

Operation and Modulation for LoCate

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Oct , 2001

The LoCate is compatible with standard AMPs “analog” (Advanced Mobile Phone system – from Bell Laboratories), which is covered in EIA IS-19. We use EIA IS-136 specifications which includes other modes but only use the AMPs, and test to EIA-137 test specifications. An overall control of the cellular phone’s AMPs operation is done with a format called “Microburst” which is defined by Aeris and is approved for use by the subscribing Network Carriers.

Control Channel:

The control channel operation is that of a normal “analog” phone communication by the Manchester modulation specified by IS-136. The information transfer is that of “Microburst” which is defined by Aeris. There is no difference in the communication within this mode from that of a normal “analog” phone on the control channel.

The information transfer in “Microburst” is by the mobile calling PSTN (Public Service Telephone Network) numbers according to the information being transferred. For example, calling a number will indicate that the mobile calling that number has obtained a valid GPS (Global Positioning Service) location. The modulation and modulation content on the Control Channel by the “Microburst” cellular telephone will not be distinguishable from that of a AMPs cellular telephone.

Voice Channel:

Once the “Microburst” information is transferred by calling a number, the called number does a momentary connection onto the Voice Channel to allow the Cellular Subscriber Network to charge for the information transfer. This consists of a short (about 15 seconds) period on a Voice Channel where there is no audio modulation, and the SAT (Supervisory Audio Tone) is sent per the IS-136 requirement. The Cellular Subscriber Network limits the call duration (for billing purposes) and terminates the call by the standard signaling methods.

Future products will have a Voice Channel Modem installed, this modem is shown as DNP (do not populate) on the LoCate schematic and is not populated on the CCA. On future products, if the modem is to be used the unit will be operated in standard AMPs format, and the modem will communicate on the Voice Channel through the PSTN to another modem via standard modem protocols.