

Smoke 418CA Smoke Detector Sensor Operational Description

The Smoke 418CA Smoke Detector Sensor transmitter is a low powered, wireless unit for remote controlling the home security feature. See the function descriptions in attached. A 3VDC battery powers the transmitter. It is designed to operate on a single fixed frequency at 418MHz $\pm$ 100 kHz. See the attached block diagram and schematic.

There is one button trigger the integrated circuit (U3) that produces the digital control signals and will modulate the carrier signal (ASK). The carrier signal is generated by X1 Crystal /amplifier circuit comprised of capacitor (C10, C11, C5, C9) and inductor (L1, L2) and transmitter IC (U1). The modulated output of the RF stage is coupled to the PCB antenna. The Antenna is attached on PCB antenna permanently around 110 mm.

The transmitter is manually operated by the buttons pushed 5 clicks within 5 seconds. If done correctly, the GREEN LED will illuminate solid for 10 seconds (note: after 10 seconds with no activity, learn mode will time out and the GREEN LED will turn off). Within the 10 second window, press the test button once, and then wait 3 seconds. If done correctly, the GREEN LED will flash once and then wait 1 second. If done correctly, the GREEN LED will flash quickly 5 times and will automatically deactivate send signal to receiver within the 5 second. This feature is incorporated by the U3 internally.

All tuning and verification are performed by the manufacture and there are user can make no adjustments.