<u>**Operational Description for the Olympia DCP201Cordless Dataphone**</u>

<u>**Introduction**</u>

The CDP (Cordless Dataphone) is a cordless telephone with a built in modem and USB capability. The CDP is a combined wireless voice and data product using high power Bluetooth V1.1 wireless standard for worldwide operation. The base station can have up to 4 handsets registered. Using USB to Bluetooth interface (otherwise known as a USB dongle), wireless web surfing can be performed with the base using the built in V90 modem. Also some PDAs that have Bluetooth capability can be used for wireless web surfing with the CDP base.

Here is a list of features for the CDP.

Telephony and Data Features :

- Integrated 56k V.90 data modem for high speed data transmission over telephone line.
- USB device data connector via micro connector in basestation and each handset.
- Half duplex high quality speakerphone integrated in the basestation.
- Half duplex high quality speakerphone integrated in each handset.
- Full numeric keypad in basestation for stand alone operation
- Three party conference feature.
- Caller Line ID, FSK Types 1 and 2 and DTMF.
- DTMF dialling.
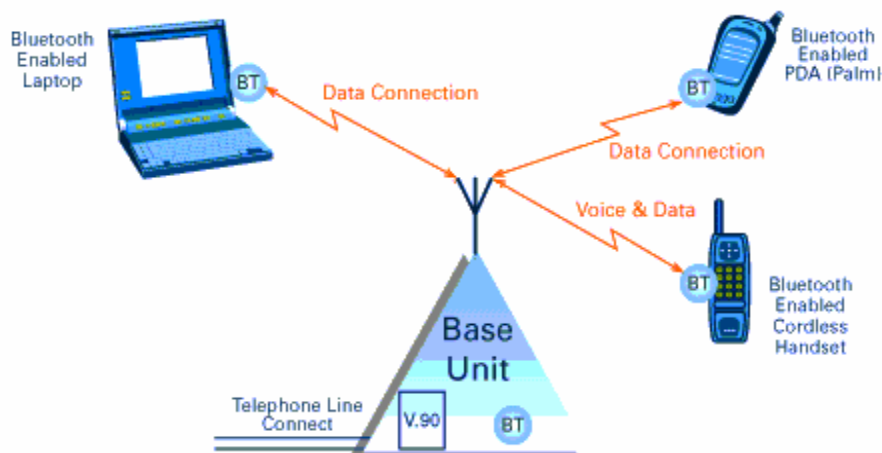
Cordless Telephony features:
- Handset to handset intercom.
- Up to four handsets on air simultaneously (two line version), three handsets (single line version).
- Up to seven Bluetooth devices can operate simultaneously with the system.
- Up to 50 devices can be registered for operation with the system.
- Indoor range better than 50 m under typical conditions.
- Outdoor range better than 300m under typical conditions.
- Internal antenna in both basestation and handset
- Powered from 3 rechargeable AAA 700 mAh NiMH batteries
- Talk time > 7 hours
- Standby time > 7 days
- Small size: handset weight < 140 grams.

Handset User Interface Features:

