



Excellence in Compliance Testing

Certification Exhibit

**FCC ID: R7PFTAR1S1
IC: 5294A-FTAR1S1**

**FCC Rule Part: 15.247
IC Radio Standards Specification: RSS-210**

ACS Project Number: 14-0447

Manufacturer: Landis+Gyr Technology, Inc.
Model: Field Tool Adapter

RF Exposure

General Information:

Applicant: Landis+Gyr Technology, Inc.
Environment: General Population/Uncontrolled Exposure
Exposure Conditions: Portable (Hand-held / Body Worn)

The EUT contains an integrated 902-928 MHz radio and pre-approved Bluetooth radio; both of which can operate simultaneously.

900 MHz Radio -

(EUT Integrated Radio / FCC ID: R7PFTAR1S1)
Minimum Test Separation Distance: 5 mm
Highest Operating Frequency: 927.9 MHz
Antenna Type: Ceramic Chip
Antenna Gain: -1.0 dBi
Maximum Transmitter Conducted Power: 10.7 dBm, 11.8 mW
Maximum Transmitter EIRP: 9.7 dBm, 9.3 mW

Bluetooth Radio -

(Pre-approved Module / FCC ID: ED9LMX9838)
Minimum Test Separation Distance: 5 mm
Highest Operating Frequency: 2480 MHz
Antenna Type: Ceramic Chip
Antenna Gain: 2.0 dBi
Maximum Transmitter Conducted Power: 2.1 dBm, 1.6 mW
Maximum Transmitter EIRP: 4.1 dBm, 2.6 mW

Justification for SAR Test Exclusion (FCC):**Standalone SAR Test Exclusion:**

Per KDB 447498 D01 General RF Exposure Guidance v05r02, the standalone 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$

900 MHz Radio -

(EUT Integrated Radio / FCC ID: R7PFTAR1S1)

$$= (12 / 5) * (\sqrt{0.9279}) = 2.3$$

$$\mathbf{2.3 < 3.0}$$

Bluetooth Radio -

(Pre-approved Module / FCC ID: ED9LMX9838)

$$= (2 / 5) * (\sqrt{2.480}) = 0.6$$

$$\mathbf{0.6 < 3.0}$$

Standalone SAR test exclusion is applied.

Simultaneous Transmission SAR Test Exclusion:

When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration.

When the standalone SAR test exclusion is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following to determine simultaneous transmission SAR test exclusion:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}/x] \text{ W/kg for test separation distances } \leq 50 \text{ mm};$$

where $x = 7.5$ for 1-g SAR, and $x = 18.75$ for 10-g SAR.

900 MHz Radio

(EUT Integrated Radio / FCC ID: R7PFTAR1S1)

$$= (12 \text{ mW} / 5 \text{ mm}) * [(\sqrt{0.9279 \text{ GHz}})/7.5] = 0.3 \text{ W/kg}$$

Bluetooth Radio

(Pre-approved Module / FCC ID: ED9LMX9838)

$$= (2 \text{ mW} / 5 \text{ mm}) * [(\sqrt{2.480 \text{ GHz}})/7.5] = 0.1 \text{ W/kg}$$

Sum of 1-g Estimated SAR = 0.4 W/kg < 1.6 W/kg

Simultaneous transmission SAR test exclusion is applied.

Justification for SAR Test Exclusion (IC):

The SAR test exclusion thresholds are determined using draft IC RSS-102 Issue 5, section 2.5.1 Table 1.

900 MHz Radio

(EUT Integrated Radio / IC: 5294A-FTAR1S1)

Maximum Conducted or Equivalent Isotropically Radiated power (EIRP): 11.8 mW

The linear interpolated threshold of table 1 for 927.9 MHz at a separation distance of 5 mm is determined as 16 mW.

11.8 mW < 16 mW

Bluetooth Radio

(Pre-approved Module / IC: 1520A-LMX9838)

Maximum Conducted or Equivalent Isotropically Radiated power (EIRP): 2.6 mW

The linear interpolated threshold of table 1 for 2480 MHz at a separation distance of 5 mm is determined as 3.9 mW.

2.6 mW < 3.9 mW

SAR test exclusion is applied.