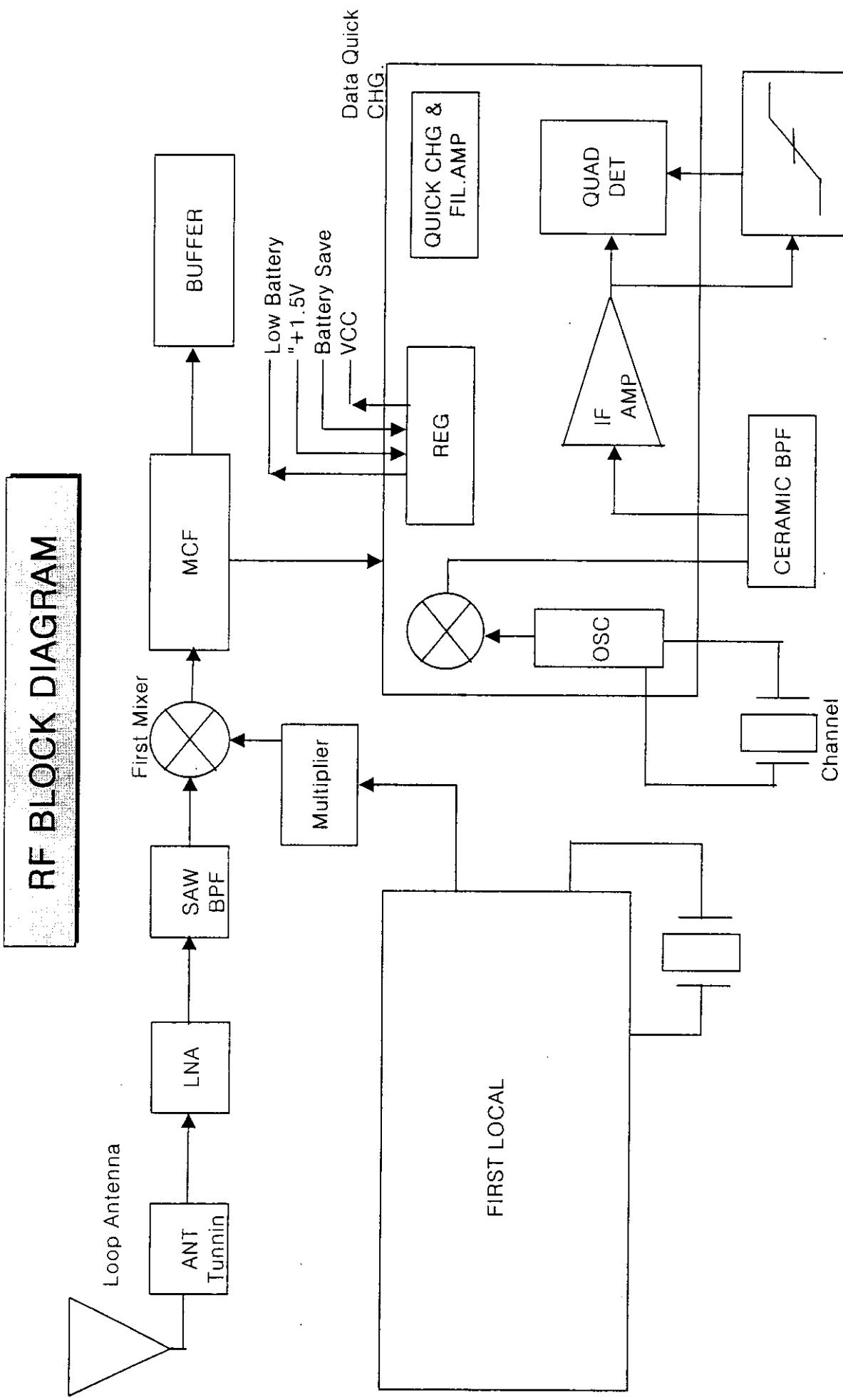