- Full graphic LCD screen, 108 by 60 pixels, capable of displaying 4 icons (16x16) with a line (14 chars) of description and 4 rows of 14 characters (9x7).
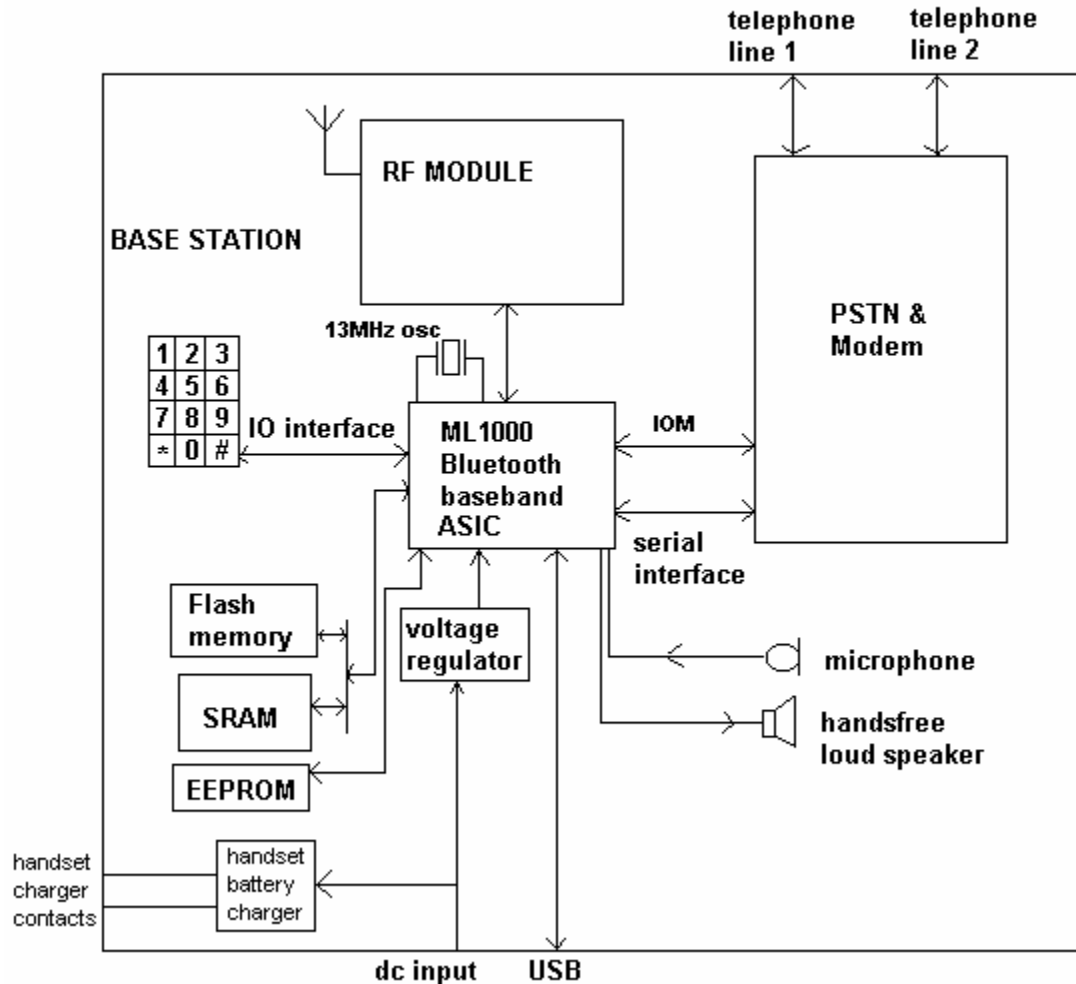- Menu and icon driven operation.

- Four languages included – English, German, Spanish and French. Further languages may be down loaded via connection to a web site.
- Basestation public phonebook with 100 name and number entries
- Handset phonebook with 40 name and number entries
- 20 Number redial list (Tx and Rx calls)
- 20 Number missed call list
- Ten user selectable ring tones
- PC Windows^{TM} hosted phonebook and product configuration application software.

Here is a diagram showing the usage scenarios.

CDP Base Station Description

BASE STATION Block Diagram

The base station is designed around an ASIC designed by Wave Research, the ML1000. This has integrated processor, USB interface, RF interface, IO ports, serial port, and audio interface for microphone and loud speakers and SPI bus. A 13MHz crystal provides the main oscillator for the ML1000.

Power is provided to the base station by an external mains adapter providing 7.5Vdc. This is fed into a 3.3Vdc voltage regulator supplying the all circuitry in the base station, with the exception of the battery charger that is powered directly from the 7.5Vdc input.

The battery charger provides a constant current source to external charger contacts for the handset cradle.

The RF module is based around an Infineon Bluetooth RF chipset. The ML1000 has a dedicated RF interface for this RF circuit. There is an internal antenna built in the base station.

The telephone line interface circuit consists of two separate PSTN line interfaces, line 1 and line 2, with line 1 including a V90 modem, which is connected to the ML1000 by a serial interface. An IOM interface is used between the ML1000 and the telephone interfaces, line 1 and line 2.

