

BZ5MXI501UD  
Application for FCC Certification  
500 Watt Digital Television Translator

**Operational Description:**

This application requests certification for a 500 Watt Digital Television Transmitter.

The intended use of this digital translator is to rebroadcast a television relay station or other legal source of ATSC digital television signal.

The MXi501U is a solid state digital regenerative translator designed to receive over-the-air ATSC signals, converting the RF signal to baseband digital format, processing the signal to eliminate noise, and then re-modulating, converting to the new broadcast channel, amplifying and filtering the signal before it is applied to the transmit antenna. The MXi501U may also be used as a Part74 transmitter by feeding an ATSC compliant transport stream to the input of the modulator directly.

The receive section of the translator and the output modulation format conform to FCC Part 73.682(d), ATSC Digital Television Standards.

The MXi501U consists of five components: a 1RU Pulse Modulator unit, and ATCS compliant transport stream receiver, a 3RU RF Power Amplifier; a 3RU Power supply and an output filter. The power supply and amplifiers employ integral cooling fans.

The translator meets all FCC requirements for both the simple emissions mask and the stringent emissions mask. The output filter along with additional filtering within the amplifier provides more than 85dB of attenuation within the GPS Frequency bands (1164-1240 MHz and 1559-1610 MHz). Note that since these products are frequency agile in that they can be field tuned for different channels within the UHF television band, each unit has this filtering included, regardless of the channel.

Testing results shown in this document were conducted on channel 30 (569MHz center frequency) with the exception of the frequency stability tests which were conducted on channel 29 (562MHz center frequency). These test results are representative of performance on any channel in the UHF broadcast spectrum.

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.