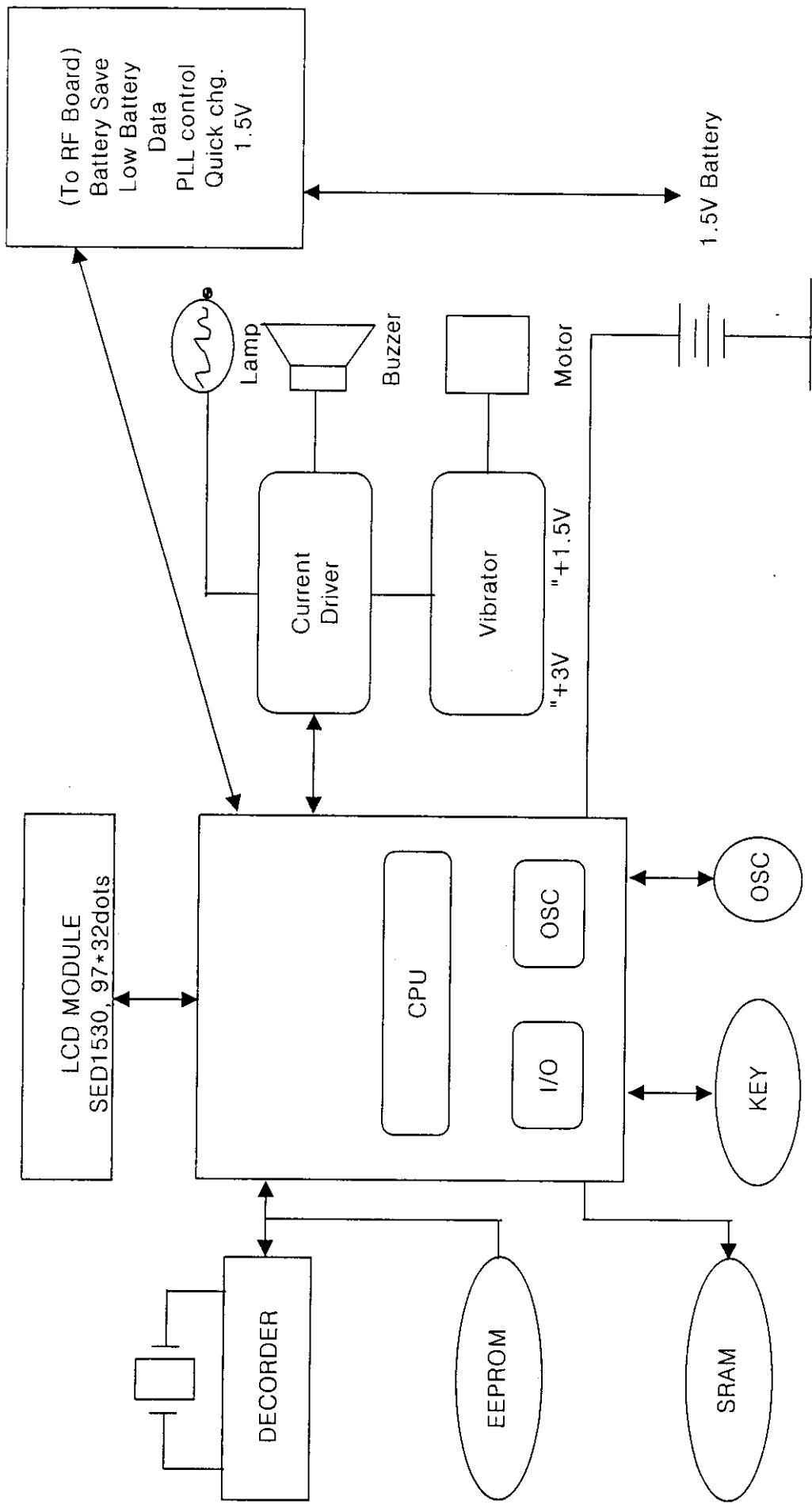