The program memory for the ML1000 is a flash memory device. There is external SRAM for use with the processor in the ML1000.

An EEPROM is used for the configuration of the base station. Also is used to store telephone number memories.
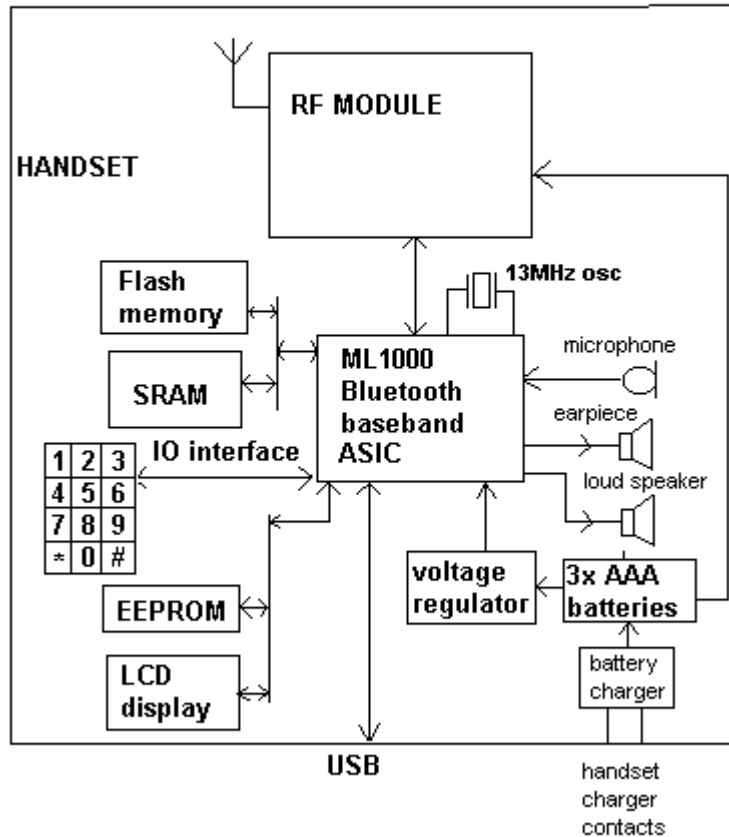
The base station also has a built in speaker phone. The audio interface on the ML1000 is used for the analog inputs and outputs to the microphone and loudspeaker.

The keyboard interface is made through a digital IO interface to the ML1000.

The USB connection is made by a mini B USB connector directly to the ML1000. The USB interface is used to download phone book information from a PC to the base station.

CDP Handset Description

HANDSET Block Diagram

Like the base station the handset is designed around an ASIC designed by Wave Research, the ML1000. This has integrated processor, USB interface, RF interface, IO ports, serial port, and audio interface for microphone and loud speakers and SPI bus. A 13MHz crystal provides the main oscillator for the ML1000.

Power is provided to the handset by three AAA Nickel Metal Hydride rechargeable batteries. The batteries feed the RF circuitry directly and a 3.1Vdc voltage regulator supplying the all the remaining circuitry in the handset.

There is a battery charger circuit taking charger current from the constant current source in the base station via the charge contacts.

The RF module is based around an Infineon Bluetooth RF chipset. The ML1000 has a dedicated RF interface for this RF circuit. There is an internal antenna built in the handset.

The program memory for the ML1000 is a flash memory device. There is external SRAM for use with the processor in the ML1000.

An EEPROM is used for the configuration of the handset. Also is used to store telephone number memories.

The handset has a microphone and earpiece receiver for normal telephony and a loudspeaker for hands free operation. The audio interface on the ML1000 is used for the analog inputs and outputs to the microphone, earpiece and loudspeaker.

The keyboard interface is made through a digital IO interface to the ML1000.

There is a dot matrix LCD that is controlled by the SPI bus.

The USB connection is made by a mini B USB connector directly to the ML1000. The USB interface is used to download phone book information from a PC to the handset.

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