

Fluke 233 Operational Description

This Remote Display Multimeter uses two identical wireless transceivers (Freescale Semiconductor MC13201) to enable removal of the display portion of the DMM (Digital Multimeter) to remote monitor the measurements from the base unit. The transceivers are short range, low power, 2.4-2.48 GHz Industrial, Scientific, and Medical (ISM) band transceivers and have a physical layer compliant to IEEE 802.15.4 . The packet structure is a point to point proprietary method.

The transceivers includes a low noise amplifier, 1.0 mW power amplifiers (PA), onboard RF transmit/receive (T/R) switch for single port use, PLL with internal voltage controlled oscillator (VCO), on-board power supply regulation, and full spread-spectrum encoding and decoding. The device supports 250 kbps Offset-Quadrature Phase Shift Keying (O-QPSK) data in 2.0 MHz channels with 5.0 MHz channel spacing per the 802.15.4 Standard. The SPI port and interrupt request output are used for receive (RX) and transmit (TX) data transfer and control. The antennas used are 2.45GHz Ceramic Chip Antennas with a peak gain of 3.0dBi

The remote display and base halves must first be initialized by the infrared communication port before the transceivers are able to communicate with each other. The products are enabled by docking the display with the base unit. Once docked and initialized, the two halves are linked to each other by address (Point to Point) Once the halves are separated, the wireless transceivers are enabled and only the two halves will communicate with each other. Two or more displays cannot be used to simultaneously communicate with a single base. The range of these transceivers is specified at 30ft but under ideal conditions my reach 100 ft. There are no additional peripheral devices supported or required.