

Dear Stan,

The response for the requested technical information in CRN: 24576 have been integrated into your original text below. Please review at your earliest convenient. Thanks.

Best regards,

Steve Cheng

Re: FCC ID H8NWLC221-D4

Applicant: Askey Computer Corp

Correspondence Reference Number: 24576

731 Confirmation Number: EA282217

1.) Power is inconsistent throughout filing; please clarify, harmonize, revise any exhibits if needed, and repeat any SAR or EMC tests at maximum power if needed. Grant will not list higher than demonstrated SAR test power.

Form 731:

2412-2462 95mW DTS

5180-5320 90mW NII

5745-5825 136mW DTS

EMC:

2412-2462 54mW

5180-5320 29mW

5745-5825 121mW

SAR:

2412-2462 44mW

5180-5320 36mW

5745-5825 36mW

<CCS response>

a) The power difference in between the EMC and SAR test is due to the different measurement method. In EMC report the reported value is according to the specific method required by the corresponding rule part, but, due to the lack of equipment in SAR lab, SAR lab usually reported the EUT power in average term. Below is the cross-reference table for same power in different power term.

Frequency	DTS peak		UNII method 3		Average	
	mW	dB	mW	dB	mW	dB
2412-2462	54	17.29			44	16.45
5180-5320			29	14.6	36	15.56
5745-5825	121	20.81			36	15.63

b) The higher power indicated in 731 form is original targeted output power. But was reduced to meet the bandedge requirement during the test. Please revised 731 based upon EMC output power
2412-2462 54mW
5180-5320 29mW
5745-5825 121mW

2.) Please confirm that Operational Description exhibit is correct for antenna, or revise if needed. This does not look like other top-loaded monopoles on similar devices.

<CCS response>

As mentioned in the "Theory of Operation" The antenna is a monopole type over a finite ground plane. In order to shrink the antennae height, the monopole is bent (top loaded with fringing capacitance to the ground). The antenna radiates vertical polarization and is almost omni directional in the horizontal gain. The actual layout of the antenna could be found in the "Antenna Specification. PDF". We believe that monopole is a proper name for the antenna used in the application.

3.) Additional SAR data as applicant desires.

<CCS response>

Client would like to include the TOSHIBA laptop model: PS610U-AAAA5 into the grant. So extra SAR test for this model in DTS and UNII bands have been uploaded.

A) No additional data required. Grant is considered specific host.

Proposed grant comment similar to

The SAR data in this filing is applicable to demonstrate compliance for a final host product only as shown in this filing. Installation of this device into other host products requires the submission of a Class II permissive change application containing data demonstrating compliance for SAR, spurious emissions, and EIRP, or new application if appropriate. Compliance of this device in all final host configurations is the responsibility of the Grantee. End-users must be provided with specific information required to satisfy RF exposure compliance for the final host device. The antenna(s) used for this transmitter must not be co located or operating in conjunction with any other antenna or transmitter within a host device

B) Testing with at least two additional host devices using the same test device at the same SAR lab. Grant will be limited to substantially similar laptop computers. Other host class types require three hosts testing.

Proposed grant comment similar to

SAR compliance has been established in the laptop computer(s) [or other host type defined] configurations with PCMCIA slot configurations (e.g., side near the rear) as tested in this filing, and can be used in laptop computers [or other host type device] with substantially similar physical dimensions, construction, and electrical and RF characteristics. Compliance of this device in all final host configurations is the responsibility of the Grantee. End-users must be provided with specific information required to satisfy RF exposure compliance for all final host devices. The antenna(s) used for this transmitter must not be co located or operating in conjunction with any other antenna or transmitter within a host device.

4.) Radiated power and spurious emissions to correspond to any additional SAR testing performed for #3.

<CCS response>

Since original EMC test is configured as a module device, i.e. EUT was tested outside the laptop and result is independent to the host. So we believe no extra test for the new laptop is necessary.

5.) Updated user manual RF safety statement. The statement "If the antenna is positioned less than 2.5 cm from the user, it is recommended that the user limit exposure time." is not appropriate since time averaging has not been defined. Also, please consider how the user is expected to maintain a 2.5 cm gap while in the lap held configuration. Please update statement accordingly.

<CCS response>

New revised user manual has been uploaded to the OET web.

6.) Clarification of device maximum power. Please justify large differences between form 731, EMC report and two SAR reports. Please provide SAR test results for maximum power.

<CCS response>

As explained in Q1, EUT was designed to output higher power original, but due to the band edge emission problem, the output power has been intentionally re-adjusted to the lower level to meet the limit. The new power will be set in the factory facility and is not end user adjustable.

7.) Justification of the phantom used for SAR testing. Supplement C recommends phantom to be twice the corresponding dimension of the device under test. Also, please provide SAR scans for all parts of the device under testing including the host.

<CCS response>

a) Supplement C recommends "The length and width of the phantom should be at least twice the corresponding dimensions of the **test device**, including its antenna." In our case test device is 11a/b/g PCMCIA card its dimension is only 11.9 cm(L) by 5.4 cm(W), but not host device.

b) The info we received from TCB training and IEEE 1528, also documents that

IEEE 1528 4.4.3 Flat phantom

A flat phantom should be --- The minimum transverse dimensions (width and length) should be such that the SAR measurements are not affected by more than 1.0%. For a half-wavelength dipole source, the length should be at least 0.6 times the wavelength in air in the major dimension and width should be at least 0.4 times the wavelength in air in the minor dimension (Annex D1) [Chavannes and Christ, 2000].

TCB SAR Training (August 2001) Supplement C: System Accuracy, slid 3:

-flat phantom requirements

- 0.6? long and 0.5? wide may be smaller if 1-g SAR is within $\pm 1\%$ of that produced by the required phantom dimensions

- liquid depth - 15.0 ± 0.5 cm

- shell material - $\epsilon_r < 5.0$ and loss tangent < 0.05

- shell thickness

-bottom

»< 1.0 GHz: $< 6.5 \pm 0.2$ m

»³ 1.0 GHz: $< 5.0 \pm 0.2$ mm

-all other sides - < 10.0 mm

Summary: In our case the EUT operation frequency is 2.45G and the free space wavelength is 12.24 cm. This compare to the SAM phantom size of 30cm x 23cm at flat section is within the proposed spec.

8.) Updated user manual to correspond to the desired Grant condition selected in #3. Host must be defined and appropriate RF safety statement given in the user manual.

<CCS response>

New revised user manual has been uploaded to the OTE web.

9.) Additional calibration information for 5 GHz testing. Please include photographs of the key steps taken.

<CCS response>

Please refer to uploaded file "Response to CRN 24576 Q9 Q10. PDF"

10.) Additional photographs of measurement setup for 5 GHz testing. Please provide improved quality photographs of the device against the phantom. Please also provide additional perspective angles.

<CCS response>

Please refer to uploaded file "Response to CRN 24576 Q9 Q10. PDF"