

From: Terry Mahn [mahn@fr.com]  
Sent: Wednesday, November 05, 2003 10:49 AM  
To: 'randy.clark@ckccertification.com'  
Cc: Terry Mahn; Robert J. Ungar  
Subject: FCC Letter on Omni Test Issues

Randy, per our discussion today...Terry

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

From: Julius Knapp [mailto:jknapp@fcc.gov]  
Sent: Wednesday, April 10, 2002 12:52 PM  
To: ungar@fr.com  
Cc: Bruce Franca; Ed Thomas; Kenneth Nichols; mahn@fr.com  
Subject: Re: FW: Navini

Bob & Terri: Your e-mail accurately summarizes the agreement we discussed by telephone on Monday afternoon. The FCC lab will expedite processing of the application when it is filed. Thanks, Julius Knapp, Deputy Chief, FCC Office of Engineering and Technology

>>> "Robert J. Ungar" <ungar@fr.com> 04/10/02 09:11AM >>>  
Here it is again.

> -----Original Message-----

> From: Terry Mahn  
> Sent: Monday, April 08, 2002 6:34 PM  
> To: 'Julius Knapp'  
> Cc: Robert J. Ungar; Terry Mahn; 'sai subramanian'; brian sutton  
> Subject: Navini

>

>

> Julie,

>

> Thank you for your telephone call earlier today proposing a  
> resolution of Navini matter. We have now spoken with Navini and they  
> are in agreement with the terms and conditions that you and Ed Thomas  
> outlined. Based on our discussions, it is our understanding that the  
> Navini (8 transmitter) beamforming array will be regulated under Part  
> 15 as follows:

>

> 1. The individual transmitters in the system will be subject  
> to the technical requirements set forth in Section 15.247:  
> 2. Section 15.31 will not apply;  
> 3. The system will be considered "point to point" under Section  
> 15.247(b)(3)(i) and (iii);  
> 4. Total antenna gain per transmitter will be computed as the sum of  
> (a) the actual gain of the antenna used (here, 12dBi), and  
> (b) the beamforming gain (18dBi) of the system determined by the  
> formula  $20\log_{10} N$ , where N is the number of transmitters in the array;  
> and

> 5. The peak output power for each transmitter will be reduced per  
> Section 15.247(b)(3)(i) based on the total antenna gain, however, a  
> "phase coherence loss" correction factor of 2dB for the 8 transmitter  
> array will be subtracted from this reduction .

>

> In accordance with the foregoing, the peak output power of each  
> transmitter in the Navini beamforming array will be reduced as  
> follows:

>  
>       Total antenna gain(12 + 18)               30dB  
>       Free gain per 15.247(b)(3)               - 6dB  
>       Gain subject to power reduction               24dB  
>  
>       Power reduction per 15.247(b)(3)(i)       8dB  
>       Correction for coherence loss               -2dB  
>  
>       Total reduction in transmitter power       6dB

> I trust the foregoing properly reflects the understanding of the  
> Commission's staff as we discussed earlier today. Please let me know  
> by return email if you are in agreement. Navini would like to  
> communicate this information to its Board of Directors this week  
> during its Wednesday meeting. Thank you again for your assistance.  
> Regards.

>  
> Terry

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