

July 30, 2015

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD, 20146

To Whom it may concern:

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

The following materials document modifications to the 12000 product, related to applicant's permissive class 2 change application.

Refer to schematic drawing *12200C SCH.PDF* for the following narrative. Model 12200C is derived from 12200A.

Change 1:

The original Cypress microcontroller chip (U1) produced under Echelon Corporation license, has become obsolete. It has been replaced by a newer Echelon microprocessor. U1 now requires a serial EEPROM memory IC (U3) to load the operating program upon powerup or reset. U3 also stores nonvolatile data items during operation. Power and ground planes have been added to facilitate layout and keep board electrical noise and unintentional emissions low.

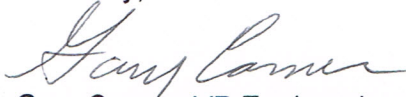
Change 2:

The 12200A has solid state thyristor switches (triacs) to operate external 24 Vac devices. These are problematic when attempting to control devices with widely different load characteristics (resistive vs. inductive, for example). Moreover, triacs are imperfect switches – never all the way off or all the way on. These undesirable characteristics have been eliminated by replacing triacs on the 12200C with mechanical relays, K1-K6. Higher energy consumption of the relays requires a power supply with full wave rectifier, BR1.

Change 3:

Optional 3rd party devices complying with the Dallas one-wire protocol may connect to T1 and T2 connectors. J4 is an unused interface port reserved for future development.

Sincerely,



Gary Carner, VP Engineering

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