

## Zonar V3R Telematics Device GSM Antenna Information

This document provides antenna compliance information for the Zonar V3R telematics device.

- 1) **In compliance with FCC requirements of paragraph 15.203 of the FCC rules;** the GSM antenna component is permanently mounted to the printed circuit board. There is no provision made for alternate antennas nor connectivity for any additional/external antenna.
- 2) **The V3R device uses a single surface mount chip type antenna.**
  - a. The antenna manufacturer is: Antenova
  - b. Manufacturer part number is: Reflexus
  - c. Specific RF parameters are as such:

Parameter	Frequency	Value
<b>Peak gain</b>	876 MHz	2dBi
	1917 MHz	3.7dBi
<b>Average gain (Linear)</b>	824-960 MHz	-1.3dBi
	1710-2170 MHz	-1.5dBi
<b>Average efficiency</b>	824-960 MHz	70%
	1710-217 MHz	>60%
<b>Maximum Return Loss</b>		-8 dB
<b>Maximum VSWR</b>		2.3:1

3) Details and photos of V3R GSM antenna:

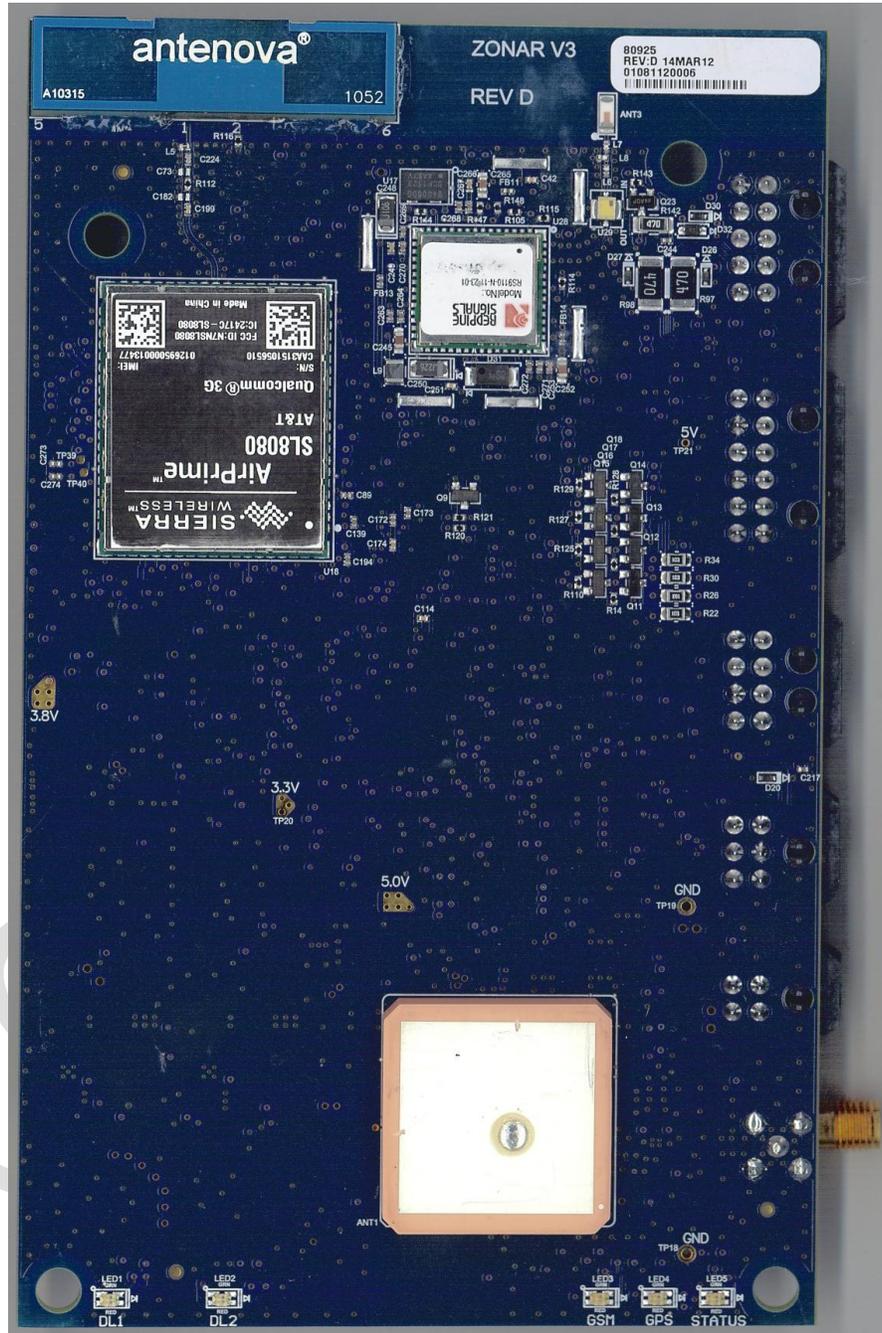


Figure 1 Antenna/Top side of V3R Device GSM antenna in the upper left

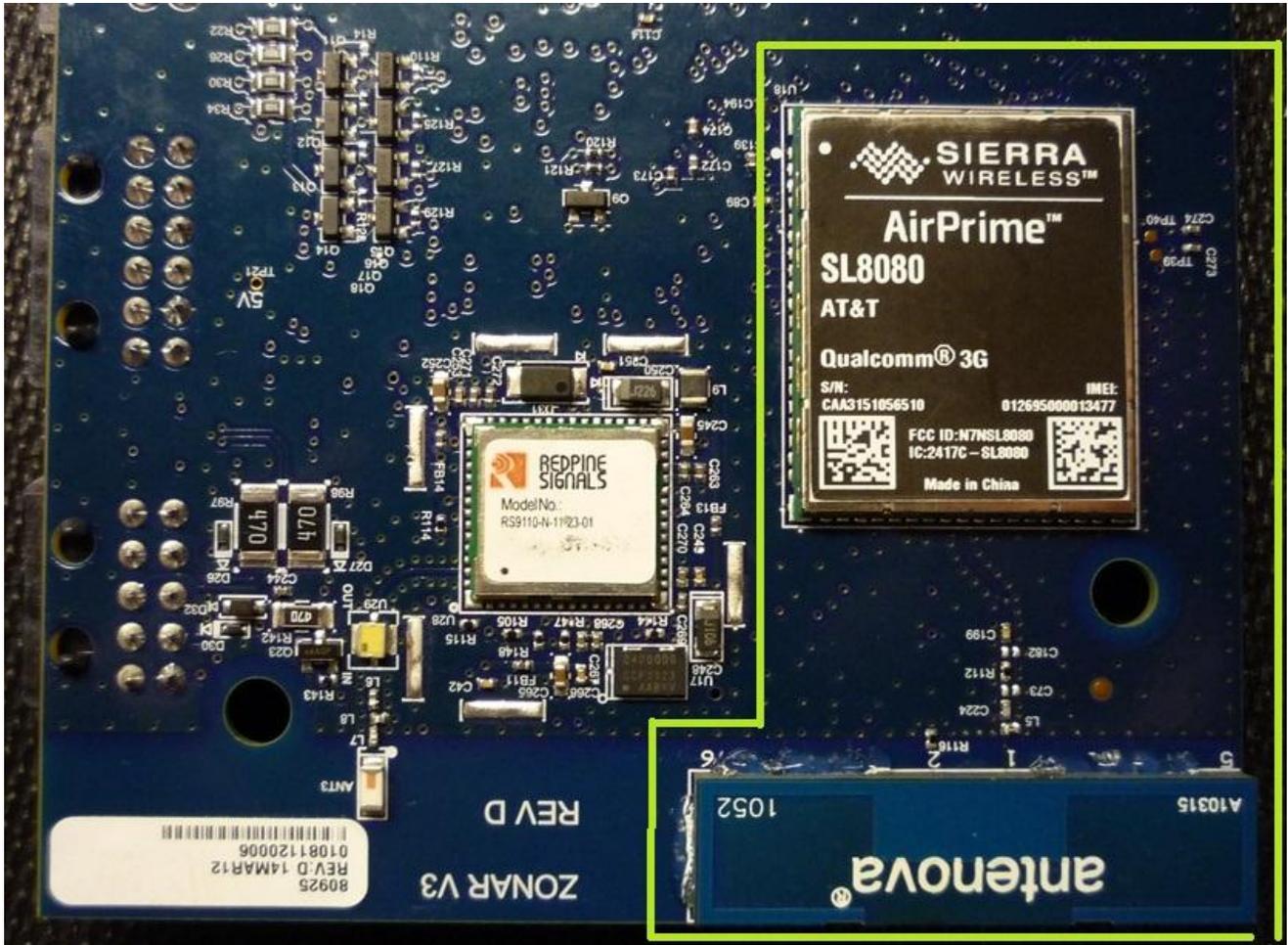


Figure 2 Close-up of GSM sub-circuit with antenna in the lower right



Figure 3 Top of GSM antenna chip



Figure 4 Bottom side of antenna chip showing PCB surface mounting