

Appendix D: Total Exposure Ratio (TER) Analysis and Smart Transmit Verifications

D.1. Total Exposure Ratio (TER) Analysis

Total exposure ratio (TER) is the method used to show compliance with the regulatory limits by combining SAR and power density measurements after normalizing them to their respective limits. TER should be less than 1 to ensure compliance.

$$TER = \sum_{a=1}^A \frac{SAR}{SAR_limit} + \sum_{b=1}^B \frac{PD}{PD_limit}$$

NR FR2 and NFC/WPT/UWB simultaneous transmission analysis can be found in this appendix. Further simultaneous transmission analysis can be found in SAR Part 1 report and Part 2 report.

For this DUT, the OEM has applied permanent backoff to the initially calculated input.power.limits for specific beams (see power density part 0 test report). Worst case adjusted reported_psPD is based on the worst case surface from simulation at 2mm.

$$reported_{psPD} = (PD_design_target + PD_uncertainty) \times 10^{(-backoff\ dB)/10}$$

Table D-1
Reported psPD Analysis

Adjusted Reported_psPD (W/m ²)	Worst case Measured psPD (W/m ²)	Final Reported_psPD (W/m ²)	Final Reported_psPD Ratio to Limit (W/m ²)
8.910	7.380	8.910	0.891

Table D-2
SAR Analysis

NFC worst case 10g SAR (W/kg)	UWB worst case 10g SAR (W/kg)	NFC SAR Ratio-to- limit	UWB SAR Ratio-to- limit	Total SAR Ratio-to- limit
0.006	0.047	0.002	0.012	0.014

Note: WPT ratio-to-limit is < 0.000 W/kg and does not impact the SAR ratio-to-limit value.

Table D-3
Total Exposure Ratio (TER)

Final Reported_psPD Ratio to Limit	Worst Case SAR Simultaneous Ratio-to- limit	SAR Ratio-to-limit + PD Ratio-to-limit
		TER
0.891	0.014	0.905