



Application Engineering

Design review report

Code: AE-32846
Rev: 5
Date: 2020-01-29
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1. Scope

Aim of this document is to describe suggestions and corrections that Telit advises to improve Oovo Electronics application that integrates a Telit GE910-QUAD V3 module.

2. Design review

Design review is based on the following received documentation:

- Schematic files: B106AA-Schematic_R5.PDF
- Gerber file: B106AA_Gerber_ODB.zip
- Other: Telit Design Review R05 (PCB).pdf

Summary Tables:

Schematic Review	P	F	I	MI	N/A
Power Supply	V				
SIM Pins	V				
Digital Pins	V				
Audio					V
RF	V				

PCB Layout Review	P	F	I	MI	N/A
General Placement	V				
Antenna Waveguide		V			
RF Aspects		V			
Audio Aspects					V

P: Pass; F: Fail; I: Improvements possible; MI: Missing Information; N/A: Not Applicable

The following symbols will be used throughout the Design Review to indicate:

- ✓ OK: No design changes are required.
- ℹ Tip: information or possible improvement, not mandatory but recommended.
- ⚠ Warning: if you don't follow the recommendation there's a risk of malfunctioning or issues during the homologation phase, strongly recommended.
- 🛑 Error: it's mandatory to follow the recommendation otherwise the module could be damaged or could not work properly or there's high probability of facing issues during the homologation phase.
- ? Missing Information: some relevant information is missing therefore the DR cannot be accurate on this item.

2.1. Schematic review


2.1.1. Power supply

✓ Ok.

2.1.2. SIM pins

✓ OK

2.1.3. Digital pins

 All signals connected to our modules must be in tristate while they are OFF and during start-up or HW_SHDN procedures.

2.1.4. Audio pins

✓ N.A.

2.1.5. RF aspects


✓ Ok.

2.2. PCB Layout review

2.2.1. General placement

✓ OK

2.2.2. RF aspects

 Your Cellular is not waveguide with correct characteristic impedance of about 50 Ohms. We calculated its characteristic impedance based on the CPW model with following dimensions:

Track width: 0.5 mm

Ground Gap: 0.10 mm

Dielectric thickness: 0.21 mm

The resulting impedance is around 38 Ohm, too low. A suitable waveguide can be obtained using a wider Gap:

- Track width: 0.77 mm
- Ground Gap on top layer: 0.15 mm
- Dielectric thickness: 1.477 mm (layer 4 to layer 1)

2.3. General comments

Please check and follow Telit Modem Integration Design Guide.

Review is related to received application information and the supposed use of it.



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3. Quality record

This design review is registered internally in Bugzilla with ID #32846.

The customer request is registered internally in Support Center Plus with ID #00157856.