

American Telecommunications Certification Body Inc.

6731 Whittier Ave, McLean, VA 22101

RE: THE LINKSYS GROUP INC.

FCC ID: PKW-WPC11-V31

After a review of the submitted information, I have a few comments on the above referenced Application.

- 1) **The Maximum output power (conducted) or SAR drift measured at same position in liquid before and after each SAR test must be shown on each SAR plot? Please update the report to include this.**

Corrected in the report.

- 2) **Test report must state (recommended on page 19 of 30):**

A) Identification of the device (was it considered mobile or portable transmitter device category

B whether test device is production unit or identical prototype (47 CFR §2.908)?

Corrected in the report

- 3) **Please provide a means to verify a phantom liquid depth. Depth must be 15 cm or more, per suppl. C and draft IEEE STD 1528. Please use photos, SAR vs. depth data (z-axis scan), or other means to demonstrate/verify liquid depth.**

Corrected in the report

- 4) **-- IEEE STD 1528 requires that the SAR test be performed at the high, middle, and low frequency channels of each operating mode. However, if the SAR measured at the middle channel for each test configuration is at least 2.0 dB lower than the SAR limit, testing at the high channels is optional (Note: this procedure is stated on page 6 & 17 of 30. The data provided is for the low channel only. Please provide data for the middle channel.**

Per supplement C, the SAR test is performed for the highest EIRP value channel, which in this case is the lowest channel. The final SAR value is significantly lower than limit, (less than 2 dB) therefore measurement is done for only one channel (in this case the low channel) and the measurement for other 2 channels is optional.

- 5) **--- Please provide a description of the material/holder used to support the laptop.**

See report page 10. The material used is ROHACELL 51HF. Dielectric properties are: 1.057 @ 2.5GHz and 1.065 @ 5GHz. Loss Tangent is <.0002 at 2.5GHz.

- 6) **Please justify and explain the use of a crest factor of 8.**

Waiting for answer from Bromax.

- 7) **A z-axis scan at the max SAR location must be provided.**

Please note all the plots provided(pages 27 & 28) have Z-axis scan, which is in the SARA2 output for both area and zoom scans.

- 8) **OET Bulletin 65, Supplement C make mention of using the Flat Phantom Box for system verification. Please justify the use of this box for over the SAM phantom containing a flat body cavity.**

The Flat Phantom Box supplied by IndexSAR meets the dielectric and dimensional requirements of IEEE1528. Nowhere does any specification specifically identify the flat area of the TWIN SAM as the phantom of choice. No justification is needed.

- 9) **Description of the phantom should detail shell thickness and other tolerances necessary to show it meets the phantom shell specifications.**

The shell thickness is 2mm. Please see page 13 of the test report.

- 10) **Scan procedures given in the report appear to be for different phantoms. Please explain for the course scan:**

- a) descriptions of coarse area scan procedures, including grid size, area shape and size
- b) specify which peak SAR location(s) were used to evaluate max 1-g SAR(s)
- c) report probe tip distance to phantom inner surface

11) Scan procedures given in the report appear to be for different phantoms. Please explain for the "zoom" scan:

Questions no 10 & 11 are unclear

a) descriptions of high-resolution cube volume or "zoom" scan procedures used for local scan; list measurement and interpolation resolutions

12) The tissue parameters appear to be that of head tissue and not body tissue, please explain.

This was a typographical error in the original report which has been corrected in the updated report.

13) The tissue dielectric parameters and temperature should be measured at device mid-band frequencies. It appears that these were performed at the lower frequency.

The parameters were measured at 2.45GHz and the response was very flat throughout the whole frequency band.

14) SAR Plots must show:

a) Ambient and liquid temperatures

b) liquid temperatures during SAR testing must stay within $\pm 2^\circ \text{C}$.

This was an omission in the original report which has been corrected in the updated report.

15) The Tissue Parameters given on page 20 do not appear to match the parameters given on the test plots. Please explain.

This was a typographical error in the original report which has been corrected in the updated report.

16) Page 17 of 30 mentions "the above mentioned power values are conducted measured values..." . There is not any reported power values on this page.

This was a typographical error in the original report which has been corrected in the updated report.

17) Please provide a brief description of the reference source (e.g., 900, 1800 MHz dipoles) used to verify the SAR system performance.

Used the IEEE1528 std, specified reference dipoles (by the way we used the dipole for 2.45 GHz). Liming please EXPAND on the rest of the source...Please see page 21 of 30 on The report.

18) Please provide the manufacturer/calibration reference dipole data.

See the attachments.

19) Regarding the Field Probe:

a) description of the probe – including tip diameter, internal sensor offset from tip, etc

b) description of the probe measurement errors

c) Description of probe calibration errors/uncertainties

d) Please provide most recent calibration date and calibration certificate showing all factors used in report.

See the attachments.

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20) A list of measured tissue dielectric parameters, ambient and tissue temperatures must be provided for the system verification. These values must be within 5% of the values used in system manufacturer's reference test.

This was an omission in the original report which has been corrected in the updated report.