Dear Andy,

Submitted herewith, on behalf of Toshiba Cooperation, is in response to the request for additional technical information addressed in CRN 24816. We trust this information is sufficient to issue the grant. If you have any questions please do not hesitate to contact us.

Best regards,

Steve Cheng
Compliance Certification Services
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1) The Test Report appears to be incomplete. The Test Report seems to only have radiated emissions and conducted emissions data. The Test Report mentioned that the Bluetooth TX was previously Granted as a limited modular approval under a different FCC ID. I checked that application and the Test Report looks like it contains all of the missing data. I suggest that you transfer the appropriate data from that report to this application. Of course, any radiated measurements will not be applicable. If you choose to do this, explain everything in your correspondence.
<Response>
Per your request UNII report for WLAN module has been attached to this submission for your review. Below is a short description for the relation between related submissions:

1. This application, Toshiba touch screen platform with 802.11 a/b combo wireless LAN module with option co-working Bluetooth card, used two FCC module approved devise
2. Since this application include a tablet PC with a built-in LAN module and a option BT card, the application includes the following test data
   -EMC performance related to digital portion of Notebook Computer.
   -EMC performance related to LAN & Bluetooth module
   -EMC performance related to the co-location of LAN and BT module
   -SAR performance related to 2.4G 802.11b LAN and 2.4G Bluetooth inside Notebook
   -SAR performance related to 5G 802.11a/b LAN inside Notebook
   -SAR performance related to the co-location of LAN and BT module inside Notebook
3. The above necessary info has been address in individual file as documented below
   -EMC performance related to digital portion of Notebook Computer.
   Submitted file: DIGITAL TEST REPORT PART 1.pdf (in both UNII & DTS filling)
   DIGITAL TEST REPORT PART 2.pdf (in both UNII & DTS filling)
   -EMC performance related to LAN & Bluetooth module
   Submitted file: CRN-24816 WLAN module UNII EMC report.pdf (in UNII filling)
   CRN-24817 WLAN module DTS EMC report.pdf (in DTS filling)
   CRN-24817 BT module EMC Report.pdf (in DTS filling)
   -EMC performance related to the co-location of LAN and BT module
   Submitted file: FCC UNII REPORT.pdf (in UNII filling)
   FCC DTS REPORT (in DTS filling)
   -SAR performance related to 2.4G 802.11b LAN and 2.4G Bluetooth inside Notebook
   Submitted file: 2GHz REVISED SAR TEST REPORT FCC ID CHANGED.pdf (in DTS filling)
   -SAR performance related to 5G 802.11a/b LAN inside Notebook
   Submitted file: 5GHz SAR TEST REPORT.pdf (in both UNII & DTS filling)
   -SAR performance related to the co-location of LAN and BT module inside Notebook
   Submitted file: 2GHz REVISED SAR TEST REPORT FCC ID CHANGED.pdf (in DTS filling)
   5GHz SAR TEST REPORT.pdf (in both UNII & DTS filling)

2) It appears that the AC line conducted data was only done down to 450 kHz. Refer to Report and Order FCC 02-157 for new rules. To avoid a Grant condition that prohibits manufacture and sale after July 1994, I suggest that this test be repeated in accordance with FCC 02-157.

<Response>
Thanks very much for the advice, due to the fast changing nature of this product, applicant believe that July 1994 limitation is OK for them and if necessary they will file another C2PC later.

SAR Issues:

1) Op desc states:
NOTE:The internal Wireless LAN Card can't be used with the "Toshiba Wireless LAN PC Card".
What is Tosh. Wireless LAN PC Card?
<Response>
Toshiba wireless LAN PC Card refer to existing Toshiba wireless LAN cards on the market. Since the Notebook computer submitted in this filing already equipped with 802.11 a/b WLAN, End user has no need to install additional WLAN card.

2) User man. mentions only 2.4GHz LAN. Please submit applicable user manual or page corrections.
<Response>
Three corrected pages have been uploaded to the OET web. Files name “CRN-24816 revised manual pages.PDF”.

