

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 Ovoo 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.PDFGerber file: B106AA_Gerber_ODB.zip

o Other: Telit Design Review R05 (PCB).pdf

Summary Tables:

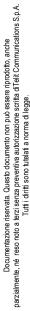
Summary rables.					
Schematic Review	Р	F	1	MI	N/A
Power Supply	٧				
SIM Pins	V				
Digital Pins	V				
Audio					V
RF	٧				

PCB Layout Review	Р	F	MI	N/A
General Placement	٧			
Antenna Waveguide		٧		
RF Aspects		٧		
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.
- 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.





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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 mmGround 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.