

From: brian sutton [bsutton@navini.com]  
Sent: Thursday, March 14, 2002 10:52 AM  
To: Tom Tidwell  
Subject: FW: MMDS Response Station

Submit it to TCB! See email below!

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

From: Robert J. Ungar [mailto:ungar@fr.com]  
Sent: Thursday, March 14, 2002 10:41 AM  
To: 'brian sutton'  
Cc: Terry Mahn  
Subject: RE: MMDS Response Station

Brian,

The TCB exclusion list states that fixed MDS transmitters under Part 21

do not qualify for TCB approval. But your little response station is a mobile transmitter. It is considered mobile because it is "designed to be used in other than fixed locations and in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement." (Sec. 2.1091(b)) The categories of mobile transmitters not qualifying for TCB approval on the exclusion list do not apply to your response station, including the category that excludes from TCB approval transmitters operating with co-located antennas - we've already checked with the FCC and e-mailed you about that. So, all in all, it looks like you have a mobile transmitter that is entitled to be approved by a TCB. Please call if you have any questions.

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

From: brian sutton [mailto:bsutton@navini.com]  
Sent: Thursday, March 14, 2002 12:05 AM  
To: Robert J. Ungar; brian sutton  
Cc: Terry Mahn  
Subject: RE: MMDS Response Station

Bob,

I was looking over the exclusion list for TCB involvement. (June 12, 2000)

it lists

(c) transmitters that operate as "subscriber" units under  
(i) Part 21 subpart K, MDS

I believe this is our 2.6 CPE? Am I missing something?

Thanks,  
Brian

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

From: Robert J. Ungar [mailto:ungar@fr.com]  
Sent: Friday, March 08, 2002 1:42 PM  
To: 'bsutton@navini.com'  
Cc: Terry Mahn  
Subject: MMDS Response Station

I'm going to forward another e-mail, this time from Tim Harrington at the FCC Lab. Terry asked him whether a TCB could certify a Pt 21 transmitter with multiple antennas as long as only one antenna would be operating at a time and he said yes. But he raised two issues: 1. Whether the transmitter was fixed. 2. Does Pt 21 permit multiple antennas?

First, Pt 21 defines an MDS response station as a fixed station. Yes, I know someone might take yours outside with a laptop, but by definition, it is a fixed station.

Second, I can't find anything in Part 21 that says you can't use multiple antennas, and in our earlier correspondence with Joe Johnson, we told him what you were doing and he didn't blink.

So, on balance, there seems no reason, why with two attached e-mails now, you can't get certificated by a TCB. It is always possible that the guys at the Lab will have questions, but this would surely happen anyway if you submitted the application directly to them.

From: Robert J. Ungar [ungar@fr.com]  
Sent: Friday, March 08, 2002 9:16 AM  
To: 'bsutton@navini.com'  
Subject: FW: More on directive antenna

Tom,

My lawyers asked the FCC about a TCB approving our 3 antenna/ One Tx. I'm sure there will be questions but let's try submitting it to the TCB with this email attached. Please review the documents and let's try to get this thing out Monday or Tuesday at the latest.

Thanks,  
Brian

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

From: Robert J. Ungar [mailto:ungar@fr.com]  
Sent: Friday, March 08, 2002 1:43 PM  
To: 'bsutton@navini.com'  
Subject: FW: multi-antenna one-Tx

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

From: Terry Mahn  
Sent: Friday, March 08, 2002 2:31 PM  
To: 'Tim Harrington'; Terry Mahn  
Cc: Joe Dichoso; Rich Fabina; Robert J. Ungar  
Subject: RE: multi-antenna one-Tx

Thanks Tim for your prompt reply....Terry

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

From: Tim Harrington [mailto:THARRING@fcc.gov]  
Sent: Friday, March 08, 2002 2:17 PM  
To: mahn@fr.com  
Cc: Joe Dichoso; Rich Fabina; ungar@fr.com  
Subject: multi-antenna one-Tx

Hi Terry

Based on your description, there may not be an RF exposure issue here for only one antenna in use at a time. Assuming this is a fixed transmitter, then TCB Exclusion List Transmitter Category I) or II) applies. Possibly exposure conditions will need to be determined at time of licensing. If needed Bob Cleveland may be able to help with questions about exposure issues for sites. You will also need to make sure Part 21 allows multi-antennas with one-Tx.

Best Regards

Tim Harrington

>>> Terry Mahn <mahn@fr.com> 03/08/02 10:06AM >>>

Tim,

A client is trying to determine whether a TCB can certify a licensed transmitter (Part 21) that features multiple antennas. The reason for the use of multiple antennas is so the device can "sense" where a base station signal is the strongest and then respond via the antenna which optimizes the telecom link. The transmitter will use only one antenna at time -- that is to say each discrete transmission from the device will go out over one and only one antenna. We read the Commission's guidance on TCB Approval Procedures as allowing TCBs to certify this type of device. We seek your confirmation as to this understanding.

The client is trying to expedite certification and would like to send its application in as soon as possible so your prompt response to this email will be most appreciated. Regards.

Terry

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

From: Joe Johnson [mailto:jjohnson@fcc.gov]

Sent: Thursday, March 07, 2002 5:30 PM

To: ungar@fr.com

Subject: Re: More on directive antenna

Bob, Keith Larson and I concur with you that the antenna pattern in your attached email can be considered "directional" and meets the requirements for directionality for response station receiving antennas. As you know, irrespective of the actual pattern of the response station receiving antenna, it is treated, for interference protection purposes, as if it had the pattern of the reference antenna in Rule Section 21.902.

>>> "Robert J. Ungar" <ungar@fr.com> 03/06/02 03:17PM >>>

As I recall, it was your opinion that a MMDS response station antenna with more than 3 dB gain in one direction would be considered a directive antenna. I am attaching a plot of the antenna our client is proposing to use. According to the client, the antenna has a 3.8 dBi gain in one direction with at least a 5 dB front to back ratio. Can you please confirm that you believe such an antenna to be directive? The client is at the stage of bending metal and seeking certification and needs to be reasonably sure that an FCC expert has looked at this. Thank you so much for your help.

<<2.6 3.pdf>>