

Subject: Re: NHVWDJ441 comments

Date: Tue, 4 Feb 2003 09:09:15 +0900

From: ykoyama@a-pex.co.jp

To: Dennis Ward <dennis@yosemite.net>

CC: iwasay@a-pex.co.jp, ohkubo@a-pex.co.jp

Hello Dennis,

I reply to comment 2 with regard to FCC ID: NHVWDJ441 on Jan. 24

Entry system ECU has several LF Exciters. However, MCU drives only either one LF Exciter of them. The operation of the system is as follows;

1. When a user sends any command using the portable unit FOB to the entry system ECU from the several yards apart from the automobile, the user pushes any button on the portable unit FOB. Then the entry system ECU sends a inquiry message using the Interior LF Exciter to the FOB. Responding to this inquiry, the FOB sends the ID to the entry system ECU and then the MCU of the ECU drives the corresponding key \$B!G (Bs open or close.

2. When the user, who wears the portable unit FOB, approaches in neighborhood of the automobile and touches it, a proximity sensor located on, for example the door handles and trunk lid senses the user's action and sends a signal to the MCU. The MCU sends the LF-challenge to the FOB through the LF Exciter with antenna. The FOB sends RF-response to the ECU. If the ID is correct, the corresponding door opens or closes depending on the status by driven based on the MCU decision. Above functions are described in the "user manual" submitted.

As described above, the entry system ECU drives only one LF Exciter with antenna. For the testing in accordance with FCC rules and ANSI C63.4, the entry system ECU with the interior LF Exciter, which is expected the highest radiated power, was measured and reported.

Are the above answers acceptable?

Thank you very much.

Best regards,

Yukie Koyama
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 ::

--Original Message 2003/01/30 11:08:46--

Hi Yukie

also, please note that in the explanation below you have not identified the antenna but only said there are 7 that are similar. What type antenna are these? Does the device transmit on more than one at a time. Please see the

original comments item and answer the parts pertaining to this.

Thanks

Dennis

ykoyama@a-pex.co.jp wrote:

> Dear Dennis,

>
> Thank you very much for your contact on the above application. I make a
> reply as follow:
>
> 1. Please see the file "Internal photo2". Page3 shows the circuit board
> under the shield. Is this acceptable?
>
> 2. Contents of Antenna is common among 7 antennas though their shapes are
> bit different.
>
> Each drive circuit of the C/U is basically connected to an independent
> antenna, respectively. Therefore, one drive circuit only drives one
> antenna.
> The communication procedure of the system is as follows;
> When a user wears a portable unit and pushes a switch (named as request
> switch) next to a door knob of an automobile with his hand, an LF antenna
> connected to the door knob transmits 125 kHz signals. Then, when the
> portable unit worn with the user receives the LF signals, the portable
unit
> transmits RF signals with the ID code. The transmitted ID code is
received
> by a tuner in a control unit installed in the automobile and confirms if
> the decoded code is identical to the registered code. If the code is
> identical, the closed door is opened or the opened door is closed.
> In addition the confirmation operation same as the door open is started,
> when the engine is activated by using an engine key. Furthermore, when
the
> user locks the door from outside remaining his portable unit inside the
> automobile, this system operates not to make the door lock.
>
> Best regards,
>
> Yukie Koyama
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>
> --Original Message 2003/01/25 6:18:22--
> Please see comments
> Thanks
> Dennis
> - 1-24-03 NHVWDJ441_ATCB Comments.pdf