

PCTC
Product Compliance Test Center
2476 Swedesford Road, Malvern, PA 19355

May 25, 2000

FCC Application Processing Branch

Correspondence Reference Number: 14198
Applicant: Checkpoint Systems, Inc.
731 Confirmation Number: EA97409
Product: Strata MX
FCC ID Number: DO4STRATAMX

Gentlemen,

Please accept the following responses to the questions posed through E-Mail on the above referenced product.

Question 1: The equipment did not list an antenna below 25 MHz. Please list the antenna used.

Response 1: Our procedures for performing measurements in the frequency range below 30 MHz for products such as the Strata MX requires the primary use of a magnetic field loop antenna. The measurements documented in the test report submitted for the Strata MX were recorded using a loop antenna manufactured by ARA, Model BBH-500/B, which is capable of calibrated measurements through the frequency range from 300 Hz to 100 MHz.

Question 2: Section 15.31(m) requires two frequencies to be tested due to the requested frequencies. Please provide test data at a frequency near the top of the requested frequency band.

Response 2: I am interpreting your question/comment to mean that a second measurement is being requested in the 1.704 MHz to 10 MHz band because there appears to be multiple operating fundamental frequencies for the product. Our interpretation of this section was that additional measurements in the 1.704 MHz to 10 MHz band are necessary only when the product under test is capable of being operated at alternative or multiple fundamentals within this band. This product is only capable of operating on the one fundamental, which is defined as being centered on 8.2 MHz and having a 1.2 MHz bandwidth. For this reason only one measurement is presented in the report for the fundamental. It represents the maximum emission level recorded over the 1.2 MHz band of the defined fundamental.

It might be helpful to provide a description of the method of operation of the product to help in clarifying our reasoning.

The purpose of this product is to detect the presence of Article Surveillance Tags placed on merchandise as a means to deter theft. By its design, the product uses a pulsed, digital hopping, transmitter to detect the presence of an Article Surveillance Tag. These Tags respond by resonating in the 8.2 MHz region when subjected to a pulsed radio transmissions from this product. A Direct Digital Synthesizer (DDS) on the control module, generates a sequence of 16 discrete frequencies from 7.6 MHz to 8.7 MHz (digital sweep). The list of available frequencies are as follows:

7.600708 MHz	7.673950 MHz	7.747192 MHz	7.820435 MHz
7.893677 MHz	7.966919 MHz	8.040161 MHz	8.113403 MHz
8.186646 MHz	8.259888 MHz	8.333130 MHz	8.406372 MHz
8.479614 MHz	8.552856 MHz	8.626099 MHz	8.699341 MHz

The restricted bands in this area are:

8.291 - 8.294MHz
8.362 – 8.366 MHz
8.37625 – 8.38675 MHz
8.41425 – 8.41475 MHz

Per Section 15.205, the transmitter is not capable of hopping into or operating in, any of the restricted frequency bands.

The generation and transmission of these 16 discrete frequencies constitutes the fundamental, which is centered at 8.2 MHz and has a 1.2 MHz bandwidth. A plot of the fundamental can be found in Section 6.1.2 of the submitted report. This plot shows the overall shape of the fundamental and its associated bandwidth. Although there are 16 individual frequencies listed, together they constitute the fundamental operating frequency or frequency band of the device. They are not 16 individual fundamentals.

Based on the operation of the device, we interpreted the complete transmission pattern as the fundamental, and measured the worst case accordingly. There are no other intentional radiator emissions present within the 1.704 MHz to 10 MHz band that can be attributed to the operation of this product.

3) I must also respond to your comment regarding the ED GIBBONS correspondence. The products designed and manufactured by Checkpoint Systems have always been of the pulsed, digital hopping, transmitter type. Checkpoint Systems approached the FCC with the intention of clarifying the measurement method to be used for their particular products. The letter from Mr. Gibbons describing the procedure to measure the emissions from their transmitters was a result of conversations between the two parties. So I feel I must disagree with your interpretation. The correspondence was meant to describe a measurement method for their particular pulsed digitally swept frequency system that hops on discrete frequencies. We are also aware of the ban on hopping into the restricted bands. This product incorporates the use of a discrete digital synthesizer to generate the particular frequencies to be used to constitute the fundamental. The specific frequencies used by the transmitter are shown above along with the appropriate restricted bands within the 7.6 MHz to 8.7 MHz region. The transmitter is incapable of hopping into the restricted bands.

I hope these responses satisfy your questions. If more information is required, please contact Eric Eckstein (eekstein@checkpt.com) and Nemish Shah (nshah@checkpt.com) at Checkpoint Systems, Inc. and myself (daniel.mis@unisys.com).

Regards,

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