1.2	1.2	1.2	2.3	2.3	2.3	2.3	3.5	3.5	3.5	3.5	4.6	4.6	4.6	4.6
Antenna Aperture L (ft)	3.8	3.8	3.8	3.8	7.5	7.5	7.5	7.5	11.3	11.3	11.3	11.3	15.1	15.1	15.1	15.1
Effective area (m2)	0.9	1.0	1.3	1.3	1.7	2.3	4.7	4.7	2.6	3.5	7.0	7.0	3.5	4.1	8.7	8.7
Effective area (ft2)	9.4	10.8	14.4	14.4	18.7	25.2	50.4	50.4	28.1	37.8	75.6	75.6	37.4	43.9	93.6	93.6
Windload @ 50m/s (kN)	1.3	1.5	2.0	2.0	2.6	3.5	7.0	7.0	3.9	5.3	10.5	10.5	5.2	6.1	13.0	13.0
Windload @ 50m/s (lbs)	292	337	450	450	585	787	1574	1574	877	1180	2360	2360	1169	1371	2923	2923

Number of bays	6				8				12				16			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Panels per bay	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
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	1.15	1.15	1.15	1.15	1.15
HRP Directivity Hpol (dB)	7.89	4.73	3.06	1.56	7.89	4.73	3.06	1.56	7.89	4.73	3.06	1.56	7.89	4.73	3.06	1.56
VRP Directivity (dBd)	11.8	11.8	11.8	11.8	13.04	13.04	13.04	13.04	14.79	14.79	14.79	14.79	16.04	16.04	16.04	16.04
Gain Hpol component(dBd)	19.69	16.53	14.86	13.36	20.93	17.77	16.10	14.60	22.68	19.52	17.85	16.35	23.93	20.77	19.10	17.60
Gain (times)	93.11	44.98	30.62	21.68	123.88	59.84	40.74	28.84	185.35	89.54	60.95	43.15	247.17	119.40	81.28	57.54
Weight (kg)	222	324	426	528	296	432	568	704	444	648	852	1056	592	864	1136	1408
Weight (lbs)	490	714	939	1164	653	953	1252	1552	979	1429	1879	2328	1305	1905	2505	3105
Antenna Aperture L (m)	6.9	6.9	6.9	6.9	9.2	9.2	9.2	9.2	13.8	13.8	13.8	13.8	18.4	18.4	18.4	18.4
Antenna Aperture L (ft)	22.6	22.6	22.6	22.6	30.2	30.2	30.2	30.2	45.3	45.3	45.3	45.3	60.4	60.4	60.4	60.4
Effective area (m2)	5.2	7.0	14.0	14.0	6.9	8.2	16.7	16.7	10.7	12.7	24.0	24.0	14.0	16.7	32.7	32.7
Effective area (ft2)	56.2	75.6	151.2	151.2	74.9	88.6	180.0	180.0	115.2	136.8	259.2	259.2	151.2	180.0	352.8	352.8
Windload @ 50m/s (kN)	7.8	10.5	21.0	21.0	10.4	12.3	25.0	25.0	16.0	19.0	36.0	36.0	21.0	25.0	49.0	49.0
Windload @ 50m/s (lbs)	1754	2360	4721	4721	2338	2765	5620	5620	3597	4271	8093	8093	4721	5620	11016	11016

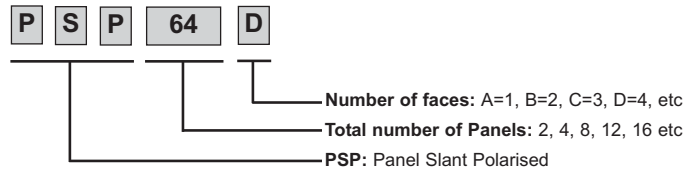
Note 1: For antenna systems with 1 or 2 panels per bay, load calculations include a mounting pipe/pole 60-90mm OD.  
 Note 2: For antenna systems with 1 or 2 levels, load calculations include a mounting pipe/pole 60-90mm OD  
 Note 3: For antenna systems with 3 or 4 panels per bay, and 4 to 16 levels/bays, load calculations include a 640 x 640mm square spine/column.  
 Note 4: Interface steelwork antenna system to tower is not included in load calculations.  
 Note 5: Weights do not include columns or mounting pole. Add 230kg (507lb) per level / bay for 640 x 640 square spine/column.  
 Note 6: Gains shown are for single polarisation only. 80/20 split must be accounted for in ERP calculations (subtract 1dB for H-Pol and 7dB for V-Pol.)

