

November 28, 2004

Federal Communications Commission  
7435 Oakland Mills Road  
Columbia, MD 21043

Reference: Siemens Transportation Systems application for certification of a spread spectrum transmitter under FCC ID: QSCCARBORNE1 and FCC ID: QSCWAYSIDE1

Gentlemen:

The equipment described in the attachments to this application is intended to be used by the New York Transit Authority for controlling subway cars on a segment of the public transportation system in that city. The sections of the subway in which this equipment will be installed are locations where tradesmen or specialized personnel performing maintenance tasks such as painting, electrical power refurbishment, plumbing refurbishment or installation, etc., are likely to be in close proximity or possibly even direct contact with active antennas associated with the normal operation of the transmitter. Photos have been submitted with each application showing that other plant facilities are in a common close quartered environment with the antenna systems for the above equipment.

Due to the extraordinary circumstances related to usage of these systems at certain locations such as; longevity (25 years or longer), the variability of maintenance requirements, maintenance personnel turnover, etc., Siemens cannot ensure that a separation distance of at least 20 cm from all persons will be maintained as required by the grants previously issued to them. As a practical matter, there is no technique that would be capable of providing all persons with the potential to come in close proximity of the antenna of transmitter operating conditions for satisfying RF exposure compliance. Based on these facts, Siemens is submitting applications for new FCC ID's for each system to address installation in locations where they determine that the required 20 cm separation distance from all persons may not be met. In this connection, they are providing SAR evaluation for these units that show they meet the specified SAR level for persons in an uncontrolled environment scenario in situations where the individual may be in direct contact with the exterior surface of the antenna cover.

Further, based on concerns for high gain antenna configurations and non-compliance with MPE limits, as expressed by the FCC in discussions concerning this issue, Siemens is also providing routine RF exposure information based on MPE calculations. While it may be considered unusual to address routine RF exposure for less than 20 cm separation conditions and for greater than 20 cm separation conditions, it is appropriate for this system.

SAR evaluation is based on measurements made on each type of antenna that will be connected to a wayside transmitter or a carborne transmitter. For the wayside transmitter, two antennas will be used: a 13.9 dBi yagi or a 9 dBi horn. During testing, the transmitter was operated at a power level that corresponded to the maximum power level that would ever be applied to that type of antenna based on test results for the various antenna configurations. Thus, these measurements reflect the worst case SAR levels for the wayside and carborne systems. It should be noted that the 9 dBi horn was tested with the carborne transmitter only. Since the carborne transmitter has a slightly higher power output than the wayside transmitter, its data is applicable to the wayside unit also. SAR data taken with the 9 dBi horn antenna using the carborne output power level is included with the wayside application.

This equipment is electrically identical to the previously certified wayside and carborne units; FCC ID's: QSCWAYSIDE and QSCCARBORNE respectively. In this case the original test reports and data

continue to be applicable to these units. The test reports have references to antenna other than the 9 dBi horn antenna for the carborne unit and the 9 dBi horn and 13.9 dBi yagi antenna. Those references should be ignored as not applicable since the wayside and carborne systems only use the 9 dBi and 13.9 dBi antenna. The various antenna configurations for the wayside and the carborne units using the 13.9 dBi and 9 dBi antenna for wayside units and 9 dBi antenna for the carborne units are described in the test reports. Additional application material deemed appropriate for this filing has been uploaded to this application file.

Prior to the original testing, FCC Laboratory personnel were consulted as to appropriate test configurations. The results of those discussions are attached as a separate exhibit in the application filings for the carborne and wayside unit applications referenced above and are directly applicable in this case. In brief, those discussions concluded that representative worst case testing would be done for the various antenna configurations using the actual design layout to cover the subway segment under consideration. That discussion further stipulated that conducted power measurements would be made at the input to the individual antennas and must be no greater than +30 dBm. EIRP levels would be measured using a substitution technique.

If there are any questions regarding the material submitted in support of the applications for the referenced FCC ID's, please contact the undersigned at the address above.

Sincerely,

Phillip Inglis  
Consultant