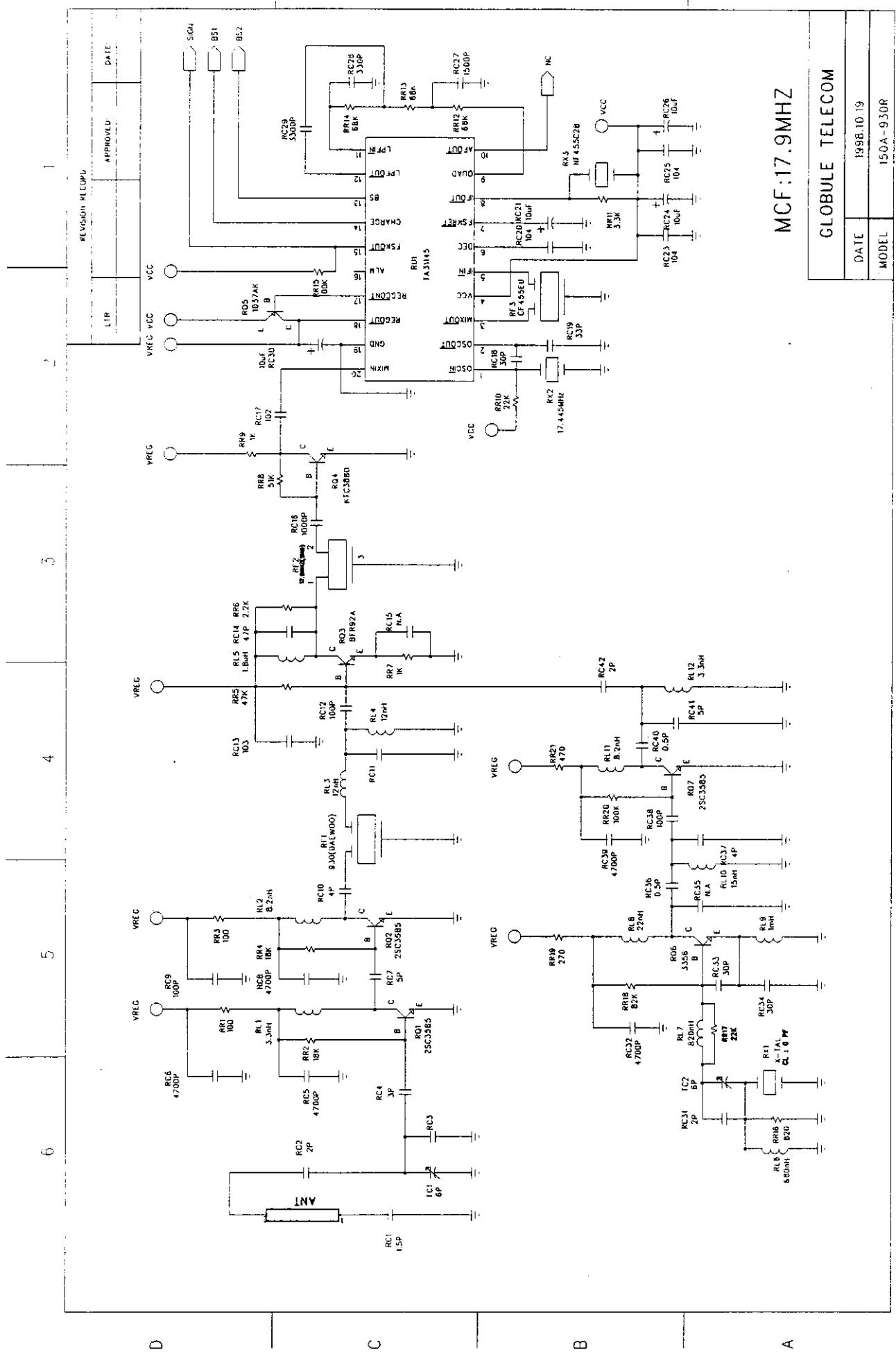
BLOCK DIAGRAM & SCHEMATIC DIAGRAM

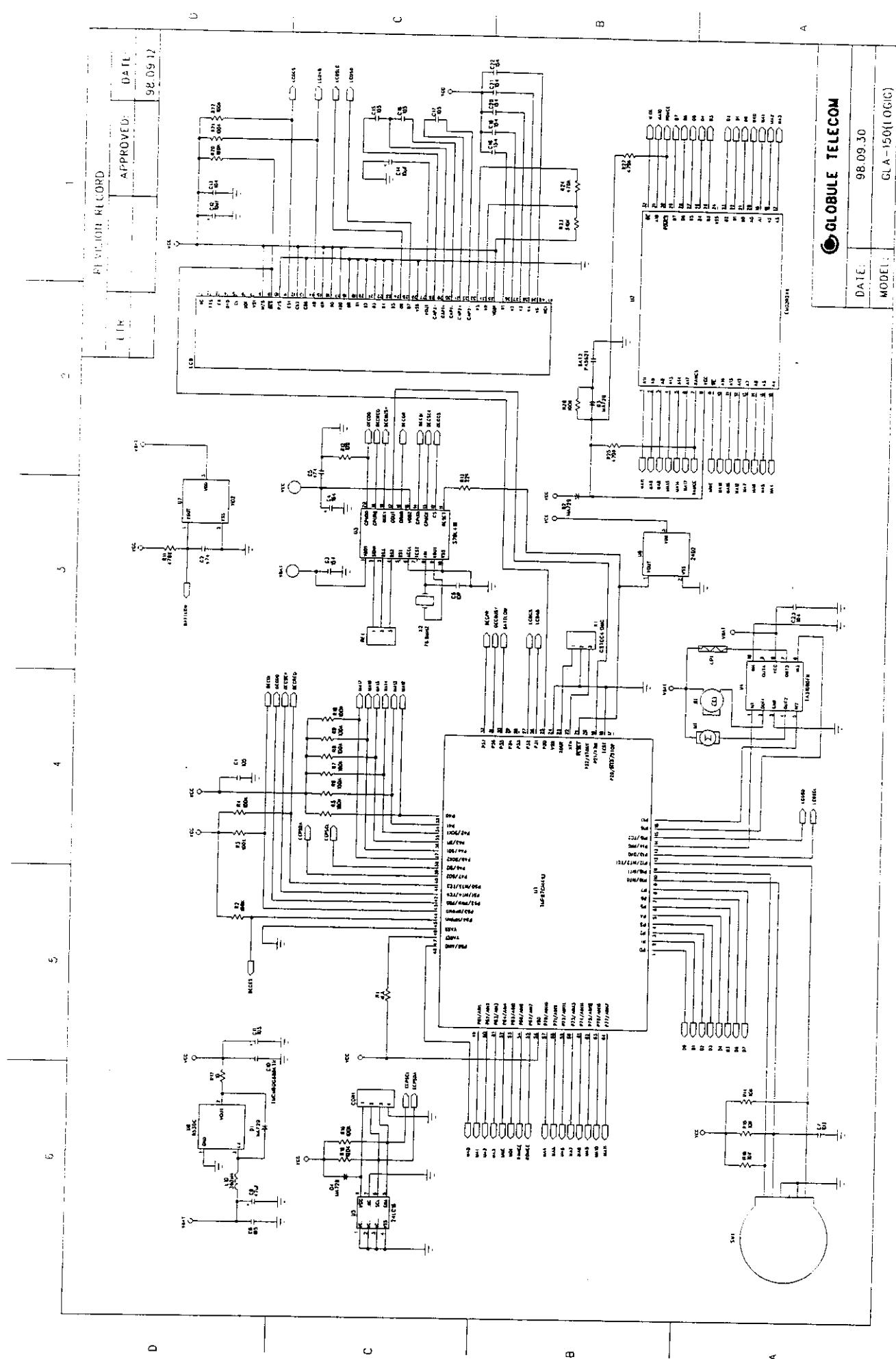
RF BLOCK DIAGRAM



LOGIC BLOCK DIAGRAM







DESCRIPTION OF CIRCUIT FUNCTION

1 CIRCUIT DESCRIPTION

1.1 GENERAL

This Radio display paging receiver is a FM double heterodyne receiver of Alphanumeric display type with 16characters per 4lines LCD. And it utilizes POCSAG code format for encoding with the frequency ranges of 929.2125 MHz~931.3625 MHz. It demodulates received FSK-NRZ(Frequency Shift Keying-Non Return Zero)signal then after searching its own data, it displays complete message on LCD.

Also it can be simply variable according to the bit rate of 512bps or 1200bps or 2400bps and it has several special features.

1.2 COMPOSITION

The electrical circularity of JOG radio pager is composed of a plated copper antenna and two printed circuit boards.

These two boards named receiver-board and logic-board.

Receiver-board contains all the RF section, and Logic-board contains all the rest of the circuit such as CPU, decoder, EEPROM, and so on.

The housing made of solid & reinforced material which is called polycarbonate against various mechanical impact. In addition, this compact sized & light pager can be easily carried in your belt and equipment with rubber made contact switch in electronic on/off method.

1.3 CIRCUIT

1.3.1 ANTENNA

This micro loop antenna of JOG is cooper with nickel and designed to give maximum sensitivity in accounting the effect human body, peculiar fiend operations. The selected carrier frequency can be turned in with an variable capacitor(TC1).

1.3.2 RF AMPLIFIER AND RF CHANNEL FILTER

