**From:** Phil Inglis
**Sent:** Tuesday, July 08, 2008 5:01 PM
**To:** PCTEST TCB
**Subject:** FCC ID: BJIOH0006,GOOD NEws REVISED!

Dear Mr. Czumak,

Greg,

Cetecom provided the timing documents. It seems they had the unit after all. All questions are responded to.

Phil

Responses follow the questions. Responses are in all CAPS to ensure they are easily seen. The request for a data sheet showing it meets the 0.4 sec on any channel limit is coming. Unfortunately, Cetecom no longer has the equipment and it may take a few days. It would be appreciated if you could review the other responses tosee if they are acceptable.

Regards,
Phil

PCTEST TCB wrote:

> To: Mr. Phil Inglish/ TRP
> From: Mr. Gregory Czumak / PCTEST TCB
> RE: FCC ID: BJIOH0006
>
> Applicant: Toshiba TEC Corporation
>
> Correspondence Reference Number: BJI80599
>
> Confirmation Number: 807020599
> Date of Original Email: July7, 2008
>
> Subject: Request for additional information
> In regards to your recent FCB application referenced above, we kindly request that you provide the following additional information.
> 1. Please verify that the EUT will only be marketed and sold to OEM installers, and not the general public.
> THE EUT IS ONLY USED BY TOSHIBA TEC AND IS INSTALLED ONLYIN THEIR OWN PRODUCT LINE. IT IS GENERALLY INSTALLED AT THE FACTORY OR AUTHORIZED FACILITY AND NOT GENERALLY SOLD TO THE GENERAL PUBLIC. HOWEVER, IN SOME INSTANCES IT MAY BE SOLD BY AUTHORIZED DEALERS FOR INSTALLATION INTO CURRENT OWNERS OF

CERTAIN TOSHIBA TEC PRINTERS FOR RETROFIT . DUE TO THE COMPLEXITY OF INSTALLATION PROFESSIONAL INSTALLATION OF THIS RFID MODULE WILL BE PERFORMED BY THE AUTHORIZED DEALER. IN THESE CASES, THE ENTIRE PACKAGE INCLUDING THE READER, ANTENNA AND CABLE MUST BE USED BECAUSE THE SYSTEM IS ENGINEERED TO ONLY FIT IN SPECIFIC MODELS AND INSTALLATION REQUIRES STRICT ADHERENCE TO THE INSTALLATION INSTRUCTIONS SINCE COMPONENT PARTS LOCATION TOLERANCE ARE VERY TIGHT. THE INSTALLATION INSTRUCTIONS ATTEST TO THE REQUIREMENT FOR EXTREMELY TIGHT FITTING OF THE COMPONENTS WITH THE PRINTER.

2. The test report and installation manual indicate an apparent SMA antenna connector on the module, as well as an external antenna cable and external antenna assembly. This contradicts statement #4 of the modular approval checklist submitted. Please address Section 15.203, and revise the checklist. If the professional installation clause of 15.203 is to be used, please address the intended use of the EUT, the method of marketing and the installation requirements that necessitate professional installation.

AS STATED ABOVE THE UNIT IS ONLY USED IN TOSHIBA TEC'S LINE OF PRINTERS WHICH ARE ENGINEERED TO ACCEPT THE MODULE. SINCE THE UNIT IS PRINCIPALLY INSTALLED BY TEC OR THEIR AUTHORIZED FACILITIES IN A PRINTER PRODUCT LINE HAVING ESSENTIALLY THE SAME FORM FACTOR, IT IS EQUIVALENT TO A PROFESSIONAL INSTALLATION. FURTHER, IT'S ONLY USE IS TO DETERMINE THE LEVEL OF MEDIA INSIDE A PRINTER WHICH PRECLUDES ITS APPLICATION IN ANY OTHER MANNER AND IT IS ONLY PROVIDED AS A COMPLETE ASSEMBLY. SINCE TOSHIBA OR THEIR AUTRORIZED FACILITIES ARE THE INSTALLERS OF THIS EQUIPMENT, THEY ENSURE THAT THE PROPER ANTENNA AS SUPPLIED BY THEM WILL BE EMPLOYED IN ALL UNITS SO THAT THE LIMITS IN PART 15 ARE NOT EXCEEDED. THE ANTENNA SUPPLIED MUST BE USED BECAUSE IT FITS INTO A SPECIFIC AREA OF THE PRINTER THAT CAN ONLY ACCOMODATE THE ANTENNA SUPPLIED. THUS, THE UNIT COMPLIES WITH SECTION 15.203 SINCE IT HAS BEEN DESIGNED TO ENSURE THAT NO ANTENNA OTHER THAN THAT FURNISHED BY THE RESPONSIBLE PARTY CAN BE USED BY THE DEVICE.

