

Section 2

BROADCAST ANTENNAS

Updated 16 February 2011

TV6-5282 Series UHF TV Dipole 4-Stack Array

Frequency
520 – 820 MHz

Bandwidth
120 MHz minimum



Constructed entirely from stainless steel, these broadband UHF TV 4-stack dipole arrays are designed for wide band vertically polarised TV transmissions where a high gain is required.

Key features are :

- The 120 MHz minimum bandwidth is ideal for multiple UHF TV station transmissions and antenna sharing,
- 7.5 dBd gain,
- Neat design with an internal power divider included,
- Factory tuned and spaced ready to mount,
- Stainless steel construction ensures a long service life, and
- Minimal wind loading.

The standard range consists of 3 fixed frequency models **TV6-5282-A**, **TV6-5282-B** and **TV6-5282-C** each factory tuned to cover a designated bandwidth within the UHF TV frequency range 520 to 820 MHz.

Alternatively, clients can specify any 120 MHz bandwidth they require. Return loss will be optimised to better than -20 dB across the chosen UHF TV transmit frequency range. For a custom bandwidth dipole array, the order code is **TV6-5282**.

An N-Female connector rated for 200 watts input power is located inside the base of the mount tube. For higher 500 watts input power, add the suffix “-MP” to the order code.

To achieve even higher transmit power and gain, these dipole arrays can be mounted in tandem using another power divider.

Any of these arrays can be fitted with the **TV6-RS** stainless steel rear reflector screen to achieve a restricted cardioid shaped radiation pattern at the rear with gain increased to 10.5 dBd. See the following page for details.



SPECIFICATIONS	TV6-5282-A	TV6-5282-B	TV6-5282-C	TV6-5282
Bandwidth within the UHF TV frequency range 520 to 820 MHz	520 – 640 MHz	590 – 720 MHz	680 – 820 MHz	Specify any 120 MHz
Construction	All stainless steel with a concealed power divider			
Tuning	Factory			
Return Loss, VSWR	Better than -20 dB, < 1.2:1 across the specified frequency range			
Dipoles In Array	4			
Nominal Gain	7.5 dBd			
Front-To-Back Ratio	11 dBd			
Polarisation	Vertical			
Maximum Power	250 Watts For 500 watts input power, add the suffix “-MP” to the order code			
Impedance	50 Ohms			
DC Grounding	Yes			
E-Plane Beamwidth	16°			
Connector	An N-Female connector is located inside the base of the mount tube			
Length	2 metres			
Weight	8 kg			
Projected Area	0.123 m ²			
Wind Load at 160 kph	15 kg, 0.146 kN			
Mounting Clamps (Not supplied)	2 x UAM180L heavy duty galvanised steel parallel clamps are recommended. Suit round mast between 40 and 75 mm diameter.			

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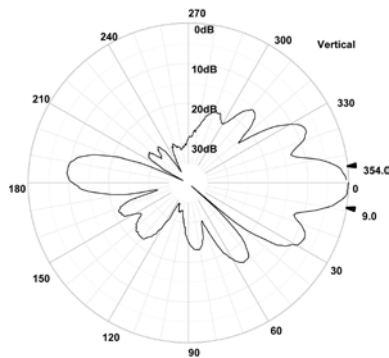
Frequency
520 – 820 MHz

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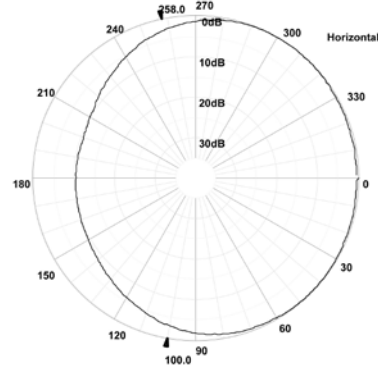


Sample Radiation Patterns

**TV6-5282-C
E-Plane at 690 MHz**



**TV6-5282-C
H-Plane at 690 MHz**



TV6-RS Rear Reflector Screen

The **TV6-RS** stainless steel rear reflector screen can be fitted to any of our TV6-5282 series dipole stack arrays.

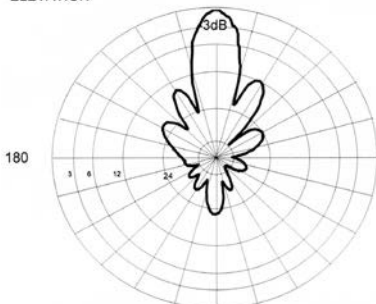
Fitting this screen will achieve a cardioid shaped restricted radiation pattern at the rear together with an increase in nominal forward gain to 10.5 dBd. The dipole stack array Front-to-Back ratio is improved to better than -24 dB to meet the Australian Communications and Media Authority standard.

Clamps are supplied to mount the screen to the TV6-5282 dipole stack array. The antenna tune will not be affected when this rear screen is fitted.

SPECIFICATIONS	TV6-RS
Rear Screen Construction	All stainless steel grid
Stack Array Tuning	Not affected
Nominal Forward Gain	10.5 dBd
Front-To-Back Ratio	Better than -24 dBd
E-Plane Beamwidth	16°
Screen Dimensions	1.316 metres high x 0.329 metres wide
Weight	11 kg, array and screen
Projected Area	0.250 m ² , array and screen
Wind Load at 160 kph	30 kg, 0.300 kN, array and screen
Mounting	Clamps are supplied to mount the rear screen to the dipole stack array

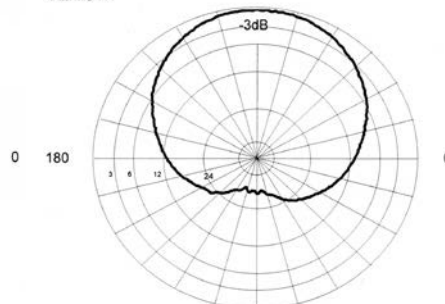


ELEVATION



ZCG SCALAR
TV6-RS sample E-Plane 16° beamwidth

AZIMUTH



ZCG SCALAR
TV6-RS sample H-Plane, restricted at rear