This RF amplifier which is designed with 2 main RF transistor is made of discrete chip components, and the configuration is a cascade amplifier. The amplified RF signal from RF amplifier goes RF filter that is composed of the saw filter and eliminates those spurious.

1.3.3 FIRST OSILLATION

The oscillatory frequencies are obtained from following equation.

$$f_i = \frac{(F_c-17.9)}{12} \text{ MHz} \quad (929.2125 \text{~} 931.3625 \text{ MHz})$$

1.3.4 FREQUENCY CONVERSION AND FILTER

The first mixer mixes channel filtered RF signal with oscillatory frequency then it converts mixed RF signal into 17.9 MHz of first IF signal and feeds to first IF amplifier. The second IF 455 kHz is filtered as second frequency conversion.

1.3.5 DEMODULATION CIRCUIT(U4)

This demodulation is composed of the IC of U7(TA31142FN) with functioning as second IF amplifier, limiter, quadrature detector, lowpass filter, data shaper, quick charger, batter saving circuit, voltage regulator etc.

1.3.6 DECODER IC(U3)

This decoder is fully integrated CMOS POCSAG (RPC #1 code) decoder and page controller for display pagers. The decoded POCSAG data are transferred over a serial interface to a microcontroller according to its commands for processing and subsequent storage and display.

1.3.7 EEPROM(U5)

This 16K bit EEPROM IC is electrically erasable and storing 6 CAP-Codes ;plus the sub-address for message calling that are defined by MPU

1.3.8 LCD(LCD 1)

96*32 dots LCD Module is used. It contains DC-DC circuit for basing to LCD panel(-12Volt)

1.3.9 SWITCH(SW1)

The JOG pager has multi-funtion switch. It can be pushed an rotated by one finger. The direction of rotation is detected by phase of switch.

1.3.10 SRAM

It contains font data Mask-ROM and 256K byte SRAM.