

Elcombe Smoke Detector Modulation Scheme

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The Smoke Detector contains a low power RF Transmitter operating at a nominal center frequency of 173.225 MHz .

This is derived from a stable crystal oscillator at 57.7416 MHz , which is itself FM modulated by a digital signal .

The digital signal comprises typically 25 bits each comprising 3 zones , a start pulse , space , and a low or high data pulse , each bit lasting nominally 2.1 mS . This word is followed by an inter-word space of 10 mS . The space corresponds to the low frequency f_1 and the total deviation f_2-f_1 is nominally 6 kHz. The following diagram illustrates the scheme :-

