

PRODUCT LABELING

Figure 3.1 FCC ID Label

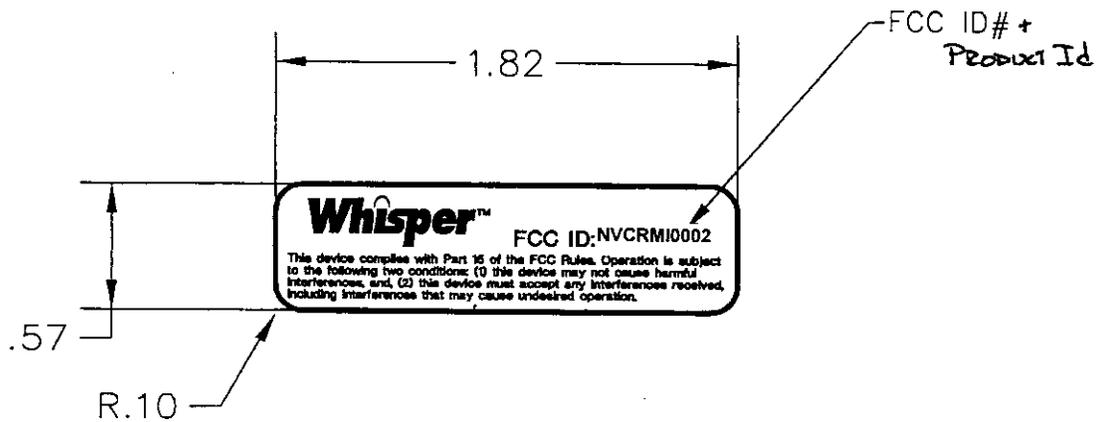


Figure 3.2 Location of Label on EUT

Refer to photos of tested EUT

TEST INSTRUMENTATION USED

Test Equipment	Manufacturer/ Model No.	Serial No.	Last Cal.
EMI Receiver	HP 8546A	3325A00155	11/04/97
RF Filter	HP 85460A	3330A00170	11/04/97
LISN	EMCO 3825/2	109804	04/12/97
Antenna	CHASE CBL6112A	2139	11/04/97
EMI Receiver	HP 85460A	3330A00170	10/29/97
Preamplifier	HP 8449A	2749A00138	06/27/97
Antenna	EMCO 3115	1060	01/18/97
High Pass Filter	Minicircuits NHP 900 & NHP 1000	N/A	N/A

TEST PROCEDURE

Conducted Emission Test

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked, and these signals are then quasi-peaked . The frequency range investigated was 0.45MHz to 30MHz.

Radiated Emission Test

The initial step in collecting radiated data is a EMI receiver peak scan of the measurement range at the Engineering site. Significant peaks are marked, and these signals are then quasi-peaked at the open area test site. The frequency range investigated is 30MHz to 2000MHz.

The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor is given as follows:

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where:

- FS = Field Strength
- RA = Receiver Amplitude
- AF = Antenna Factor
- CF = Cable Attenuation Factor
- AG = Amplifier Gain

Assume a receiver reading of 52.5 dB μ V is obtained. The Antenna Factor of 7.4 and a Cable Factor of 1.1 is added. The Amplifier Gain of 29dB is subtracted, giving a field strength of 32dB μ V/m.

$$FS = 52.5 + 7.4 + 1.1 - 29 = 32 \text{ dB}\mu\text{V/m}$$

DISCLAIMER NOTICE

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FCC Warning Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it can cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Determine if the equipment does cause interference to radio or television reception, by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

1. Where it can be done safely, reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This device is covered by FCC rules for a Class B digital device. As required by FCC regulations, the following is provided for the information and guidance of the user.

The Canadian Department of Communications requires the following information be provided in this manual

Notice:

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Equipment tested and found to be compliant with FCC Part 15, as a Class B digital device, will be accepted as being compliant with the Canadian DOC standard.

Notice:

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. This equipment must also be installed using an acceptable method of connection. In some cases the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with these conditions may not prevent degradation of service in some situations.

Repair to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or any equipment malfunctions, may give the telecommunications company cause to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connect together. This precaution may be particularly important in rural areas.

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Remote Meter Interface - Electric

TRUE2WAY
RELIABLE



Automatic Meter Reading

The True2Way™ remote meter interface (RMI) reads, stores and transmits meter data and alarms over the Whisper™ fixed-base wireless network. The electric RMI can be attached to popular commercial, industrial and residential meters. With appropriate host software, the RMI can supply both scheduled and on-demand communications. Scheduled RMI transmissions are normally used for regular meter reads or status alarms. Unscheduled communications can be used to define power outage areas in near real-time, provide on-demand reads and support other value-added services.

The Whisper True2Way RF protocol accurately captures energy use data, ensures reliable communications with the host, and permits the remote reconfiguration of RMI settings from a central location. Only Whisper's True2Way RF network offers cost-effective AMR solutions for today with the potential for unlimited innovation tomorrow.

Features

- Adjustable meter read intervals: 1,5,15,30, and 60 minutes
- Time-stamped interval data for load profiling, time-of-use and real-time pricing
- RMI clock synchronization ensures accurate aggregate reads
- Storage of 240 historical meter reads ensures against lost data
- All data transmissions are acknowledged end-to-end across the True2Way network
- RMI functions (e.g. read intervals, RMI reporting cycles) are programmable over the network
- Power outage and tamper detection
- Time-of-use and real-time pricing support
- On-demand meter reads
- Remote service connect/disconnect support
- Resumes normal operation upon power restoration
- Nominal communication range of 1.5 miles depending on topography
- Line-power low voltage condition alarm

Whisper

Meter Support

Residential Meters

- ABB/Westinghouse D1, D4, AB1
- GE I-70, I-60, I-55S
- Landis & Gyr/Duncan MS, MX, MS-II, MX-II
- Schlumberger/Sangamo J4, J5

Solid State Polyphase Electric Meters

- ABB/Westinghouse Alpha
- Schlumberger/Sangamo Vectron

Whisper intends to provide RMI's for popular residential, commercial, and industrial electric meters. Contact Whisper for more information on the availability of specific models.

Technical Specifications

Description	Medium Power
Frequency Range	902-928 MHz
Modulation	Frequency Hopping Spread Spectrum, FSK
Output Power	+20 dBm
Temperature Range	-40° to 85°C, -20° to 70°C for Solid State Meter
Data Packet Length	Maximum of 60 bytes
Data Rate	4 kbps Outbound (Tx), 2 kbps Inbound (Rx)
Power Supply	240 VAC Line-Powered ±20%
Channel Capacity	128
Channel Spacing	180 KHz
Deviation	± 5 KHz
Frequency Accuracy	± 10 ppm

This electric RMI was developed with the assistance of the Gas Research Institute

True2Way AMR Networks

The Whisper True2Way AMR network meets the most demanding requirements of forward thinking utilities, energy service providers, and independent metering service providers who intend to compete in deregulated energy markets. The Whisper True2Way, fixed-base RF AMR network is the most cost-effective way to measure electric, water and gas consumption and deliver innovative value-added customer services. Load management, time-of-use and real-time pricing, synchronized and time-stamped aggregate reads, and messaging are only a few examples of the power of real two-way communications.

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