

BBQ GURU PROCOMM 4 CONTROLLER OPERATIONAL DESCRIPTION

The controller used in conjunction with the Procomm 4 Handheld and provides closed loop control and temperature of a BBQ PIT. The controller is engaged in continuous 2 way wireless data communication with the handheld. A 10 mS long 916.48MHz FSK modulated RF data packet is sent to the handheld every approx 240mS. The 240mS interval is randomized slightly to manage conflicts between other handheld - controller pairs in the same RF field.

The controller uses a PIC 16LF877 microcontroller running at 3.579 MHz to service the LEDS, output and uses it's A/D converter to measure the amplified thermocouple signals coming from amp U6. The microcontrollers UART is wired to a Linx Technologies TXM-916-ES transmitter and RXM-916-ES receiver. The transmitter is only on when the 10mS data packet is being sent. The receiver is on for entire period between transmits and just monitors for relevant data. If the controller has not received relevant data in one receive cycle it alerts the user with an out of range flashing LED.

The LP2951, U5 is used to regulate the 12V wall supply down to 5V for the microcontroller and circuitry.