

# TEM Consulting, LP

## Memorandum

**Date:** October 21, 2005

**To:** PCTEST TCB

**From:** Stephen Berger

**Phone** (512) 864-3365

**Subject:** FCC ID L82-S445 – Response to Questions Received Sept. 14, 2005.

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The following provide responses to the questions we received on Sept. 14, 2005. The original question is repeated with our response given after it.

1. Section 15.323(c)(5) requires that the EUT have at least 40 duplex channels in order to use the LIC method when spectrum is otherwise unavailable. Section 5.15.2 of the test report indicates that the EUT has only 30 duplex channels. Therefore, the EUT may only use the LIC method on available spectrum, as determined by Sections 15.323(c)(1)-(4). If no spectrum is available, as determined by these Sections, the EUT may not access any channel, and the LIC method may not be used. Please confirm that this is the case.

Our statement in the test report Section 5.15.2., that we only use  $6 \times 5 = 30$  duplex channels is not completely correct. We offer, according to the DECT standard, 12 duplex slots per system. Each base station may access one of 12 duplex channels, but simultaneously only 6 duplex channels. Therefore we would like to change our statement to  $12 \times 5 = 60$  duplex slots.

2. Because the EUT does not meet the requirement for using the upper threshold, per Section 15.323(c)(5), Clause 8.1.2(b) of C63.17 requires that the interference level equal the lower threshold plus  $U_M$ , or,  $-81.5 \text{ dBm} + 6 \text{ dBm} = -75.5 \text{ dBm}$ . However, Section 5.14.3 of the test report indicates that an interferer level of  $-40 \text{ dBm}$  was used in the C63.17 Clause 8.1.2(b) test. Please retest using an interferer level of  $-75.5 \text{ dBm}$  and submit new data.

The requirement of using a minimum of 40 duplex channels is met (Question 1), and therefore the upper threshold and LIC may be applied. The indicated  $-40 \text{ dBm}$  is a mistake and should have been  $-61 \text{ dBm}$  ( $T_U + U_M$ ). The difference is due to external attenuation in the test setup not being incorporated.

3. Section 5.22 of the test report indicates that the RSSI value of each antenna, the pcb antenna and the inverted-F antenna, is measured at the beginning of each receive burst (does this mean each 10 ms frame?), the greater of the 2 is then used for receive and transmit. Are both antennas also used for the required 10 ms monitoring period (Section 15.323(c)(1)? If not, please explain how compliance with Section 15.323(c)(8) is achieved, since the 2 antennas, based on their stated gains, do not yield equivalent reception.

The power level received by the two antennae is measured during the preamble, which occurs at the beginning of the RX burst. Within a 10ms DECT frame there are 12 possible RX slots and 12 possible TX slots. Within the preamble, which occurs at the beginning of each RX burst the RSSI value of each antenna is measured. The preamble is 32 bits long and 16 bits, 8 bits for each antenna, are used for the antenna selection process. The antenna with the best RSSI value is selected. Although the two antennae

have different characteristics it may happen, due to external conditions like reflections, that the one antenna receives more power than the other. This selected antenna then also is used during the corresponding TX slot and therefore complies to Section 15.323(c)(8).

4. In order to address Section 15.319(i), please submit a statement averring that, since the base station is a mobile device (refer to the instructions in the manual that state that a minimum 20cm separation distance must always be maintained between the antenna(s) and all persons), and the ERP is less than 3W, the base station is categorically excluded from routine environmental evaluation for RF exposure, pursuant to Section 2.1091(c).

According to 47 CFR §2.1091 the base station is a mobile device. The base station is used in such a way that a separation distance of at least 20 centimeters is maintained between the transmitter's radiating structures and the body of the user or nearby persons. The base station ERP is less than 3W and therefore the base station is categorically excluded from routine environmental evaluation for RF exposure.

5. Please correct the following (apparent) typos on the Certificate of Compliance cover sheet: (a) the units for peak transmit power should be dBm, not dBV/m, and (b) the maximum measured power is 20.6 dBm, not 20.5 dBm.

Revised Certificate of Compliance has been prepared and submitted.

6. FYI: Please be aware of the following typo on p.20/65 of the test report: the psd limit is found in Section 15.319(d), not (c).

A revised test report has been prepared and submitted.

7. FYI: Clause 6.1.5 of C63.17 (psd measurement) calls for VBW equal to or greater than 3 times the RBW, zero span, sample detection averaged for 100 sweeps. These settings were not used in the test report, however, since the settings used are likely to have produced results equal to or greater than those the Standard's setting would have produced, it is acceptable.

A revised test report has been prepared and submitted.