Landis+Gyr is pleased to state that our Smart Meters, being part of your AMI deployment project, comply with applicable FCC regulations. In order to substantiate our claim, we have prepared the information below based on actual network behavior and calculations on code performance. The results obtained are similar to the ones observed in other deployments where it was ruled that our Smart Meters comply with FCC limitations for allowed RF emissions exposure.

The data provided below clearly supports our claim that our Smart Meters are tested and validated to comply with FCC limitations and that transmissions from our Smart Meters fall below the acceptable safe levels of human exposure to radio frequency electromagnetic fields as defined by FCC OET Bulletin 65.

1. What is an average duration (in seconds) that a residential smart meter transmits in a 24 hour period?

As Landis+Gyr has described, the smart meter communicates intermittently throughout the day. A calculation has been performed based on data collected from our customer deployments.

Packet Type	Duration (ms)	# Packets	# Transmissions	Time Used (sec)
Self-Read	63	1	1	0.06
Load Profile	57	1	6	0.34
On-Demand	63	1	2	0.13
Maintenance	46	1	270	12.52
Sync	48	1	1440	69.00
Application Traffic	63	11	1.68	1.16
Total	**340**	**16**	**1720.68**	**83.20**

Self-Read and Load Profile:
The meter is normally programmed to send 7 times per day using our default configuration. Six of these are for Load Profile data transmission and the Daily Self-Read packet provides the seventh.

On-Demand:
For the purposes of capturing emissions we have also included unscheduled activity for the On-Demand Read. All devices do not get 2 requests per day but the action is only occupying 0.13 seconds to perform a function such as a Service Disconnect.

Network Management Activities/Maintenance:
The maintenance transmissions are those required for normal mesh communications. The frequency of this is not on a rigid schedule. If a device communicates with another device it may determine maintenance is not required. In these cases the calculation above is overstated. For the purposes of this activity it has been assumed they are always required which is a worst case scenario. These mesh activities are items such as neighbor discovery, slot validation, etc.

Sync:
The number of sync packets is using one packet every minute for a total of 1440 per day. A complete sweep of the channels occurs ~ every 1.5 hours and then repeats. This process is done to discover any new neighbors which may have been installed and can also decrease the amount of maintenance required. The maintenance assumes that each device has a full neighbors list with at least 5 good neighbors of the approximately 35 total neighbors. For the 30 poorer neighbors, this model assumes an average of two maintenance retries for each eight hour maintenance window.

Application Traffic:
The 1.68 transmissions for application traffic was based on taking a collector sample of devices and calculating the average number of neighbors reporting through each device to a collector. This calculation came to 1.68 neighbors reporting through each device.

Summary:
Overall the device will communicate for just over 83 seconds across the entire day at an average transmission duration of 48ms. This equates to 1 packet every 50.21 seconds.

The numbers above apply for a system in Advanced Security mode and operating in High Speed Mode.

Also ZigBee is not included in these numbers as there is not traffic from this radio until a network has been created. Since the ZigBee radio has not created a network and devices are not allowed to join, the radio will be quiet.

a. How is this average computed or measured?

The duration assumes that all the self-read packets and the On Demand read packets are fully loaded, so the total time of one transmission is computed and it is multiplied by the average number of transmissions per day.

b. How many of those times (average and maximum) are to transmit electric usage information?

All seven of the core scheduled packets are for meter reading data. The maintenance and sync packets do NOT contain metering data. Only application traffic, which are used for movement of other meter data, contain reads.