Antenna Panel Dimensionss

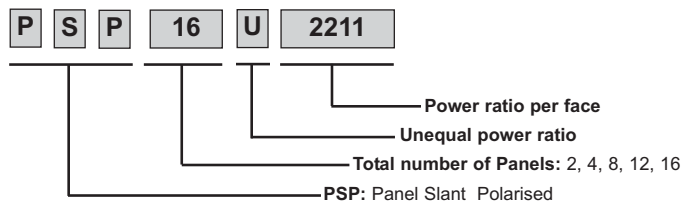


Nomenclature

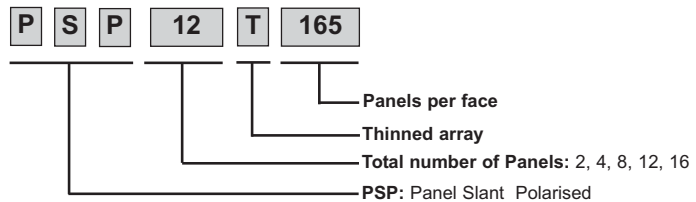
Equal Split



Unequal Split



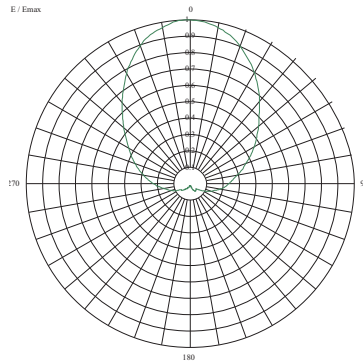
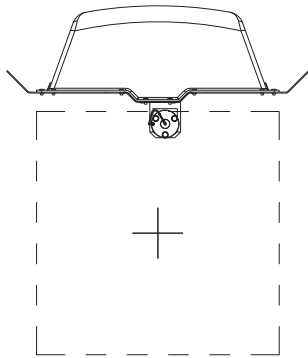
Thinned array



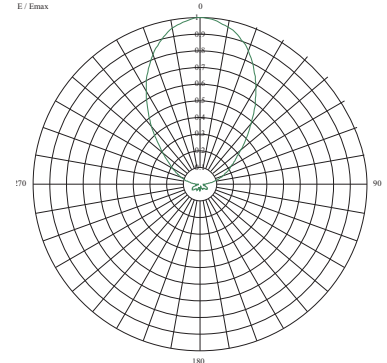
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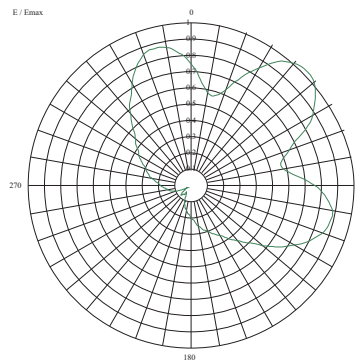
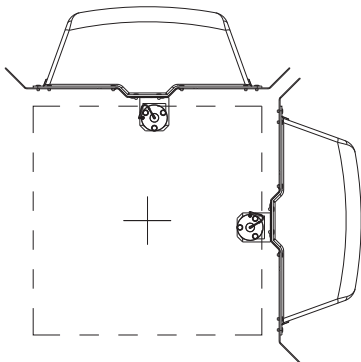
Horizontal patterns



