

**APPLICATION FOR STATION LICENSE**  
**BS&T WIRELESS, INC.**  
**KTND (FM) RADIO STATION**  
**CH 228C3 - 93.5 MHZ - 21.0 KW**  
**ASPEN, COLORADO**  
**August 2010**

**EXHIBIT A**

**KTND Transmission System Calculations**

Effective Radiated Power:	
Horizontal/Vertical	21.0 kilowatts
Antenna:	Electronic Research, Inc. Model SHPXA-8AC-HW-SP 8 bay half wavelength spaced
Horizontal gain:	2.360 <sup>1</sup>
Transmission Line:	
(82 feet)	Myatt - rigid 3 inch air dielectric 98.1% Efficiency
Transmission Line:	
(12 feet)	Andrew HJ12-50 2 1/4 inch air dielectric 99.6% Efficiency
Transmitter combiner:	Shively 2530-3A-16/16/06 Combiner Insertion loss : 0.27840 db 93.791% Efficiency
Required Transmitter Power Output To Reach Effective Radiated Power:	9.71 kilowatts

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1) The gain of the ERI eight bay antenna is different for each of the three stations sharing the antenna. Attached as Exhibit A1 is a vertical plane relative field pattern from ERI for KTND. Exhibit A1 notes that there is 1 degree of beam tilt with 0% first null fill and 4% second null fill.

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**EXHIBIT A (continued)**

**KTND Transmission System Calculations**

Facilities Authorized:	Channel 228C3 - 93.5 MHz
Effective Radiated Power:	21.0 kilowatts (H/V)
Geographic Coordinates:	North Latitude 39° 18' 56" West Longitude 106° 57' 32"
Antenna Center of Radiation:	Above Ground 24.0 meters Above MSL 2,682.0 meters HAAT 109.0 meters
Antenna Structure Registration #:	1200877



ELECTRONICS RESEARCH, INC.  
7777 GARDNER ROAD  
CHANDLER, IN. 47610

FIGURE 1

-----THEORETICAL-----  
VERTICAL PLANE RELATIVE FIELD

8 BAY AXIOM(TM) BROADCAST ANTENNA WITH BEAM TILT  
-1.0 DEGREE(S) ELECTRICAL BEAM TILT  
0 PERCENT FIRST NULL FILL  
4 PERCENT SECOND NULL FILL

POWER GAIN IS 2.360 IN THE HORIZONTAL PLANE(2.395 IN THE MAX.)

