

FCC requirements § 2.1033 (b)(3)

INSTALLATION INSTRUCTIONS

Reference Manual (Installation Instructions) furnished to the user of the First Access system
is attached

FCC requirements § 2.1033 (b)(4)

**CIRCUIT DESCRIPTION,
BLOCK DIAGRAM &
SCHEMATIC DIAGRAM**

This page is followed by the First Access card transceiver description, block and schematic diagrams.

Product hardware description is given in pages 6,7 and 12-15 of First Access Enterprise Reference Manual

The hardware is splitted into two parts: Sensor Model SA108 and Card Model CA108.

They are both (Sensor and Card) full superheterodyne TRANSCIEVERS, both operating on 433.92[MHz], and controlled by the TI Microcontroller MSP430x315IDL each.

For initialization the Sensor uses an Infra Red Transmitter and the Card has an Infra Red detector.

The transceiver (For the Sensor Model SA108 & Card Model CA108) description:

The principle of transceiver operation is sending for 600[• S] the carrier frequency (433.92[MHz] without modulation) by the transmitter.

While receiving the carrier by the receiver, it calibrates itself in order to be ready to get the data correctly.

The Receiver:

The controller loads the PLL-U7 to it's LO frequency which is 423.22[MHz], this frequency is entered through the VCO (based on an RF amplifier- U6, a varactor- D1, transistor amplifier- Q2 and LC net) and a RF switch- U4, U3 to the receiver- U1.

U1 is responsible of mixing to result 10.7 [MHz], filtering by F1, F2 filters and detects by DS1 discriminator to a band of ± 90 [KHz].

The signal is entered to a buffer- U2 which act as a sample and hold to achieve the calibration effect as described in the beginning of this paragraph – (1.2).

The Transmitter:

The controller loads the PLL-U7 to it's frequency which is 433.92[MHz], this frequency is entered through the VCO (based on an RF amplifier- U6, a varactor- D1, transistor amplifier- Q2 and LC net) and a RF switch- U4, U3, the matching filter network to the antenna.

The Card Model CA108.

The card communicate with the Sensor by the RF transceiver or can initiate by the Sensor through the IR detector - D4 (U12 used as an amplifier).

The Card has only one antenna, which is Helical Antenna, and it is a printed antenna in the printed circuit.