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Antenna Measurement Certification

The Kathrein/Scala CA5-FM/CP/RM/50N Yagi Antenna for use at KRSF has been determined to be in compliance with FCC rules for directional antennas. The Antenna is a crossed Yagi with two sets of linearly polarized elements, mounted on a common boom. The Antenna consists of 5 elements for each polarization that are mounted at right angles to each other as shown on the attached physical drawing for the Antenna in Attachment A.

The CA5-FM/CP/RM/50N Antenna has undergone significant measurement at the Kathrein measurement facility in Rosenheim Germany during June 2017. The measurement configuration is shown in Attachment B. The Antenna was mounted on a pole that effectively matches the installed configuration at the KRSF site and both horizontal and vertical azimuth pattern values were recorded. The measurements were made at 89.3 MHz. The calibrated equipment used to make the measurements are shown in the attached diagram.

As can be seen by the individual Hpol and Vpol pattern data, neither polarization azimuth values exceed the construction permit authorized composite pattern as shown in Attachment C.

The measurements made are certified to be a true and accurate characterization of the CA5-FM/CP/RM/50N Antenna for use at KRSF.

The Antenna azimuth pattern max field is aimed at 0 (zero) degrees true north.

For an ERP level of 930 watts, 233.6 watts must arrive at the input connector of the CA5-FM/CP/RM/50N Antenna

$930W / 6 \text{ dBd} = 233.6 \text{ watts TPO}$

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