3) User man. pdf pg 184 mentions internal and plug-in Bluetooth cannot operate simultaneously. Please describe hardware or software restriction details. Does that apply to all plug-in card formats?
<Response>
Since MS window is an open architecture, Toshiba do not have special implementation to prevent both internal / external Bluetooth or WLAN card to work simultaneously. The strong language in P184 of user manual “Make sure no optional Bluetooth PC card is installed in the computer. The built-in Bluetooth function and an optional Bluetooth PC card cannot operate simultaneously ” is used to warn the user that used of any external duplicated BT or WLAN pc card may not work properly due to the facts that it is not yet verified by the Toshiba and Toshiba does not encourage the usage.

4) Is cross-check similar to 3) above used for LAN cards? Please describe.
<Response>
Same as Q3.

5) Are Bluetooth and LAN always installed, or are there depopulated versions that may need separate FCC IDs?
<Response>
LAN is always installed, while Bluetooth card is optional. When Bluetooth is installed, additional FCC ID: CJ6UPP350BT will be shown on the system. This procedures is based upon previous instructions provided by Tim and Joe.

6) User man. Fig 3-2 shows tablet mode with antennas held against body. Edge SAR tests were done in lid-open notebook mode only. Please explain how present SAR data applies to this use condition, or submit additional SAR data if needed.
<Response>
Figures 5a and b of the SAR report show the antennas pressed against the phantom with lid-open notebook mode. However, there was no difference in SAR whether the non-radiating keyboard was left open or was shut as for the tablet mode. Thus, the SAR data in Tables 3-6 for **Configuration 2 (edge-on position)** pertains also to the tablet mode with antennas held against the body.

7) User man. Fig 3-3 shows antennas held near forearm. Please explain how present SAR data applies to this use condition, or submit additional SAR data if needed.
<Response>
The antennas for this condition are separated from the forearm by the thickness of the keyboard. This exposure condition is covered by **Configuration 1** also called the **laptop position** in the SAR test report. For this configuration, the bottom of the PC is pressed against the bottom of the flat phantom (see Figs. A and B attached here). As given in Table 11 of the SAR test report, the SAR for this configuration was extremely low, both when the top cover was opened up as for normal operation or when the cover was closed against the keyboard with display screen towards the keyboard or away from it as for the tablet mode in Fig. 3-3 of the User's manual. The very low SAR for this configuration is likely due to the shielding effect of the keyboard which separates the antenna from the laptop or the forearm.

8) Please confirm that flat phantom base thickness in SAR report Fig 5 is 2mm.
<Response>
The dimensions of the planar phantom model are given on pages 1 and 3 of the SAR report submitted on January 21, 2003. The phantom model has inside dimensions 12" × 16.5" (30.5 × 41.9 cm) and a base thickness of 2.0 ± 0.2 mm.

9) Please confirm that flat phantom base thickness in SAR report Fig 5 is 2mm.
<Response>
The dimensions of the planar phantom model are given on pages 1 and 3 of the SAR report submitted on January 21, 2003. The phantom model has inside dimensions 12" × 16.5" (30.5 × 41.9 cm) and a base thickness of 2.0 ± 0.2 mm.

10) Form 731 says this is part of system with CJ6UPP35ASY - please explain.
<Response>
Please disregard this, it is a typo. Thanks.

11) Forms 731:
2400-2483.5mhz 66mW
2400-2483.5mhz 2mW
5150-5350mhz 50mW
5725-5850mhz 204mW
Please submit similar list for powers in SAR and EMC reports and confirm that powers are harmonized across Form 731, SAR, EMC, op desc., user manual, etc exhibits.
<Response>

UNII Base Mode

Channel	Frequency (MHz)	FCC UNII Peak Power (dBm)	SAR Average Power (dBm)
Low	5180	14.6	15.0
Middle	5260	16.8	17.0
High	5320	14.9	15.5

Note: EMC and SAR were tested to the same average power level.
The deferent level shown is due to the expression in different power term.

UNII Turbo Mode

Channel	Frequency (MHz)	FCC UNII Peak Power (dBm)	SAR Average Power (dBm)
Low	5210	16.8	17.0
Middle	5250	16.6	17.0
High	5290	17 (50mw)	17.0

Note: EMC and SAR were tested to the same average power level.

The deferent level shown is due to the expression in different power term.

