Gentlemen:

This letter addresses the issues raised in your fax dated October 11, 2001 regarding FCC ID: KH7-MRLN-A128

Issue 1:

A new exhibit “**RequestForConfidentiality.pdf**“ has been added

Issues 2 and 3:

Exhibits "**Declaration of Identity**", "**Block diagram for Ericsson Bluetooth modules ROK 101 007 and ROK 101 008**", "**Processing Gain Test Setup**" and "**PROCESSING GAIN MEASUREMENT**" are Ericsson documents provided in support of the following claim regarding the processing gain measurements for Merlin:

CATC's Merlin uses the same radio chip (PBA 313 01/2) as is used by Ericsson in their own Bluetooth module (FCC IDs CGK8001001 and PNI8001001; see **BlockDiagram.pdf**). The radio chip implements the Gaussian Frequency Shift Keying modulation (GFSK; BT product of 0.5) required by the Bluetooth specification. There is no control over the modulation by the baseband controller therefore the processing gain for Merlin is the same as the one documented by Ericsson for their module (see “**Report on processing gain results.pdf**“ and **CoverLetter3.pdf**).

Neither one of the ROK modules is actually installed in the Merlin device (but as stated above Merlin is using the same radio chip). Photos of the modules should therefore not be needed.

Issue 4 and 5:

With an RF output power of under 3 mW and an antenna gain of less than 3dBi, we will categorize this device as safe to Transmitter Category V(bii) per the TCB Exposure Procedures of 11/15/2000. A new exhibit "**RF Safety User Information.pdf**" shows the modified RF safety instructions section of the Merlin manual.

The radio chip used in Merlin has (as specified by the Ericsson) a very wide possible range of output power. +4.5 dBm or about 2.8 mW is the maximal value and was therefore used by CATC in the RF Exposure document to cover the worst case scenario. Actual measurements showed much lower values (102.8 dBuV or about -4 dBm). A new exhibit “**RF Hazard Distance Calculation.pdf**“ has been added which shows calculations for both values.

Issue 6:

The hopping sequence for any given Bluetooth device that is not part of a piconet depends on its Bluetooth clock and its unique Bluetooth address. As described in section 10.3 of the Bluetooth specification (see exhibit **TransmitterSync.pdf**) every device has its own free running clock. The fact that both clock and address are unique to a device guarantee that the hopping sequences of two devices will not be synchronized (see exhibit **Hopping2.pdf** on how the sequence is generated)

Devices (up to 8) that form a piconet on the other hand are synchronized to the piconet master and they use a Time-Division Duplex (TDD) scheme to guarantee that there are never two devices transmitting at the same time (see exhibits **Hopping1.pdf**, section 2.2 and **MasterControl.pdf**, section 10.8.5.1)

Issue 7:

The pseudorandom hopping sequence depends on the Bluetooth clock of the piconet master and part of its Bluetooth address. The details of the sequence computation are described in section 11 of the Bluetooth specification (see exhibit **Hopping2.pdf**)

New exhibits **HoppingSample1.pdf**, **HoppingSample2.pdf** and **HoppingSample3.pdf** have been added. Each document shows a sample hopping sequence (covering 1 second) for a different Bluetooth Device Address.

Issue 8:

This issue is addressed by section 2.2 of the Bluetooth specification. Every transmission starts on a new frequency (defined by the hopping sequence as described above). If a transmission covers several (up to 5) frequency hops, the frequency remains fixed for the whole packet. The hop frequency in the first slot after a multi-slot packet uses the frequency as determined by the current Bluetooth clock value (see exhibit **Hopping1.pdf** for more details)

Issue 9:

Synchronization of transmitter and receiver is performed during the setup of a piconet (see exhibit **TransmitterSync.pdf**, section 10.3). Once a piconet is established all the slave devices follow the same hopping sequence based on the clock and address of the piconet master. The master always has full control over the piconet (see exhibit **MasterControl.pdf**, section 10.8.5.1). Slave devices stay synchronized to the master by regularly (i.e. every time they receive a packet from the master) updating their clock offsets.

Issue 10:

A new exhibit "**CATC Merlin Power Density Document.pdf**" has been added