## GENERAL DESCRIPTION

The CT914 and CT918 are radio frequency modules for the cordless telephone applications in the 900 MHz band. They are meant to be used in countries where the CT1 and CT1+ standards are approved by the local telephone authorities. The CT914 and CT918 comply with the requirements of radiation and signal handling capabilities of *"ETS1"* and *"BAPT 222 ZV 80-3"*.

The CT914 and CT918 perform full duplex communication with a 45 MHz duplex distance and a channel separation of 25 kHz. The CT914 features 40 channels in accordance with the CT1 standard, the CT918 has 80 channels in accordance with the CT1+ standard. In a normal application, types RF-units are required because frequencies are different for hand-set and base-set.

The CT914 and CT918 consist of an FM transmitter and receiver with an FM-demodulator. They are provided with a receiver signal-strength indication (RSSI). The frequency control uses a 3-wire bus interface. The transmitter amplifier can be switched on/off externally.

**Table 1** Channel 1 frequencies

| MODULE | TRANSMITTER (MHz) | RECEIVER (MHz) |
|---|---|---|
| CT1 hand-set | 914.0125 | 959.0125 |
| CT1 base-set | 959.0125 | 914.0125 |
| CT1+ hand-set | 885.0125 | 930.0125 |
| CT1+ base-set | 930.0125 | 885.0125 |

## FUNCTIONAL DESCRIPTION

The CT914 and CT918 consist of an FM transmitter together with an FM receiver in the same unit (see Fig.1). The transmitter part has a voltage-controlled oscillator (VCO) running at the transmit frequency. This VCO is frequency-locked and controlled by a phase-locked-loop (PLL) circuit. Frequency modulation (FM) of the transmit VCO is accomplished by superimposing the incoming audio signal on the PLL control voltage. The FM-modulated carrier is amplified by a three stage amplifier before entering the output bandpass filter and antenna connection.

The receiver part has a double conversion architecture. The incoming radio frequency (RF) signal is amplified and filtered before reaching the mixer. At this mixer stage it is mixed down to the first intermediate frequency (IF) by using a local phase-locked-loop VCO. The first IF signal is filtered by means of a crystal. In order to enhance selectivity and for FM demodulation the signal is mixed down again to the second IF signal. Mixer and demodulator are integrated into one IC, which also provides a receiver signal-strength indication (RSSI) and buffer demodulated audio.

Common to receiver and transmitter PLL ICs is a temperature compensated crystal oscillator (TCXO) providing a very stable reference frequency.

## ORDERING INFORMATION

| TYPE NUMBER | TYPE OF SET | STANDARD | MOUNTING | CATALOGUE NUMBER |
|---|---|---|---|---|
| CT914B | base-set | CT1 | screw mounted | 3139 147 20051 |
| CT914H | hand-set | CT1 | screw mounted | 3139 147 20061 |
| CT918B | base-set | CT1+ | screw mounted | 3139 147 20071 |
| CT914H | hand-set | CT1+ | screw mounted | 3139 147 20081 |
| CT914B/HM | base-set | CT1 | solder mounted | 3139 147 20011 |
| CT914H/HM | hand-set | CT1 | solder mounted | 3139 147 20021 |
| CT918B/HM | base-set | CT1+ | solder mounted | 3139 147 20031 |
| CT918H/HM | hand-set | CT1+ | solder mounted | 3139 147 20041 |

**BLOCK DIAGRAM**

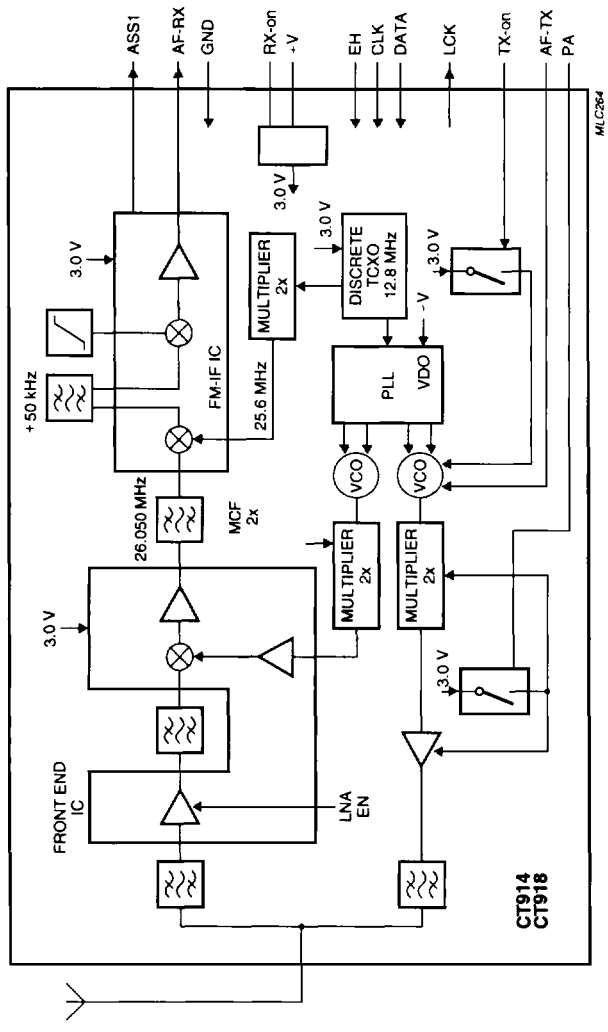


Fig.1 Electrical block diagram.