2.933(a)/2.983(a) The full name and mailing address of the manufacturer and applicant for Type Acceptance is:

ABB Power T&D Company Inc.
210 S. Rogers Lane
Raleigh, NC 27610

2.1033(b)(2) The ABB FCC Identifier of the device is I7JM505A.

2.933(b)(1) A copy of the original Type Acceptance grant is included in the exhibits section. The original FCC ID number is Motorola and is FCC ID: MKMPW1100-1

2.933(b)(2) The original date of the Motorola Type Acceptance grant was May 22, 1997

2.933(b)(3) N/A

2.933(b)(4) The original equipment is not modified or changed by ABB. A statement to this affect is included in the exhibits section.

2.933(b)(5) We believe that the previous data on file with the FCC continues to be representative because no design, circuitry or construction changes are performed by ABB.

2.933(b)(6) Photographs of the device, including the host Alpha Stars system, are enclosed in the exhibits section.

2.933(b)(7) N/A

III. 15.107 CONDUCTED EMISSIONS MEASUREMENTS

The power line conducted emission measurements were performed in a shielded enclosure. The EUT's were assembled on a wooden table 80 centimeters high and was placed 40 centimeters from the sidewall ground plane and at least 80 centimeters from the Line Impedance Stabilization Networks (LISNs). Power was fed to the EUT from the public utility power grid through a 50 microhenry LISN. Power was fed to the accessories from a public utility power grid through a multiple outlet, which was connected to a separate 50 microhenry LISN, with both of its 50-Ohm outputs resistively terminated in 50 Ohms. The

LISN housing, measuring instrumentation case, conducting ground plane, etc., were electrically bonded together at the same RF potential. The spectrum analyzer was connected to the AC line through an isolation transformer. The 50-Ohm output of the LISN was connected to the spectrum analyzer through a 400kHz high-pass filter. Conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak detection mode (or peak mode, if applicable). The analyzer's 6 dB bandwidth was set to 10 kHz. No post-detector video filter was used.

The emission spectrum was scanned from 450kHz to 30MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitude relative to the appropriate limit was measured and recorded. Once the highest emission was located, the configuration and mode of operation of that emission was used for final testing. The final test was performed without varying the EUT configuration. The highest emission amplitudes relative to the appropriate limit were measured and were recorded.

In no case did the conducted emissions exceed the limits specified in Paragraph 15.107 of the Commission's Rules. A verification measurement report was prepared and delivered to ABB Power T&D Company Inc.

As a sample calculation, assume a particular device emits an emission frequency of 50MHz. The received signal level is measured as 27.0 dBuV. The total attenuation factor (antenna factor plus cable loss) for 50MHz is 4.0 dB. The actual radiated field is calculated as follows:

27.0 dBuV + 4.0 dB = 31.0 dBuV/m

All detectable emissions were found to be in compliance with the restrictions of Paragraph 15.109 of the Commission's Rules. A verification measurement report was prepared and delivered to ABB Power T&D Company Inc.

FCC ID: I7JM505A

IV. 15.109 RADIATED EMISSION MEASUREMENTS

The Alpha Star electric metering transponder system was assembled on a rotatable wooden test stand 0.8 meters in height and 3 meters from the measurement antenna. At each emission frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered to determine the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations. The spectrum analyzer's 6 dB resolution bandwidth and video bandwidth were set to 100kHz for quasi-peak measurements, normally required settings defined in ANSI C63.4-1992 for the unintentional radiator tests. No post-detector video filters were used. The highest emission amplitudes relative to the appropriate limit

IV. 15.109 RADIATED EMISSION MEASUREMENTS

The Alpha Star electric metering transponder system was assembled on a rotatable wooden test stand 0.8 meters in height and 3 meters from the measurement antenna. At each emission frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered to determine the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations. The spectrum analyzer's 6 dB resolution bandwidth and video bandwidth were set to 100kHz for quasi-peak measurements, normally required settings defined in ANSI C63.4-1992 for the unintentional radiator tests. No post-detector video filters were used. The highest emission amplitudes relative to the appropriate limit were measured and were recorded. All emissions not reported were more than 20 dB below the specified limit.

The actual field intensity in decibels above one microvolt per meter (dBuV/m) is determined by algebraically adding the measured level in dBuV, the antenna factor (dB), and the cable loss (dB) at the appropriate frequency.

$$FI_a\ (dBuV/m) = FI_m\ (dBuV) + AF\ (dB) + CL\ (dB)$$

FI_a = Actual Field Intensity
FI_m = Measured Field Intensity
AF = Antenna Factor
CL = Cable Loss