



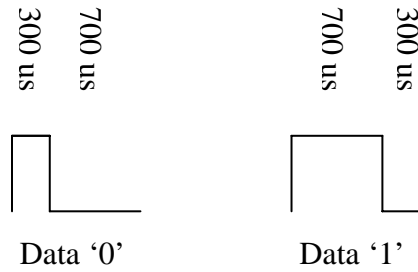
Reliable communication implementation with Xenon Electronic 433MHz Transmitter and 433MHz Super-Regenerative Receiver

Super-Regenerative receiving circuit has been around for well over 60 years and it is still being used in many applications today such as automotive/garage door opener or simple microprocessor communication due to its low-cost and easy construction. In this article we will be presenting the RF communication method with Super-Regenerative receiver.

Here are the important information to keep in mind when using Super-Regenerative receiver.

- 1) Unlike Superheterodyne receiver, noises (series of meaningless of high and low data bits) will always be present on the Super-Regenerative receiver even when no valid signal is being received (Eg. Such as the transmitter is switched off).
- 2) Due to the Super-Regenerative receiver's circuitry limitation, certain time interval of low pulse must be sent after a series of data bits are transmitted.
- 3) For simple economical on/off application where microprocessor is too luxury for such application, Freescale (formerly Motorola) MC145026, MC145027, MC145028 or similar decoder-encoder pair can be used.

Xenon Electronic recommends to use the following scheme for data bits representation.



Therefore, sending 1 bit of data will take 1ms.

When sending data on the transmitter, the recommended data packet size is 20 to 40 bits (1ms per bit) followed by a low pulse of 20 to 30ms. If the transmitter is not transmitting anything initially, data will need to be sent continuously for a total time length of 500ms before the Super-Regenerative receiver outputting the same data pulse as being sent on the transmitter side.

