Errol,

Below is your latest comments and concerns regarding GNW-24000 (EA93236) with Metricom's reply and comments.

Please let me know if there is anything else you require.

David Waitt
408 399 8126
david@metricom.com
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To: David Waitt,
From: Errol Chang
echang@fcc.gov
FCC Application Processing Branch
Re: FCC ID GNW24000

Applicant:	Metricom Incorporated
Correspondence Reference Number:	10100
731 Confirmation Number:	EA93236
Date of Original E-Mail:	10/12/1999

1. The revised 731 form is indicating 794 mW output for the Network Radio operating at 2.4 GHz. The measured output data submitted around August 99 was showing 416-467 mW for the Network Radio at 2.4 GHz, therefore, 467 or 470 mW will be what the data can support.

<METRICOM>
Metricom will repeat the applicable tests on a network radio that has a higher transmit power and submit a permissive change request in the very near future. Until that time, the transmit power level stated above is acceptable.

2. Item #5 of previous correspondence - final version of installation instruction to be provided, please submit info.

<METRICOM>
It has become apparent that Metricom does not have an "Antenna Installation Guide" due to the fact that the installation of the Ethernet radio antennas at the Wired Access Points (WAPS) is a little different at each installation. (When I offered this document, I spoke to soon and offered something Metricom does not have.) Some of the antennas are hung over the front of a façade on the building rooftop others are mounted on poles secured to the roof in some manner, others are installed on communications towers which makes a

What Metricom has done is to add a reference to Metricom's Health and Safety plan for instructions as to what signs to place at the site and where to place them. The edited page is included in this document.

Again, EVERYONE, who has access Metricom equipment at a WAP site will be made aware of the dangers of RF exposure as outlined in Metricom's Health and Safety plan. The people installing the WAPS will be directed to installs the warning, caution and Danger signs as outlined in the Metricom Health and safety document.

3. Appropriate grant conditions for ensuring RF exposure compliance will be included, according to proposed conditions and installation instructions (to be provided).

<METRICOM>
See comments below regarding the proposed statement.

4. (FYI) In the future, please follow procedures similar to section 2 of 97-01 edition of OET Bulletin 65 (around page 35) to determine MPE compliance for multiple or co-locating transmitting sources.

NOTE: As indicated in item #3 above the language similar to that given below will be placed on the grant following conditions will be placed on the grant. These conditions is based on Metricom's commitment up to this point and may change to reflect anything new.

"This device includes Network Radio (NR) and Ethernet Radio (ER). NRs are for utility pole-mount only. ERs are for installation at the top of non-residential buildings and structures. Employees, contractors and consultants of Metricom must receive proper training to satisfy MPE requirements before gaining access to any active NR and ER. Metricom must inform all responsibility parties in writing to ensure persons gaining access to NR sites are required to maintain a minimum separation distance of 34.5 cm from active NR antennas to meet MPE requirements. RF exposure warning signs showing a minimum separation distance of 51 cm must be posted at access points to ER antennas; when ER antennas are co-located with other radio-frequency transmitting sources, the warning signs must include separation distances appropriate for meeting MPE requirements based on worst-case RF exposure conditions resulted from all RF transmitting sources located at the particular site."

<METRICOM>
Metricom feels that the wording of the statement above should be modified.

The last sentence states:
“RF exposure warning signs showing a minimum separation distance of 51 cm must be posted at access points to ER antennas; when ER antennas are co-located with other radio-frequency transmitting sources, the warning signs must include separation distances appropriate for meeting MPE requirements based on worst-case RF exposure conditions resulted from all RF transmitting sources located at the particular site."

Metricom feels that it cannot comply with this statement. The Ethernet radios are installed as part of a Wired Access Point (WAP) installation. WAPs are installed on commercial building rooftops and on commercial communications towers. These types of communications sites typically have several antennas (paging transmitters, cell sites, amateur radio repeaters...) that are not under Metricom’s control and about which Metricom has no technical information. Therefore it is not possible for Metricom to install signs specifying a MPE distance for ALL of the transmitting sources at a particular site.

