Compliance with 47 CFR 2.1091 and 1.1310

The EUT is a UMTS radio module. The EUT will only be used with a separation distance of 20 centimeters or greater between the antenna and the body of the user or nearby persons and can therefore be considered a mobile transmitter per 47 CFR 2.1091(b). The antenna is a PIFA with a peak gain of 0.3 dBi in the 824 MHz band and 2.7 in the 1850 MHz band. The maximum peak conducted output power is 1578mW in the 824 MHz band, and 995 mW in the 1850 MHz band.

The maximum peak radiated power (as measured in the EMC report) is 0.698 W (ERP) in the 824 MHz band and 0.427 W (ERP) in the 1850 MHz band. Since the radiated power is less than 1.5 W ERP, the EUT is categorically excluded from routine environmental evaluation per 47 CFR 2.1091(c).

The MPE estimates are as follows:

Table 1 in 47 CFR 1.1310 defines the maximum permissible exposure (MPE) for the general population below 1500 MHz as f/1500 mW/cm^2 where f = MHz. Above 1500 MHz, the limit is 1 mW/cm^2. The exposure level at a 20 cm distance from the EUT's transmitting antenna is calculated using the general equation:

$S = (PG)/4\pi R^2$
Where: S = power density (mW/cm^2)
P = power input to the antenna (mW)
G = numeric power gain relative to an isotropic radiator
R = distance to the center of the radiation of the antenna (20 cm = limit for MPE estimates)
PG = EIRP

Solving for S, the maximum power density 20 cm from the transmitting antenna is summarized in the following table:

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Antenna Type	Antenna Manufacturer	Antenna Part No.	Transmit Frequency (MHz)	Max Peak Conducted Output Power (mW)	Antenna Gain (dBi)	Minimum Antenna Cable Loss (dB)	Power Density @ 20 cm (mW/cm^2)	General Population Exposure Limit from 1.1310 (mW/cm^2)
PIFA	Laird	Laird WLAN	824	1578	0.3	0	0.34	0.55
PIFA	Laird	Laird WLAN	1850	995	2.7	0	0.37	1

The power density does not exceed 0.37 mW/cm^2 at 20 cm; therefore, the exposure condition is compliant with FCC rules.