BZ5RXI5U
Application for FCC Certification
1000 Watt Digital Television Translator

Operational Description:

This application requests certification for a 1000 Watt Digital Television Translator.

The intended use of this digital translator is to rebroadcast a television relay station or other legal source of ATSC digital television signal. The translator is designed to be driven from an ASI or SMPTE310M output directly from an ATSC IRD unit.

The output modulation format conforms with FCC Part 73.682(d), ATSC Digital Television Standards.

The RXi5U is self-contained in a single cabinet with internal cooling fans. The RF section of the Revive consists of 5 identical amplifiers configured to operate in quadrature. Each amplifier is capable of delivering over 200 Watts of digital power. The outputs of these amplifiers are fed into a 5-way combiner. A power supply at the bottom of the cabinet contains two 5,000W plug-in switch-mode power supply modules that have their output combined to give the needed 10KW of power at +31VDC, supplying power to the amplifiers. A +12VDC power supply rated at 300W provides power to the controllers as well as the DC fans inside the Reject Load and RF Amplifiers. Complete monitoring and status for each amplifier is available via the control unit. A separate, external output mask filter is used to suppress any out-of-band emissions, and a GPS filter is provided when the transmitter is intended for operation on channels 22 through 25, 32 through 38, and channels 65 and above. These filters ensure a further attenuation of harmonics from the transmitter, for a total of greater than 85dB attenuation within the GPS frequency bands.

The RXi5U meets all requirements for unattended operation. Remote control facilities are either via TCP/IP connection, or via standard remote control interface with third party remote control units.

Wiring, shielding and construction are in accordance with accepted principles of good engineering practice. The translator's construction is such that all hazardous components are enclosed or protected against accidental contact by operating personnel.

The testing of this unit was conducted on Channel 22, except for frequency stability tests, which were conducted on channel 20.