

GENERAL INFORMATION

1.1 Product Description

The Equipment Under Test (EUT) is a SchlumbergerSema, Inc., Model R300S which is an RF option for the SENTINEL line of meters. The trade name for the meter is SENTINEL. The trade name for the optional broadcast board is the R300. It comes in two models that are physically identical and differ only in the number of unique ID's that are broadcast. A single ID unit is called an R300S and a dual ID unit is called an R300SD. The name SENTINEL and the model R300S or R300SD will be clearly marked on the label.

The SENTINEL product line are solid state electricity power meters which Schlumberger currently produces. The basic meter consists of a signal input circuit board, which scales the input voltages and has a switching power supply, permanently connected to register circuit board which does calculations and the display function. The register board has a small linear power supply. There are a few different models of the SENTINEL meter, but the differences are not considered to affect the transmitter board.

The R300S is an RF option for the SENTINEL meter which will periodically transmit the meter reading and an ID number to utility data collectors that may be stationary, handheld, or vehicular mounted. The R300S board may also pass signals from the register board to an optional solid state relay output board which is not related to the RF operation. The R300S physically consists of one small circuit board. The RF board has a linear power supply, a microprocessor, an RF oscillator and a stripline antenna.

The EUT transmits on different frequencies between 910 to 920 MHz. These frequencies are selected by changing the DC bias in a portion of the transmitter circuitry. The system data collectors' receiver range is 910 to 920 MHz. Each R300S uses approximately 6 MHz of this range. The R300S pseudorandomly hops to a new frequency within its range for each transmitted message. However because the receivers that are used with this transmitter do not meet with the spread spectrum receiver requirements of 15.247, the transmitter has been designed to meet the requirements of 15.249. Operation is one way; the R300S does not receive.

The R300S does not allow for customer programming of the RF parameters of a sealed meter. All RF programming and RF tuning of the product will be done by factory trained personnel during the manufacturing process. At that time the R300S is tested, tuned, and programmed in non-volatile memory for operating system parameters and FCC compliance.

Schlumberger plans to sell the SENTINEL meter with the R300S as a whole, but it may also be offered as an upgrade to the SENTINEL meters.