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Dec. 11, 2003

Andy Leimer

FCC/OET/EAB

Subject: MDS products Class 2 change Permissive modification

Dear Andy,

Microwave Data Systems is requesting that FCC ID's "E5MDS9790" and "E5MDS4790" currently listed as 11K2F1D, F2D, and F3D have the FCC grants updated to add the emission designator of 11K2F1E.

The F1E designator was requested from a large customer of ours, who is using voice along with our external analog DSP based input.

This mode was initially tested and found to comply with the appropriate FCC regulations, but is was not listed on the FCC grants.

Below you will see all the technical information and email thread text, that support's our request to add the "F1E" designator to the grants.

Please accept this letter for option 1 of your email as our filing for a Class 2 Permissive change modification.

All the FCC module testing was performed by Ultratechnologies in Oakville Ontario Canada, all the test reports are on file with the FCC.

If you have any queries, please do not hesitate to contact me at 585 242-8440:

Yours truly,

Signed:..... Name: Dennis McCarthy .....

Dennis McCarthy
Agency Compliance Engineer
Microwave Data Systems
175 Science Parkway
Rochester NY 14620
Phone (585) 242-8440
Email dmccarthy@microwavedata.com

Hello Dennis,

I have reviewed the Test report for FCC ID: E5MDS9790 and concluded that the data supports the modulation type F1E as you proposed. Section 3.5 states that the FM data modulation was 9600 b/s random data. Section 4.3 states that the factory set the maximum frequency deviation to 3.5 kHz. The BW plot on page 26 shows compliance with the mask for random data with maximum deviation of 3.5 kHz. You have two options:

1) File a Class II permissive change to add 11k2F1E to the line items. This would not require further testing. Internally we call this a Class II permissive modification. A permissive modification is the addition or modification of line items to the Grant when there are no physical or electrical changes to the device. You would need to provide a letter exhibit justifying the addition of the additional line item.

2) If the Grant was in error by listing 11k2F1D instead of 11k2F1E you can contact me and I will have the Grant Set Aside for correction. In this case the emission designators would be F1E, F2D, and F3D.

Please advise me on how you wish to proceed.

Regards,

Andy Leimer
FCC/OET/EAB

-----Original Message-----
From: McCarthy, Dennis [mailto:DMcCarthy@microwavedata.com]
Sent: Thursday, December 11, 2003 8:36 AM
To: Andrew Leimer
Cc: Rich Fabina
Subject: RE: MDS anlaog question

Hi Andy

Thanks for the swift reply, It is nice having another official contact with some senior staff at the FCC to help resolve any questions.

I hope this information below is just what you need for a favorable opinion.

The Transceiver in question is the MDS9790 not the MDS9710, I am sorry this was my typo. Designator is E5MDS9790, I have attached the grant for your information.

You asked:

"You state that the device has an analog voice input. Did the original application have this capability? If not, provide information on how this is implemented. Was the DSP based modulation limiter in the original application or is this circuitry that is being added to the original device?"

Let me start off by informing you that the analog input in question WAS TESTED and it passed. Attached in pdf form, are copied pages from the test report that shows compliance. I have the whole pdf document but it is 26 megs and way to large to email :-)

Yes the initial design had the DSP based limiter in the design, It has always been in the design, the external analog input is what we call "4 wire" audio input. This was designed to accept DTMF tones, or older analog modems, or voice. All 3 of these input types use the same "4 wire" input. I have attached a picture of the back of the radio showing the audio/analog inputs along with the normal higher speed input connectors.

As you know in these cases the inputs are from a controlled source. MDS designed in a DSP based limiter as a safe guard to not over modulate the FCC transmit mask.

The true base function of the MDS9790 is for pure digital data, the transceiver has a built in digital scrambler and digital input pins via a DB25 pin connector. The "4wire" input was designed to allow us to sell this newer device and install into older systems.

Is the TXLEVEL AUTO function always on for voice communication or does the user have to set this mode? Please provide further information on how this change is implemented.

When the user selects the software command "modem none" this disables the internal DSP modulation, and opens the limiter to the "4 wire" analog input at the rear of the radio. Thus the TXLEVEL is controlled by the DSP based limiter.

Our customer the NY State Thruway needs the MDS9790 due to its FULL DUPLEX ability and the fact they can run audio in the full duplex mode.

I have explained to our customer that the MDS9790 is approved for analog but the FCC designator is for "D" data, not "E" telephony "voice"

To prove to our customer that we are compliant, I tested the limiter here at MDS at it still works. The data was supplied to our customer to put his mind at ease. If you would like to see it, just ask :-)

It would be nice if you could drop me note that I can supply to our customer that states the MDS9790 is approved for analog operation using the "4 wire" input and that the "E" is not required for their application.

Thanks for your time Andy, I GREATLY appreciate it

Happy Holidays

Dennis