

GPS TANDEM PATCH ANTIJAM ANTENNA (TPAA)

Compact, low-profile, antijam GPS antenna system

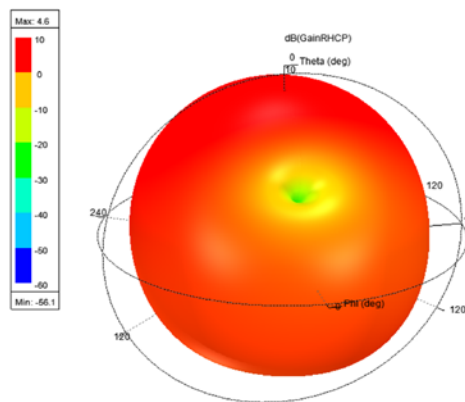
In contested environments, you need more than standard GPS — you need guaranteed positioning. The TPAA Tandem Patch Antenna delivers military-grade antijam PNT through adaptive null steering that actively hunts and eliminates interference.

Its innovative tandem element design packs exceptional jam resistance into a remarkably compact package, with close phase centers and complementary radiation patterns providing deep jammer rejection.

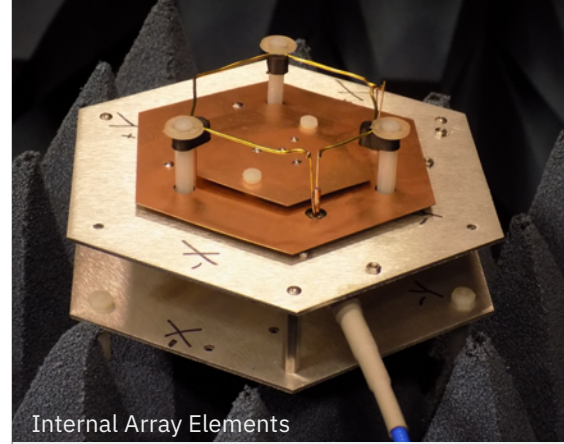
OPERATIONAL ADVANTAGES

- > Mirror image construction defeats multipath errors while sine and cosine elements allow maximum satellite availability
- > Compatible with covariance matrix and STAD antijam processors for complete protection when failure isn't an option

- > May be configured for free space or metal substrate mounting
- > Versatile for manpack, vehicular and aircraft platforms



Example Radiation Pattern,
Jammer Null At $\theta = 45^\circ$, $\phi = 45^\circ$



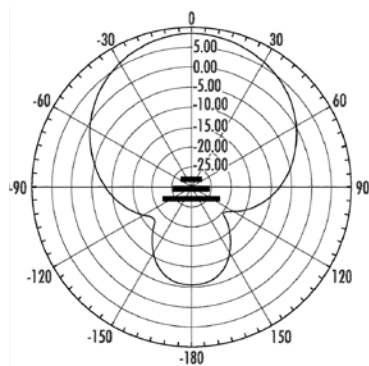
Internal Array Elements

FEATURES AND BENEFITS

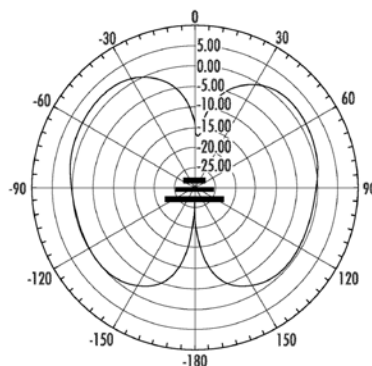
- > Multiple jammer rejection
- > Deep nulls against ground jammers
- > High jam resistance
- > High gain toward satellites 8dBi+
- > Common element phase centers
- > Deep angular resolution
- > Reduced multipath
- > Complementary element patterns
- > Small size, low profile
- > No ceramics

TYPICAL PERFORMANCE

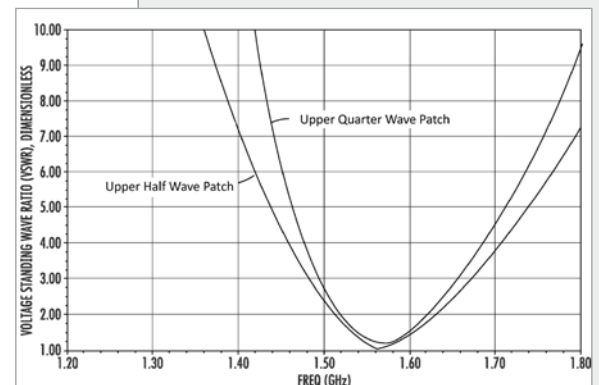
Performance varies based on installation and environmental conditions.



Upper Half Wave Patch Element
Realized Gain In dBi



Upper Quarter Wave Patch Element
Realized Gain in dBi



TYPICAL MEASURED PERFORMANCE

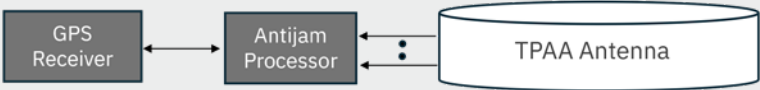
Performance varies with operating platform, radome design, manufacturing tolerances, installation and environmental conditions. Radiation patterns are for individual elements as noted. Not all elements may be configured depending on platform and user choices.

AVAILABLE ANTENNA ELEMENTS, PATTERNS AND POLARIZATIONS			
Port	Element	Pattern Coverage	Polarization
1	Upper half wave circular patch	Upper hemisphere	X linear and Y linear components
2	Upper quarter wave circular patch	Omnidirectional	Z linear component
3	Upper full wave loop	Upper hemisphere	X and Y linear components
4	Lower half wave circular patch*	Lower hemisphere	X horizontal or CP
5	Lower quarter wave circular patch*	Lower hemisphere	Y horizontal or CP
6	Lower full wave loop*	Lower hemisphere	H pol, omnidirectional

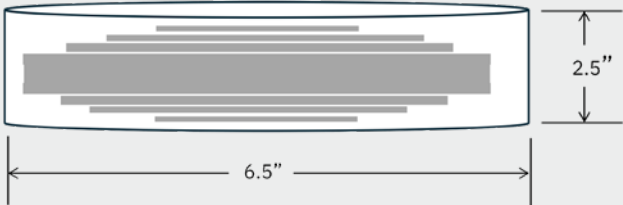
MECHANICAL SPECIFICATIONS	
Aspect	Value
Width	5.3
Length	6.3 inches
Height	2.5 inches
Weight	5 ounces
Finish	To order

UPPER HALF WAVE PATCH ELEMENT ELECTRICAL SPECIFICATIONS	
Parameter	Specification
Element impedance	50 ohms
Polarization	Right hand circular (by hybrid)
Radiation pattern shape	Single cosn directive beam
Realized gain	8 dBic
3 dB beamwidth	76 degrees
3 dB realized gain bandwidth	22 %
Backlobe amplitude	13 dB down from main lobe
RF power handling	Receive only

SYSTEM, CONFIGURATION



DIMENSIONS



U.S. Patent No. 12,009,915

TPAA Antijam Antenna

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