

1.0 Purpose

The purpose of this report is to provide a more detailed description of the connections, usage, schematics, and parts lists. This report is to be used in combination with the EMI TEST REPORT to be submitted to FCC for certification of the Ezone TX module product V1.0 900MHz ISM band Transmitter.

2.0 Scope

The document although used primarily in combination with the EMI TEST REPORT for FCC certification submission, does contain information included in documents such as the users manual, and test procedures.

3.0 Test Description

3.1 Test Configuration

Unit Name – Processor, Monitor, Printer, Cable, Etc. (indent for features of a unit)	Style/Model/Part No.	Serial Number	Obj. of test	1	2	Comments/FCC ID#
Ezone TX module V1.0	ETXMOD9000A	001	20V	20V		

3.2 Equipment Description

This module is to be used in various models of a compact Entertainment System for Fitness Industry. A typical system consists of an audio/video system with self-contained audio CD, audio cassette tape, and television with wireless headphone. The audio channel of one of the three sources is selected and transmitted to wireless headphones using this TX module.

3.2.1 Mode of Operation for FCC EMI Test

The EUT that was used during the testing was connected through an interface cable. This cable provided both the serial communications used to control the EUT and supply audio signals necessary for operation. This cable was connected to a laptop computer located remotely. This laptop computer contained special test software that allowed the transmitter frequency, power output, and modulation to be changed manually. The transmitter power output was adjusted until the radiated level was in compliance with the maximum FCC allowable limit. **It must be emphasized that the power output, and modulation adjustments cannot be adjusted in normal operation of the TX module. These values are only adjusted when calibrating the TX module during manufacture and during the FCC EMI testing setup.**

The location of the Laptop was such that it did not interfere with the emission measurements made at the test site. The laptop and special software used on the laptop would was only used in order to allow modifications of power output and modulation during the tests for compliance. During the manufacturing calibration these settings would be loaded into a non-volatile EEPROM on a manufactured unit (see additional information on manufacturing calibration procedure). These settings would be retrieved from EEPROM during power-up of the TX module during normal operation and used to set the default adjustment pots on the module. The carrier modulation was also calibrated to give a standard peak modulation

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deviation of 75KHz during normal operating audio input levels (see additional information on manufacturing calibration procedure). The EUT under test used a 1KHz full amplitude audio tone for the reference audio signal.

3.2.2 Mode of Operation for Normal Operation.

The TX module is located within products produced exclusively for E-Zone Networks Inc (E-Zone research and development). This module is not intended to be used or sold separately from intended E-Zone products. All E-Zone products that use this TX module will be verified to be in compliance with FCC allowable limits at a recognized certified test lab. These Verification tests will be performed with the TX module properly installed. The TX module's purpose is to transmit Left and Right channel audio to a 900MHz headphone receiver set. The Left and Right audio signals are fed into the TX module connector. The standard signal levels for these inputs are 2V peak. Any levels in excess of 2V peak are hard limited through the use of input limiting diodes. This prevents any unexpected over-modulation conditions that may occur. The frequency of the carrier is selected using an I2C serial command bus. This bus uses a standard I2C protocol and proprietary command set to select the frequency of the RF carrier signal. Other functions of the TX module can also be changed through this I2C command bus. These functions are:

- Carrier On/Off command.
- Pilot tone On/Off.
- TX Power attenuation setting.

The TX module will accept a DC power supply of 9V to 18V DC. The TX module contains 3 on-board voltage regulators that regulate all circuit sections within the module.

3.3 **Antenna Requirement – per 15.203**

The Antenna is installed during manufacture and cannot be removed or changed by the operator.

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