Annex E. Calibration Certificates

ID	Device	Type/Model	Serial Number	Manufacturer	Calibration Certificate
068-000	5GHz System Validation Dipole	D5GHzV2	1164	SPEAG	See attachment
070-000	2450MHz System Validation Dipole	D2450V2	937	SPEAG	See attachment
004-006	Dosimetric E-field Probe	EX3DV4	7604	SPEAG	See attachment

Dipole calibration

According to the KDB 865664 D01, a dipole must be calibrated using a fully validated SAR system according to the tissue dielectric parameters and SAR probe calibration frequency required for device testing. However, instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements.

The test laboratory must ensure that the required supporting information and documentation are included in the SAR report to qualify for the three-year extended calibration interval; otherwise, the IEEE Std 1528-2013 recommended annual calibration applies.

Immediate re-calibration is required for the following conditions:

1. When the most recent return-loss result, measured at least annually, deviates by more than 20% from the previous measurement (i.e. value in dB × 0.2) or not meeting the required 20 dB minimum return-loss requirement.

1. When the most recent measurement of the real or imaginary parts of the impedance, measured at least annually, deviates by more than 5 Ohms from the previous measurement

The below results show the latest return loss and impedance measurements for each dipole performed by the lab:

Dipole ID #070-000			
Dipole 2450MHz Body TSL			
	Return Loss [dB]	Impedance [Ω]	Date
Initial Calibration	-29.7	50.90 + 3.20 j	2020-05-12
Last	-34.8	51.10 + 1.50 j	2021-11-17
Dipole ID #068-000			
Dipole 5200MHz Body TSL			
	Return Loss [dB]	Impedance [Ω]	Date
Initial Calibration	-31.5	50.0 – 2.6 j	2021-05-18
Dipole 5300MHz Body TSL			
	Return Loss [dB]	Impedance [Ω]	Date
Initial Calibration	-31.0	50.7 +2.7 j	2021-05-18
Dipole 5500MHz Body TSL			
	Return Loss [dB]	Impedance [Ω]	Date
Initial Calibration	-29.9	49.0 + 3.0 j	2021-05-18
Dipole 5600MHz Body TSL			
	Return Loss [dB]	Impedance [Ω]	Date
Initial Calibration	-23.6	53.2 +6.0 j	2021-05-18
Dipole 5800MHz Body TSL			
	Return Loss [dB]	Impedance [Ω]	Date
Initial Calibration	-20.9	53.8 +8.6 j	2021-05-18