3. The installation manual contains an RFx statement that "cautions" the end user. If the EUT is to be sold only to OEM installers, the RFx statement must instruct them in the installation requirements for RFx exposure compliance (i.e., the EUT must not be collocated or used in conjunction with any other transmitter), and the installer must be instructed to provide the end-user with the information necessary for operation in compliance with RFx requirements (i.e., a minimum separation distance of 20 cm from the antenna must be maintained during normal operation (please note that this requirement is a must, and not a "caution")). Please revise the installation

manual accordingly and resubmit it.
REVISED MANUAL ATTACHED.

4. The operational description first seems to say that only a 915 MHz signal is generated, then, further along, it references hopping. This is unclear. Does the EUT always transmit in hopping mode, or not? Please clarify.

THE UNIT ALWAYS TRANSMITS IN A HOPPING MODE.

5. Please verify that the receiver hops in unison with the transmitted signal, per Section 15.247(a)(1).

THE RECEIVER ALWAYS HOPS IN UNISON WITH THE TRANSMITTED SIGNAL.

6. Please address Section 15.247(a)(1) with respect to the hopping channel frequency carrier separation (typically a plot is provided).

THE UNIT HOPS TO 99 CHANNELS OVER A RANGE OF 26 MHZ. THE TEST REPORT SHOWS THAT THE 20 DB BANDWITH OF THE HOPPING CHANNELS IS LESS THAN 100 KHZ (94 KHZ). THE REPORT SHOWS FULL BAND COVERAGE (927.25 - 902.75=24.5 MHZ) WITH A DEVICE HAVING A HOPPING CHANNEL BANDWIDTH OF SLIGHTLY LESS THAN 100 KHZ. 24.5 MHZ DIVIDED BY 99 SHOWS THE FREQUENCY CARRIER SEPARATION IS 247 KHZ.

7. Please address Sections 15.247(g) and (h).

SECTION 15.247(g): TOSHIBA WARRANTS THAT THEIR TX AND RX SYSTEM ARE DESIGNED TO COMPLY WITL ALL OF THE REGULATION IN PART 15 AND TYPICALLY IS CONTINUOUSLY MONITORING THE MEDIA IN THE PRINTER. THE UNIT IS NOT DESIGNED TO EMPLOY BURSTS. IF STARTED AND STOPPED, THE UNIT ALWAYS SELECTS A DIFFERENT 99 CHANNEL PESUDO RANDOM SUBSET FROM THE MATRIX STORED IN FIRMWARE FOR THE NEXT SESSION.

SECTION 15.247(h): THE UNIT DOES NOT COORDINATE ITS EMISSIONS WITH THOSE OF OTHER TRANSMITTERS.

8. Please provide data demonstrating compliance with the average time of occupancy requirement of Section 15.247(a)(1)(i).

Timing plots attached showing occupancy is less than 0.4 sec within a 20 sec interval.

9. Please describe the antenna. What is its gain? I note that the MPE calculations assume unity gain, but the test report appears to show radiated output power data resulting from antenna gains as low as -12.4 dBi. Please clarify, and revise the MPE calculations using the true gain, if necessary.

YOU ARE CORRECT. THE STRIP ANTENNA HAS A NEGATIVE GAIN. SINCE THE UNIT COMPLIES WITH AN ABSOULTE WORST CASE SCENARIO BASED ON THE CONDUCTED POWER FROM THE TX MODULE IT WAS NOT FELT NECESSARY TO DO ADDITIONAL CALCULATIONS.

10. Please verify the detector function used to perform radiated emission measurements for emissions over 1 GHz.

THE SCAN PLOTS WERE MADE IN PEAK MODE AS INDICATED IN THE

ANALYZER SCREEN SHOT. FOR EXAMPLE SEE PLOTS 3, 4, 7, 8, 11, AND 12.

11. Only one side of each of the pcb's is shown in the photos. Please verify that there is no circuitry on the other side of each board, or else submit photos of those sides.

THERE IS NO CIRCUIT COMPONENTS ON THE OTHER SIDE OF THE BOARD.

The items indicated above must be submitted before processing can continue on the above referenced application.
Sincerely,

Gregory Czumak
Senior Certification Engineer
Quality Manager

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