

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

From: David Legge ES-Lhd
Sent: Wednesday, February 04, 2004 4:52 AM
To: Roland Gubisch ES-Box
Cc: Danielle Fontaine ES-Box
Subject: RE: TCB Review of Saitek applications FCC ID: QIWSZ02-1 and FCC ID: QIWSZ02-2

Roland

Just realized the conducted emission plots were omitted from the revised report.

Attached new report << File: 03011850(e).doc >>

Dave

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

From: Roland Gubisch ES-Box
Sent: 29 January 2004 14:03
To: David Legge ES-Lhd
Cc: Ken Newman ES-Lhd; Danielle Fontaine ES-Box
Subject: RE: TCB Review of Saitek applications FCC ID: QIWSZ02-1 and FCC ID: QIWSZ02-2

David,

Thank you for the revised report. Yes, where the peak values are everywhere below the average limits, the FCC requirements are satisfied. I'll review the report shortly.

Regards,
Roland

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

From: David Legge ES-Lhd
Sent: Wednesday, January 28, 2004 11:43 AM
To: Roland Gubisch ES-Box
Cc: Ken Newman ES-Lhd
Subject: RE: TCB Review of Saitek applications FCC ID: QIWSZ02-1 and FCC ID: QIWSZ02-2

Roland

Attached is a revised report. My test equipment above 1GHz defaults to 120 kHz RBW for average mode testing. As you will see in pages 5 & 8, I tested in Peak mode with a RBW 1MHz and VBW 3MHz. All peak levels were below the average limits by 24dB for the EIRP measurements and 16dB for spurious emissions. Will this method satisfy FCC. All the other points in your TCB review are being addressed.

David << File: 03011850(e).doc >>

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

From: Roland Gubisch ES-Box
Sent: 21 January 2004 14:07
To: David Legge ES-Lhd
Subject: RE: TCB Review of Saitek applications FCC ID: QIWSZ02-1 and FCC ID: QIWSZ02-2

David,

According to 15.35(b), above 1 GHz both average and peak field strength limits apply to each emission detected. The peak limit is 20 dB above the average limit. Where the average limit is specified (as it is in the 15.249 rules), it may be measured either with a 10 Hz video bandwidth on the spectrum

analyzer or with a digital averaging scan. The normal resolution bandwidth for measuring emissions above 1 GHz is 1 MHz, unless specified otherwise in the rules.

I hope this answers your questions adequately. If not, please let me know.

Regards,
Roland

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

From: David Legge ES-Lhd
Sent: Wednesday, January 21, 2004 7:45 AM
To: Roland Gubisch ES-Box
Subject: RE: TCB Review of Saitek applications FCC ID: QIWSZ02-1 and FCC ID: QIWSZ02-2

Roland

Could you define the "average limits" and minimum RBW above one 1GHz

Dave

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

From: Roland Gubisch ES-Box
Sent: 20 January 2004 13:45
To: David Legge ES-Lhd
Cc: Danielle Fontaine ES-Box
Subject: RE: TCB Review of Saitek applications FCC ID: QIWSZ02-1 and FCC ID: QIWSZ02-2

Thank you, David.

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

From: David Legge ES-Lhd
Sent: Tuesday, January 20, 2004 8:40 AM
To: Roland Gubisch ES-Box
Subject: RE: TCB Review of Saitek applications FCC ID: QIWSZ02-1 and FCC ID: QIWSZ02-2

Roland

Thanks for your reply. Average reading retest in hand also photographs.

Confirm Admin point 1

Admin 2, will get info from Clive Tomorrow

Dave

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

From: Roland Gubisch ES-Box
Sent: 19 January 2004 17:42
To: David Legge ES-Lhd
Cc: Clive Patten ES-Lhd; Danielle Fontaine ES-Box
Subject: TCB Review of Saitek applications FCC ID: QIWSZ02-1 and FCC ID: QIWSZ02-2

David,

Review of these applications is complete and the following points are noted:

ADMINISTRATIVE

1. It appears that FCC ID: QIWSZ02-1 applies to the hub, and FCC ID: QIWSZ02-2 applies to the dongle; please confirm.
2. Per Clive Patten, we will use FRN: 0009778820, assigned to Saitek Shenzhen, for these applications. Contact information is required at that location (name, phone, fax, e-mail). Please provide.
3. Separate external photos of each device for certification are required; please provide.
4. If not shown in the external photos, some indication of the location of the FCC ID label, such as a sketch, must be provided.
5. Photos or drawings of the intended product labels, showing the FCC IDs and wording per 15.19 (if device is sufficiently large), must be provided.
6. A user manual, showing the required wording per 15.21 and 15.105, must be provided.
7. It is not clear how the hub and dongle were tested; if together, please indicate how.

Example: setup photo DCP01811.jpg, is the dongle present? Separate external photos will help.

8. Internal photos

a) should show construction of device; please provide photos showing how internal parts such as PCBs appear in the enclosure.

b) must be clear; dongle RF assembly photos DNG RF Ass.jpg and DNG RF Ass2.jpg are fuzzy. Please provide clearer photos.

c) must show both sides of all PCBs; HUB Pop2.jpg is the only HUB populated PCB photo found. Please provide photo of other side of PCB.

TECHNICAL

1. Additional information is needed for certification under 15.247 Rules:

a) channel bandwidth plots, using $RBW \geq 1\%$ of channel BW, for high, low and mid channels; hopping disabled.

b) plot of average channel occupancy time.

c) band edge plots, below lowest and above highest channels; $RBW \geq 1\%$ of channel BW; hopping enabled and disabled.

d) descriptive information on how the receiver input bandwidth matches the hopping channel bandwidth, and how the frequency is pseudorandom, per 15.247(a)(1).

e) instrument settings for measurements > 1 GHz: RBW, detector type used. Please note that both peak and average measurements are required, unless peak is below average limit.

2. Please review and correct table 3.3.2 heading for emission levels; values and heading (dBuV) do not appear correct.

3. In lieu of applying under 15.247 Rules, you may wish to consider 15.249 Rules. RF output power of this device is sufficiently low to qualify. Items 1(a)-(d) above are not required under 15.249, but the following information is required:

a) field strength (not substitution power) of fundamental and harmonics;

b) attenuation of spurious emissions by lesser of 50 dB below fundamental or to 15.209 limits;

c) peak and average field strength compliance per 15.35(b), as also noted in 1(e) above.

Thank you,
Roland Gubisch
Intertek TCB