Tri Luu

From: "McCarthy, Dennis" <DMcCarthy@microwavedata.com>
To: "Dan Huynh (E-mail)" <dan@ultratech-labs.com>; "Tri Luu (E-mail)" <tri.luu@sympatico.ca>
Sent: Thursday, December 11, 2003 12:23 PM
Subject: FCC Class 2 permissive modification change

Tri & Dan
It took a while but I got the formal OK from Andy Leimer at the FCC to file a class 2 change modifcation to the MDS970 and possibly the MDS4790. Pease look over the positive response from Andy and could you please file a class 2 change to the MDS9790 and MDS4790 to add the Designator F1E to both grants.
The mail from me to Andy, and his favorable response are shown below. I just spoke to him, and informed Andy that I would use Ultratech to file the class 2 changes and he was pleased.
Please get me a quote to file these 2 grant changes. No testing is required what so ever. Your initial testing was enough to satisfy the FCC requirements
Let me know if you need anything else from me. I attached my letter to Andy that I am sure will help you !!!!
GOOD NEWS I WOULD SAY. This should be a piece of cake for Dan :-)
Thanks
Dennis

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-----Original Message-----
From: Andrew Leimer [mailto:Andrew.Leimer@fcc.gov]
Sent: Thursday, December 11, 2003 3:04 PM
To: McCarthy, Dennis
Subject: RE: MDS anlaog question

Hello Dennis,

Keep in mind that the Class II permissive modification will require that a Class II application be filed. For other similar applications, the data in the original application must support the addition of the F1E emissions designator.

Regards,

Andy Leimer

FCC/OET/EAB

-----Original Message-----
From: McCarthy, Dennis [mailto:DMcCarthy@microwavedata.com]
Sent: Thursday, December 11, 2003 2:07 PM
To: Andrew Leimer
Subject: RE: MDS anlaog question

Hi Andy
THANK YOU A BUNCH
I am in the process of writing you an official letter requesting option 1 "a class 2 permissive change modification" this seems to be the easiest. (it will be in MSword format and I will send it to you this afternoon)

Also as a caveat here, the other radio in the EXACT same family "E5MDS4790" is exactly the same digital hardware, the only difference is it operates at 450MHz. The front end filters, RF amp and VCO are just retuned to operate at 450MHz.
I mean it is the EXACT same radio except it operates in the 400MHz FCC band.

Knowing this now, and the fact that one customer requested the E designator, I am asking on my letter to you, to add the F1E to the E5MDS4790 also. I would hate to have to go through this again for the MDS4790. All the test reports for the MDS4790 and data are on file also with the FCC and the same lab tested this radio.

If you have any problem me adding the MDS4790 to the letter please feel free to remove the 4790, the document will not be protected.

You made my day Andy :-)
Thanks
Dennis

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-----Original Message-----
From: Andrew Leimer [mailto:Andrew.Leimer@fcc.gov]
Sent: Thursday, December 11, 2003 12:03 PM
To: McCarthy, Dennis
Cc: Rich Fabina
Subject: RE: MDS anlaog question

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

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-----Original Message-----
From: Andrew Leimer [mailto:Andrew.Leimer@fcc.gov]
Sent: Wednesday, December 10, 2003 6:19 PM
To: dmccarthy@microwavedata.com
Cc: Rich Fabina
Subject:

Hello Dennis,

You have two FCC IDs on file:
E5MDS9710 (Part 101) Emissions F1D, F2D, and F3D
E5MDS9710-1 (Part 90) Emissions F1D
The E5MDS9710 was Granted before electronic filing was implemented so there is no record of the exhibits.
I assume that this question is for FCC ID: E5MDS9710 and Part 101. 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?
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.

Regards,

Andy Leimer
FCC/OET/EAB

-----Original Message-----
From: McCarthy, Dennis
Sent: Wednesday, November 19, 2003 7:45 AM
To: Steve Dayhoff; 'Joe Dichoso'
Cc: Miller, Charlie; Nozel, Rick; Natoli, Guy; Trabold, Chris; Pflumm, Jim
Subject: FCC rule clarification question. I would appreciate your input.

Hi Steve and Joe
It has been a long time since I have requested some clarification from you, and was hoping that you could straighten out a shady area of the FCC rules for our customer and myself.

I mailed you both, because I was not sure who to address this type of question to.
MDS currently manufactures a wide variety of SCADA narrowband transceivers all using the exact same DSP based technology, the unit in question is MDS9710.

FCC Identifier. E5MDS9710 the FCC designator is 11K2F1D, F2D, F3D

Our radio's are capable of receiving external analog input and modulating the transmit carrier by means of DSP based modulation limiter.

When this DSP limiter is set to "TXLEVEL AUTO" the transmit mask limits can NEVER exceed the FCC limit.
The external audio is routed into the DSP, digitized, then sent through a modulation limiter, and output onto the transmit carrier as audio.

As stated before this audio can not be adjusted above the FCC legal mask for part 101, 928-960MHz.
We are being asked by our customer the "New York State Thruway Authority" to carry the F1E designator for audio FM modulation. I feel as the compliance engineer for Microwave Data Systems that we do not have to retest each product per the FCC class 2 change to carry the 11K2F1E designator, based on the above technical limitations.

I believe we are grand fathered in, since the rules changed in the late 1990's, thus alleviating a $3-4 thousand cost burden per product to MDS.

I am requesting your clarification in this matter guys. I really appreciate you taking the time to review my request and look forward to your response.

Regards
Dennis
Picture (Metafile)
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