ENERNET
CORPORATION

April 14, 2010

Federal Communications Commission
Office of Engineering and Technology
445 12TH St. SW
Washington, DC 20554

To Whom it may concern:

Re: Equipment Certification, FCC ID: TGD12200
(IC: 6120A-12200)

The following materials document modifications to the 12000 product, related to applicant's permissive class 2 change (refer to Fig. 1, 12200 Product Tree.)

Item 1: (IC Model 12200) The original tested, certified unit.

Item 2: (IC Model 12200GE)
A minor receiver circuit change increases sensitivity and reduces effects of impulse noise. The transceiver is an enclosed, shielded SMT hybrid integrated circuit, produced by RF Monolithics, Inc, (part # TR1000) and all modifications are related to receiver baseband (detected) signal processing; they do not change any RF function of the IC. (See Fig. 2, *Original Receiver Components*, Fig. 3, *Modified Receiver Components*, Fig. 4, *RF Ground Plane*).

- Minimal layout change to add SMT capacitor C37 on top PCB. This enables receiver AGC and peak-data-slicer functions.
- SMT resistor value of R41, related to threshold value, has been changed.
- Resistor R42 is populated.

SMT Transient voltage suppressors have been added to PCB inputs and pushbuttons connected to microprocessor pins to improve ESD and surge immunity.

Item 3: (IC Model 12200A)
Another product variant includes the above modification, plus layout, schematic and parts changes related to microprocessor output pins (See Fig. 5, *Original Drive Circuit* and Fig. 6, *Modified Drive Circuit*)

- The original circuit feeds static ON/OFF microprocessor pin signals through a logic gate driver into a triac circuit for switching 24VAC ON or OFF. The modified circuit eliminates the logic gate driver in favor of discrete transistors and associated bias resistors.
- Indicator lamps are moved from the triac 24 VAC output to the transistor drive circuit, thereby improving the product's leakage specifications.
- Rectified, filtered DC voltage is supplied to connector J1, as on the original item 1.

307 DEWITTSHIRE ROAD, SYRACUSE, NEW YORK 13214 — TEL.: 315-449-0839 FAX: 315-449-3056

Item 4: (IC Model 12200MI)
A final variant includes all of the above modifications plus a slightly increased PCB size to accommodate fitting a plastic enclosure. There are no changes to ground plane or layout. (See Fig. 7)

Sincerely,

Gary Carner, VP Engineering

E-mail: carner@enernetcorp.com