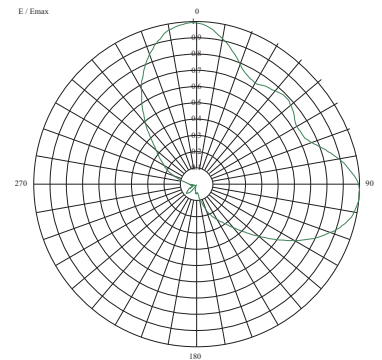
**HRP VPOL PSP-A 666MHz 6.45dBd**



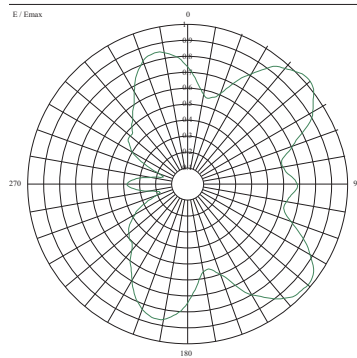
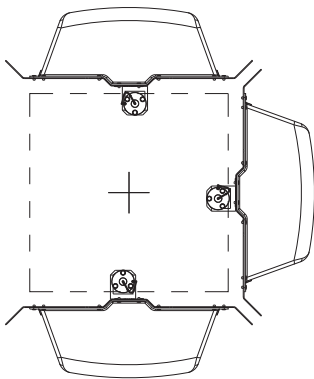
**HRP HPOL PSP-A 666MHz 7.89dBd**



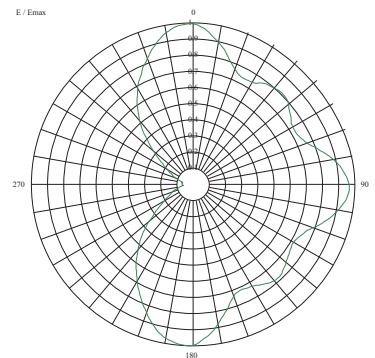
**HRP VPOL PSP-B 666MHz 4.84dBd**



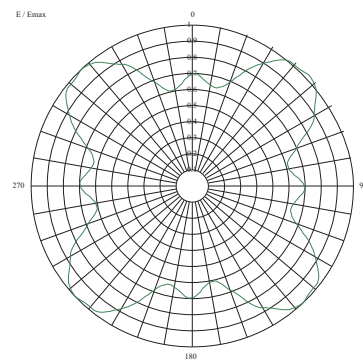
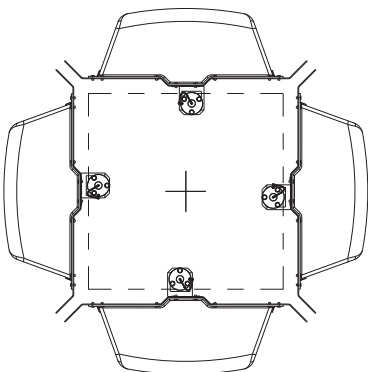
**HRP HPOL PSP-B 666MHz 4.73dBd**



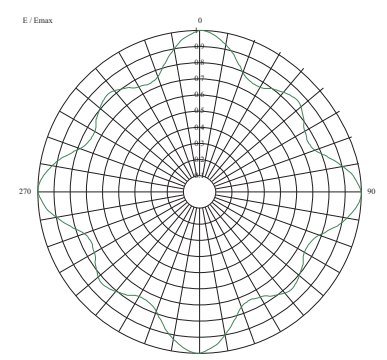
**HRP VPOL PSP-C 666MHz 3.39dBd**



**HRP HPOL PSP-C 666MHz 3.06dBd**



**HRP VPOL PSP-D 666MHz 2.16dBd**

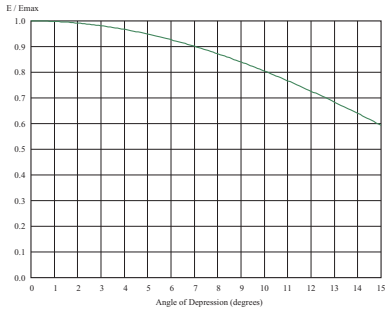


**HRP HPOL PSP-D 666MHz 1.56dBd**

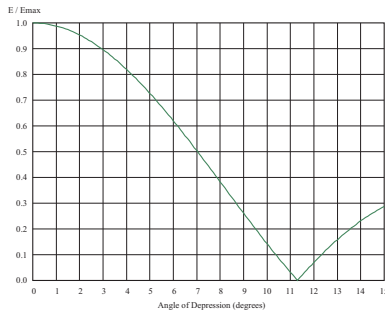
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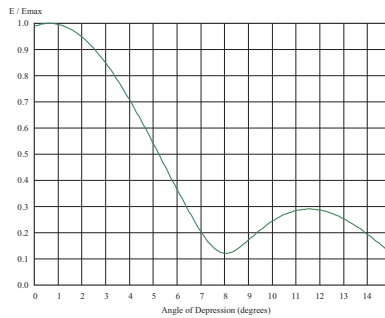
Vertical patterns



