

**De La Hunt Communications Service**  
**17487 Driftwood Lane**  
**Park Rapids, MN 56470**  
**Phone:: (703) 887-6000 Fax: (218)-732-3307**  
**em: eddelahunt@unitelc.com**

**TPO CALCULATION FOR STATION KRSE(FM)**  
**Yakima, WA**

**KRSE Authorized Effective Radiated Power: 100.00 kW 20.00 dBk**

**Antenna System:** Jampro Antennas, Inc.

Model: JHPC-10  
Bays: 10 bays  
Max Power Gain: 5.50

**Antenna Input Power:** 18.20 kW

**Transmission Line and Other Losses:**

**Manufacture:** RFS Flexwell  
**Model No.:** HCC 300-50J  
Length: 245 Feet,  
Diameter: 3-Inch HCC 300-50J  
Efficiency: 92.69%

**Transmitter Power Output (TPO):**

$$\text{TPO} = \frac{\text{Effective Radiated Power}}{(\text{Ant Gain})(\text{T-line Eff})}$$

$$\text{TPO} = \frac{100 \text{ kilowatts}}{(5.5)(.9269)}$$

$$\text{TPO} = 19.62 \text{ kilowatts (unrounded)}$$

$$\text{TPO} = 19.5 \text{ kilowatts (FCC Section 73.212)}$$



## SIDEMOUNT FM ANTENNA

The JAMPRO JHPC antenna is the high power version of the PENETRATOR antenna, which has become an industry standard for quality and performance.

Rated at 50 kW maximum inputs, each bay consists of a PENETRATOR style radiating element with a 3-1/8" shunt feed line. Each JHPC is factory tuned to any frequency in the FM Band II (87.5 -108 MHz) range on a tower structure that best simulates the customer's actual tower. Multiple frequency design is also available. The true circular polarization of the JHPC antenna offers excellent performance for HD Radio, stereo and SCA operation. Typical VSWR is 1.2:1  $\pm$  200 kHz. (Optional 1.1:1).

**Radomes**

**Deicers**

**FCC Directionalization**

**Reduced RF Arrays**

**Pattern Measurement Study**

**Custom Mounting Brackets Available**

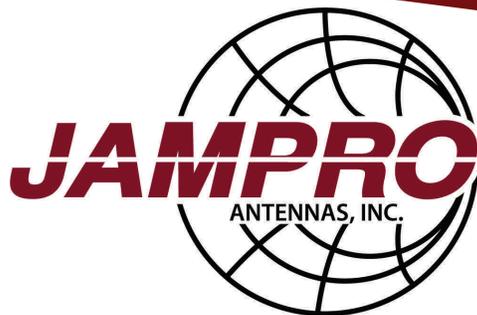
**Electrical Beam Titl**

**Null Fill**

**Multi Frequencies**



The JHPC antenna is constructed of the highest quality marine brass and copper. A hot dipped – galvanized steel mounting bracket for utmost grounding supports each bay. Standard round leg mounting brackets for uniform face towers are included with each antenna. Silver plated inner conductor connectors are used throughout for maximum contact life and minimum power loss. Each JHPC antenna is DC grounded at every bay for maximum lightning protection. This rugged mechanical construction and mounting ensure the long life and outstanding performance of each JHPC antenna system.



Number of Bays	Power Gain	dB Gain	FS @ 1 Mi.	Max Input Power kW	Weight (lbs)	Wind load (lbs)
1 Deicers Radomes	0.46	-3.37	93.2	10	35	41
					44	50
2 Deicers Radomes	1.00	0.00	136.7	20	65	162
					141	203
3 Deicers Radomes	1.50	1.76	168.4	25	159	227
					201	445
4 Deicers Radomes	2.10	3.22	199.2	30	226	331
					253	379
5 Deicers Radomes	2.70	4.31	225.2	35	345	694
					312	459
6 Deicers Radomes	3.20	5.05	246.0	40	348	532
					435	943
8 Deicers Radomes	4.30	6.34	285.2	40	397	587
					442	683
10 Deicers Radomes	5.50	7.40	322.4	40	547	1192
					483	714
12 Deicers Radomes	6.60	8.20	353.2	40	537	835
					663	1440
					654	970
					726	1139
					894	1938
					825	1226
					915	1444
					1125	2436
					996	1481
					1104	1687
					1,1356	2933

**Notes:**

- Weights and wind loads shown include standard leg mounting brackets and feed lines
- Wind loads based on 50/33 PSF (98 MHz, midband)
- Feed points, when end fed is 3 ft below bottom bay; when center fed is 9'. 6" below center
- All inputs are EIA flange, female
- Power derating occurs above 2,000 feet elevation. Contact factory for details
- Power and dB gains are typical for horizontal and vertical components
- Special mounting brackets are available
- Other combinations of EIA inputs and power ratings available
- Free space azimuth circularity is  $\pm 2.0$  dB
- Polarization is right hand, clockwise circular
- Power gain is based on half wave dipole in free space
- Specifications based on one wave spaced bays, other spacing available

**Non-ionizing Radiation:**

Since many factors contribute to a station's compliance with the FCC exposure guidelines for radio frequency radiation, JAMPRO ANTENNAS, INC. cannot accept any responsibility in this matter. The station must examine and determine its status based on each individual situation.

\*All specifications are subject to change without notice.

**Transmission Line Efficiency** -- Computed values are valid for the FM radio band only.  
-- This function does not cover all cable types.

FM Channel number (200 to 300):

Select a cable type:



Length of cable, in meters:

meters

Find Line Efficiency

Result:

0.9269 <=> 92.69%

Clear Values