Further, if Metricom were to install Ethernet radios at a site where no other communications equipment was present at the time of the installation and place signs stating a MPE distance at the access point to the site, the MPE distance on the sign would no longer be valid once additional communications equipment was placed at the site.

Metricom advocates placing (OSHA approved) warning, caution and danger signs as called out in the Metricom Health and Safety plan and placement of a sign stating the MPE distance near Metricom's antennas.

Metricom proposes the last sentence be modified to:
"RF exposure warning signs showing a minimum separation distance of 51 cm must be posted in close proximity to ER antennas"

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 60 days of the original e-mail date may result in application dismissal pursuant to Section 2.917 (c) and forfeiture of the filing fee pursuant to section 1.1108.

DO NOT reply to this e-mail by using the Reply button. In order for your response to be processed expeditiously, you must upload your response via the Internet at www.fcc.gov, Electronic Filing, OET Equipment Authorization Electronic Filing. If the response is submitted through Add Attachments, in order to expedite processing, a message which informs the processing staff that a new exhibit has been submitted must also be submitted via Submit Correspondence. Also, please note that partial responses increase processing time and should not be submitted.

Any questions about the content of this correspondence should be directed to the e-mail address listed below the name of the sender.

WAP Element	ISM	WCS
Indoor cabinet configuration*	Single cabinet	1 Cabinets for 4 antennas 2 Cabinets for 8 antennas
Indoor cabinet dimensions *	48"h x 24"w x 32"d weight 530 lbs. Note: If site requires ISM collector cabinet, provisions must be made for a collector cabinet size of: 67" x 22" x 32".	67" x 32" x 36"
Outdoor cabinet configuration *	Single cabinet 57 x 40 x 33	2 Cabinets accommodate either the 4 or 8 antenna configuration.
Outdoor cabinet dimensions (with A/C) *	57"h x 40"w x 33"d weight 850 lbs.	4 Antennas 94"h x 35"w x 56"d weight 1233.25 lbs. 8 Antennas 94"h x 70"w x 56"d weight 2716.25 lbs. 8 Antennas 94"h x 105"w x 56"d weight 3187 lbs.
Ethernet Radio	1 per ISM antenna. Dimensions: 12" x 8" x 3" Weight: 10 lbs.	
Power requirements:	INDOOR Two 208/240 VAC single-phase-15 amp dedicated circuits 2 Hots and a ground (100 amp service total for expansion if available) OUTDOOR One 208/240 VAC single-phase-50 amp dedicated circuits 2 Hots and a ground and neutral (100 amp service total for expansion if available)	INDOOR FOUR SECTOR Four 208/240 VAC single-phase 20-amp dedicated circuits (100 Amp service total) INDOOR EIGHT SECTOR Eight 208/240 VAC single-phase 20-amp dedicated circuits (200 Amp service total) OUTDOOR FOUR SECTOR One 208/240 VAC single-phase-120 amp dedicated circuits 2 Hots and a ground and neutral OUTDOOR EIGHT SECTOR One 208/240 VAC single-phase-240 amp dedicated circuits 2 Hots and a ground and neutral
Interconnect Requirements	Preferred: Fiber Choice 2: 4 T-1 lines if fiber not available Choice 3: Microwave (24" dish)	Preferred: Fiber Choice 2: 4 T-1 lines if fiber not available Choice 3: Microwave (24" dish)
Fiber Mux Cabinet Dimensions*	84" h x 36" w x 26" d Note: Cabinet dimensions vary per LEC/CLEC	84" h x 36" w x 26" d. Note: Cabinet dimensions vary per LEC/CLEC
Required RF Signage & Personal RF monitors.	Refer to Section "Health & Safety for RF Exposure"	Refer to Section "Health & Safety for RF Exposure"

***Note:**

1. **When determining lease space, all cabinets require a minimum of 36" front and 36" rear clear space for door swing and access.**
2. **Occasionally an ISM and WCS site may be colocated at the same location.**
3. **WCS indoor and outdoor cabinet design dimensions have not been finalized.**