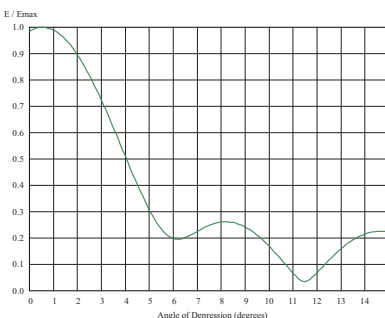
**VRP PSP-1 666MHz 4.39dBd**



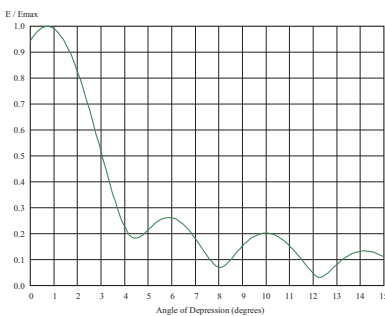
**VRP PSP-2 666MHz 7.70dBd**



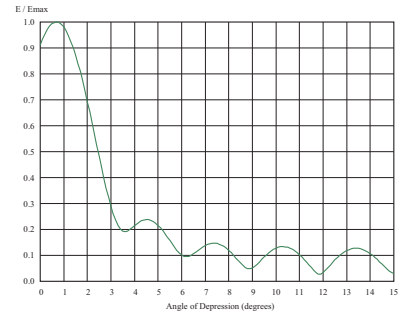
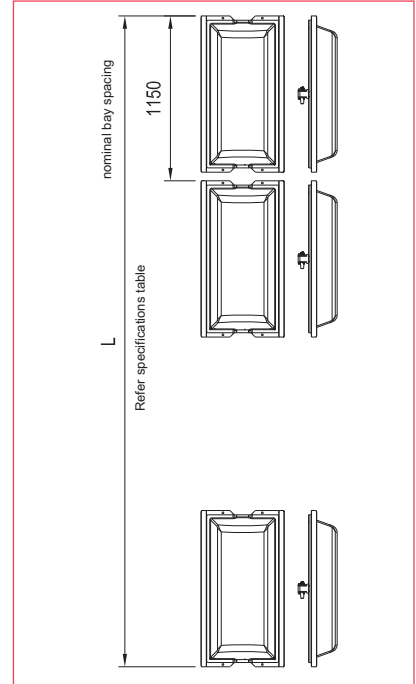
**VRP PSP-3 666MHz 9.06 dBd**



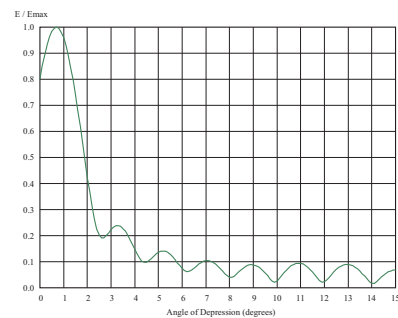
**VRP PSP-4 666MHz 10.08dBd**



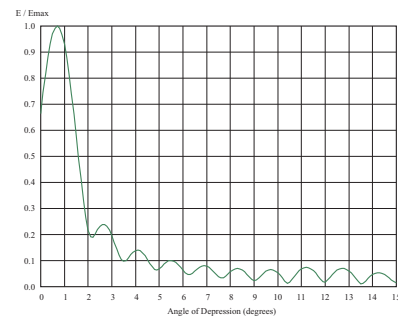
**VRP PSP-6 666MHz 11.8dBd**



**VRP PSP-8 666MHz 13.04dBd**



**VRP PSP-12 666MHz 14.79dBd**



**VRP PSP-16 666MHz 16.04dBd**

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