

CIRCUIT DESCRIPTION

Device: RF5501-433

Model: UA352

ETSI Identifier:

Schematic Diagram:

Description:

This device is a narrow band ASK receiver for 433.92MHz plus a regular LCD Icon Keypad. It receives signals in the area of coverage, demodulates and decodes the signals then sends it to the system control panel of the wireless security system. Users can communicate with the system control panel through the keypad. The LCD screen displays the security system status with fixed words and numbers.

The unit consists of three main circuit sections, a microprocessor-the control section, the ASK receiver and the LCD /Buzzer driver.

ASK Receiver: The antenna receives the incoming signal and feeds to the RF filter and amplifier to achieve good selectivity and sensitivity. The mixer mixes signals from the RF amplifier and the local oscillator. This oscillator includes a crystal reference oscillator, a fixed divider, and a phase detector forming a phase-lock-loop (PLL) system to lock the free running VCO to 423.22MHz. After mixing, an IF filter passes the desired signals to the IF amplifier and the demodulator. The demodulated information is sent to the microprocessor of the control section for decoding/processing then to the system control panel via the Keybus interface.

The Control Section: This section provides pulses to switch antennas (there are two antennas in the receiver) and decodes the demodulated signals from the receiver. It responds to commands from the system control panel through the keybus. This section also scans the signals from the keypad or the control panel to check and respond any incoming/outgoing signals. There is a 13.225625 MHz clock signal in this section for its normal operations and provides the PLL of the ASK Receiver with reference frequency – 6.6128125MHz (=13.225625MHz/2).

The LCD / Buzzer Driver: This section uses the output from the decoder to drive the LCD in displaying the security system status. The circuits include an ASIC and a Liquid Crystal Display. They are connected via the Zebra–Carbon connectors. Communication to the ASIC is done through an I²C interface from the microprocessor.