DTS 2.4 GHz Band (BLUETOOTH)

Channel	Frequency (MHz)	Peak Power (dBm)	SAR Peak Power (dBm)
Low	2402	0.9	N/A
Middle	2441	1.3	1.3
High	2480	1.4 (1.38mw)	N/A

DTS 2.4 GHz Band (802.11b)

Channel	Frequency (MHz)	Peak Power (dBm)	SAR Peak Power (dBm)
Low	2412	13.2	13.2
Middle	2437	18.2 (66mw)	18.2
High	2462	15.9	15.9

DTS 5.8 GHz Band Normal Mode (802.11a)

Channel	Frequency (MHz)	Peak Power (dBm)	SAR Average Power (dBm)
Low	5745	23.1 (204mw)	15.0
Middle	5785	22.8	15.0
High	5825	22.5	15.0

Note: EMC and SAR were tested to the same average power level.
The deferent level shown is due to the expression in different power term.

DTS 5.8 GHz Band Turbo Mode (802.11a)

Channel	Frequency (MHz)	Peak Power (dBm)	SAR Average Power (dBm)
Low	5760	22.2	15.0
Middle	N/A	N/A	N/A
High	5800	22.1	15.0

Note: EMC and SAR were tested to the same average power level.
The deferent level shown is due to the expression in different power term.

The highest outputs in each band are consistent with the data filed in 731 form as listed below:
2400-2483.5mhz 66mW for 802.11b DTS
2400-2483.5mhz 1.38mW for Bluetooth DTS
5150-5350mhz 50mW for 802.11a UNII
5725-5850mhz 204mW for 802.11a DTS

12) Please submit close-up setup photo of device at phantom for SAR test Config. 1.
<Response>
Please refer to attached file:"CRN-24816 5G config-1 setup photo .pdf" for The setup photos. It should be noted that the bottom side of the laptop computer is pressed against the base of the planar phantom model for this SAR test configuration. This Configuration 1 corresponds to the Toshiba Model PP350X-XXXXX Wireless PC placed on a user's lap or held against the forearm as for the PC tablet mode shown in Fig. 3-3 of the User's manual.

13) SAR report Fig 2 Bluetooth antenna is next to Wireless LAN Sub - was SAR for simultaneous transmission with BT and 802.11a evaluated? If yes how? If no why not?
<Response>
The Toshiba Model PP350X-XXXXX Wireless PC uses the LAN sub antenna only for reception diversity. The wireless LAN main antenna is used for 5G power transmission

purposes. Since this antenna is approximately 13 cm away from the Bluetooth antenna, there is negligible coupling between the two antennas and the peak SAR regions are highly localized (see e.g. Figs. 11a-d and 12 a-d of the SAR report).

14) Relevance of SAR test configurations is unclear.
a) Config 1 - base against flat phantom, closed notebook mode - does device transmit in this configuration? Maybe tablet mode is more appropriate? See also 7) above.
b) Config 2 - This appears to be bystander or more correctly what is usually considered a mobile exposure condition with respect to user. See also 6) above.
c) Config 3 - unclear where and why 2.5cm is used here. Should this be tablet mode? See also a) and 7) above.
d) SAR report pg 2 "b. For a bystander" - it is not clear that intended USER modes have been accounted for which should be priority.
<Response>

a. **Configuration 1 –** base against flat phantom pertains to normal PC mode with PC held against the laptop or PC tablet mode with base of the keyboard held against the forearm as shown in Fig. 3-3 of the User's manual.

b. **Configuration 2** – edge-on exposure with antennas held against the body (flat phantom for SAR measurements). This corresponds to the PC tablet mode shown in Fig. 3-2 of the User's manual and also when a bystander may be standing to the right of the operator of the PC in the tablet mode as shown in Fig. 3-3 of the User's manual.

c. **Configuration 3** – This so-called **End-on configuration** is to determine peak 1-g SAR for a bystander who may be behind the screen of the Toshiba Model PP350X-XXXXX PC at a distance of 2.5 cm when the PC is operating in the normal PC mode. To determine SAR distribution for this configuration, the PC was operated with the top cover closed and the top cover was placed parallel to the base of the planar phantom at a distance of 2.5 cm (see Fig. 6 of the SAR test report).