

## Mike Kuo

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**From:** rick@etc.org.tw  
**Sent:** November 11, 2003 12:39 AM  
**To:** Mike Kuo  
**Subject:** Re: SysOnChip FCC ID:P47SOC2S03, AN03T3388



PCB photo.doc

Hello Mike,

Regarding your questions, please see the following:

Question #1: This product doesn't connect computer when it gets work, due to the test we need connect computer to adjust the channel, max.output power... to test, so there is no notebook computer was shown in the photo.

Questions#2: Attached please find the photos

Questions#4: Our client told us as following: "The external antenna have only GPS receiver function, it is not bluetooth antenna, the external antenna is MC connector type".

Thank you very much for your greatly support!

Best regards,  
Rick Hu

----- Original Message -----

From: "Mike Kuo" <MKUO@CCSEMC.com>  
To: <rick@etc.org.tw>  
Sent: Thursday, November 06, 2003 10:58 AM  
Subject: SysOnChip FCC ID:P47SOC2S03, AN03T3388

> Question #1: Per the description in the test report, notebook computer was  
> used to connect the EUT via RS232 cable. However, in the test setup  
photo,  
> there is no notebook computer was shown in the photo but with test board.  
> Please explain.  
>  
> Question #2: Please provide additional internal photo by removing the  
metal  
> plate.  
>  
> Question #3: In the future, please indicate (with data or graphs) the  
actual  
> minimum measurement levels your measurement system is capable of  
measuring.  
> As an example, in radiated harmonic tests, you simply state that the  
> emissions were not detectable. We would like to know that your measurement  
> system was actually capable of measuring down to (below the limits), to  
> verify actual compliance. If you can not detect the emission field  
> strength, please provide the noise floor level.  
>  
> For your information: In section 15.247 ( c ) of rules provide the  
> technical requirement for unwanted emission ( harmonic and spurious  
emission  
> ). The first requirement : In any 100kHz bandwidth outside the frequency  
> band in which the spread spectrum intentional radiator is operating, the  
> radio frequency power that is produced by the intentional radiator shall  
be

> at least 20dB below that in the 100kHz BW within the band that contains the

> highest level of the desired power, based upon either an RF conducted or  
> radiated measurement. Attenuation below the general limits specified in  
> 15.209(a) is not required.

>

> Based upon the requirement in the rules, there are two possible way to  
> address -20dB requirement : RF conducted or Radiated measurement. If you  
> are using radiated measurement, the requirement is to set the BW=100kHz.  
> The field strength of fundamental frequency has to be included in the test  
> report. By having the fundamental field strength measurement, all  
unwanted

> emissions which are not in the 15.205 restricted band table, the field  
> strength for unwanted emission is -20dB down of fundamental field  
strength.

> Normally, radiated measurement is used for those device with integral  
> antenna which the antenna connector is not accessible. The frequency  
range

> to be investigated is up to 10th harmonics.

>

> The other way to address BW=100kHz , -20dB down is through RF conducted  
> measurement. RF conducted measurement is normally used for those device  
> with antenna connector. By connecting one end of RF cable to the EUT's  
> antenna connector and the other end to spectrum analyzer, position the  
> marker on the highest fundamental emission and position your display line  
to

> -20dB of highest fundamental, all emission shall be -20dB down of  
> fundamental frequency. The frequency range to be investigated is up to  
10th

> harmonics

>

> The second requirement in section 15.247 ( c ) of rules is to address  
> restricted band operation. For those harmonic and spurious emissions that  
> are within 15.205 restricted table, the field strength shall comply with  
> 15.209 general limits. The frequency range to be investigated is up to  
10th

> harmonics. For those emissions that are not within 15.205 table, you are  
not

> required to perform the investigation.

>

>

> Question #4: In the user manual, an optional external antenna can be used  
> with this device and user can plug in such external antenna. Please  
explain

> what is this the external antenna for which function. Is it for GPS or  
for

> Bluetooth ? What is the antenna connector type and the gain ?

>

>

>

> Best Regards

>

> Mike Kuo

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