

APPROVAL SHEET

Customer Name: *Compal Electronics, Inc.*

Date: 2025/07/14

Doc. Version:1.0

OEM P/N	DC330030R0L
HLN P/N	350-24056
Description	KDW00_BlueRidge10_NFC_RFID_ASSY
Version	1.0

Provided By Hong-Lin Technology	Reviewed By Hong-Lin Technology	Approved By Customer
陆晓婷	严加星	

工厂/Factory:

1.越南,北宁省,桂武县,扶梁社,桂武三工业区 CN17A-2 地块

Lot No. CN17A-2 Que Vo 3 Industrial Park - Phu Luong Commune - Que Vo District - Bac Ninh
Province-VietNam.

2.江蘇省常熟市高新技術產業園柳州路 8 號 No.8 Liuzhou Road, Yushan Industrial Park, Hi-tech
Development Zone, Changshu, Jiangsu, China

1.Introduction

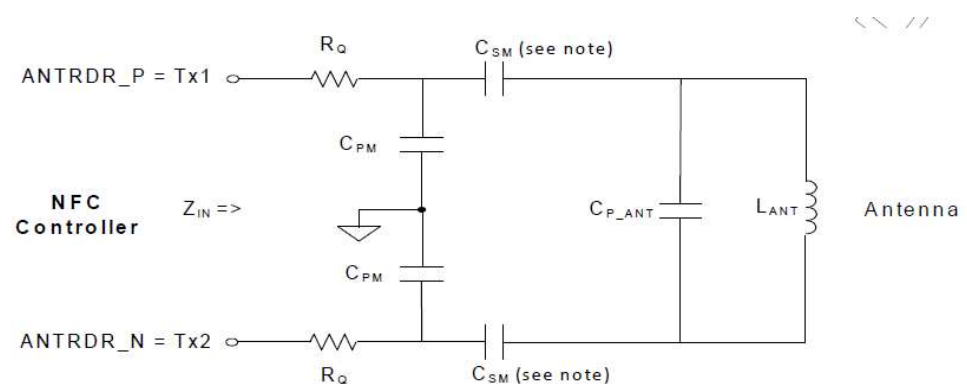
1.1 Antenna

Position	Base
Antenna Type	NFC
Photo	Please refer to Appendix A

INTRODUCTION

- This document is for use of Antenna vendors (ODM) for Dell laptops/tablets with Broadcom's Citadel chipset for RFID based secure login and NFC features
- NFC/RFID implementation in these products requires an effective Antenna Match and NFC functionality verification
- The primary scope of this document is limited to evaluating the antenna matching circuit. Scope also covers signal integrity/waveform measurements, field strength validation and Critical card functional tests.
- Implementation has an LC EMI filter on the Citadel Module containing 58202. The rest of match is on Antenna Module and is subject to tuning adjustment based on antenna and related design

AFE3 Antenna Interface Circuit Topology



ANTENNA DETAILS: BlueRidge 10(1/6)

Parameter	Item	Limit	Detail
Product Info	Vendor Name		HongBo
	Date		2025/03/13
	Sample Part Number		
Mechanical Design	Coil outer Size (mm*mm)	40 x 35 x 0.5 mm	38 mm x 33 mm
	Coil area (mm ²)	N/A	1254 mm ²
	Number of turns	3-6	4
	Inductance	<1.5uH	1.43 uH
Antenna PCB	Copper Thickness		1/2 oz.
	Trace Width (mm)	>0.6mm	0.7 mm
	Trace Gap(mm)	>0.4mm	0.5 mm
Ferrite	magnetic permeability(u')	>120	130 ±20%
	magnetic loss(u'')	<3	3 ±10%
	Thickness (mm)		0.2 mm
	Ferrite size (mm*mm)		40 x 35 mm ²

NFC HW PERFORMANCE

- Resonant Frequencies and other parameters

Parameter	Recommended	Value
R/W Resonant Frequency (MHz)	13.56MHz +/- 0.10MHz	13.57
CE Resonant Frequency (MHz)	15.00MHz +/- 1.00MHz	15.14
System Q	17 – 19 (+/- 2)	17.92
System Impedance as seen across TX1 and TX2 pins	8 +/- 1.00 Ω @13.56MHz	7.88

- Field Strength Measurements (A/m)

Distance from landing plane	On-axis to Antenna	90-deg to Antenna axis
0mm	3.09	3.11
5mm	3.12	3.14
10mm	2.86	2.93
15mm	2.21	2.22
20mm	1.73	1.89
25mm	1.52	1.25
30mm	1.14	1.06
35mm	0.83	0.84

