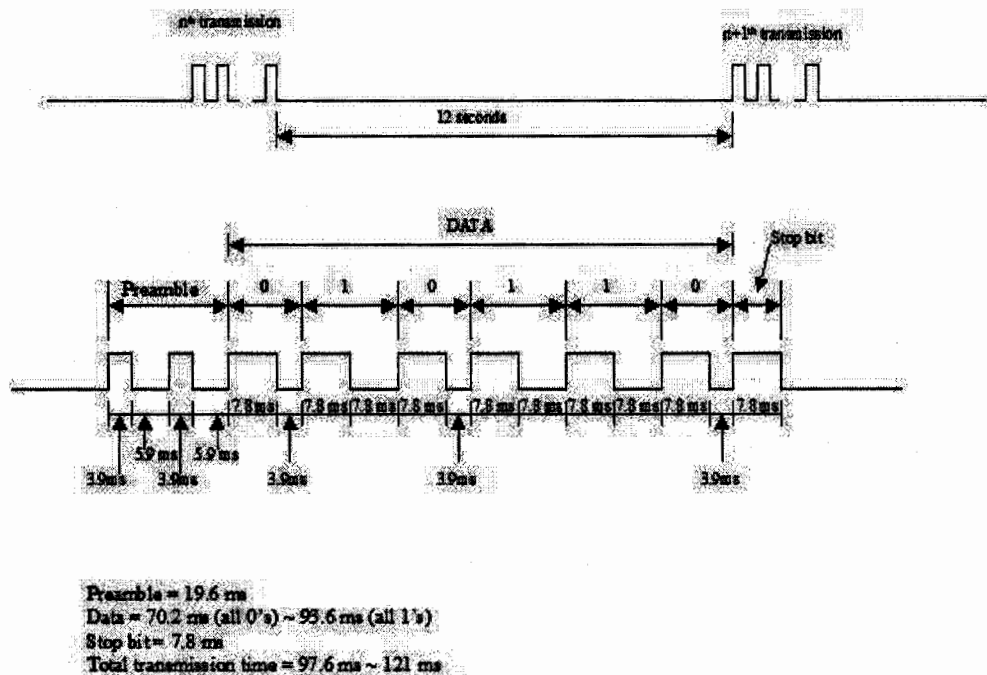


# Smart Thermometer Operation Description

The smart thermometer is a portable device which comprises of a transmitter main unit and a receiver pager. The transmitter main unit measures the meat and grill temperatures, displays the meat and grill temperatures, calculates the cook time, and sends the information to the receiver pager via 433MHz RF link every 12 seconds. These information is used to determine if the receiver pager is within the transmission distance which includes the status of the timer, cook time, and grill temperature. The antenna of the transmitter is a whip antenna while the receiver pager has a helical antenna. The transmitter frequency is 433.92MHz which is amplitude modulated by data stream of timing as follows:



To start the operation, the user just inserts the meat temperature sensor probe into the meat with the grill temperature sensor probe put inside the grill. Once the unit is ready to calculate the cook time, the user just presses the "START/STOP" button to start the cook time calculation. The main unit measures the meat and grill temperatures continuously. The transmitter sends the signal to the receiver pager every 12 seconds. In case the grill temperature is too high or too low, the transmitter main unit will send an alarm to the receiver pager for alert. Once the receiver pager receives the signal, it will beep the user and flash the

**"Check Grill" LED.** When the meat temperature reaches the preset cooked temperature or cook time reaches 00:00, the transmitter main unit will alert the user by sending a signal to the receiver pager. When the receiver pager receives the signal, it will beep the user and flash the **"Check Food" LED**. In case the receiver pager does not receive signals from the transmitter main unit, it will beep the user and flash the **"No Signal" LED**.

The smart thermometer can also be used as a timer alone. Once the timer finishes counting, the transmitter main unit will send the alert to the receiver pager, and the receiver pager will beep and flash the **"Check Food" LED**.