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Tim Johnson
American TCB

April 24, 2003

RE: FCC ID: POZWAU0403110002

Dear Tim,

In your latest correspondence you asked for the following information:

> 1) Regarding the Frequency Stability, you stated that a 16 MHz Oscillator that is generated from the internal previously approved indoor unit is used for stabilization of the fundamental of the outdoor unit. Reviewing the block diagram for the previously approved indoor unit, this oscillator appears to only be used for the external unit now being approved, but not for the indoor unit which was previously approved. Therefore stability of this reference oscillator has not been shown. Additionally, it is uncertain how frequency error that occurs at the 16 MHz reference oscillator translates to frequency error at the fundamental. Please provide test data for 2.1055 (-30 degrees C to +50 degrees C in 10 degree increments with adequate soak times between, also 85% - 115% variation in input voltage to the indoor unit at 20 degrees C). Note: Due to the nature of the system, it would be recommended to subject both the indoor and outdoor unit to the temperature variation. Additionally, this information may be provided by the manufacturer.

In response, Soma have provided the following information:

> *The transmit fundamental frequency is set by a phase locked loop (synthesizer) that is phase locked to the external 16MHz reference oscillator. The chain of referencing is the following: the internal 16MHz is locked to the base station (oven/GPS stabilized <<0.1ppm), the external 16MHz is phase locked to the internal 16MHz oscillator, the transmit LO is phase locked to the external 16MHz oscillator.*
>
> *Thus, the SAU transmit frequency is precisely controlled by the Base Station's transmitted signal and is better than +/-0.1ppm. The transmit frequency is 2307.5MHz thus the frequency error is less than +/-231 Hz. The SAU cannot start to transmit until it has locked on to a base station and therefore is dependent on the accuracy of the signal transmitted by the Base Station to determine the stability of its transmission.*
>
> *As the base station is already approved by the FCC and frequency stability for the base station directly affects that of the SAU, Soma do not consider it necessary to evaluate the stability of the SAU over the temperature extremes.*

Hopefully this answers the requirements for demonstrating frequency stability without having to perform stability tests on the SAU, and would appreciate your comments on this.

Please contact me via doc@elliottlabs.com if you require more information.

Regards,

for Juan Martinez
Sr. EMC Engineer