TAOGLAS®

Datasheet

Part No:
FXR.16.A

Description:

NFC Antenna, 13.56 MHz, FPCB, 0.44t with Ferrite

Features:

Small form factor

High read range

RoHS & Reach Compliant

1. Introduction

The FXR.16.A is a NFC (Near Field Communications) embedded antenna for use in internal IoT devices such as Key cards, Payment Systems and Readers. The FXR.16.A provides excellent NFC antenna performance in a small form factor. This antenna has been custom designed to provide the highest read range possible while maintaining a low profile.

NFC antennas can be applied in areas not traditionally available to other types of antennas. A common example is the ability to apply NFC antennas to batteries or other conductive surfaces. To enable this usage, however, a ferrite flux director layer is required. This ferrite layer acts to steer the magnetic flux away from the metal or other conductor, where it would otherwise result in loss or complete failure to communicate. Taoglas NFC antennas can therefore be customized with flux director layers to enable this flexibility in usage. The coil inductance noted below can help estimate a capacitance value for creating resonance at 13.56MHz.

Typical Applications Include:

- Mobile/Handheld Devices
- ID Scanners
- Payment Readers
- Access Controls
- Security

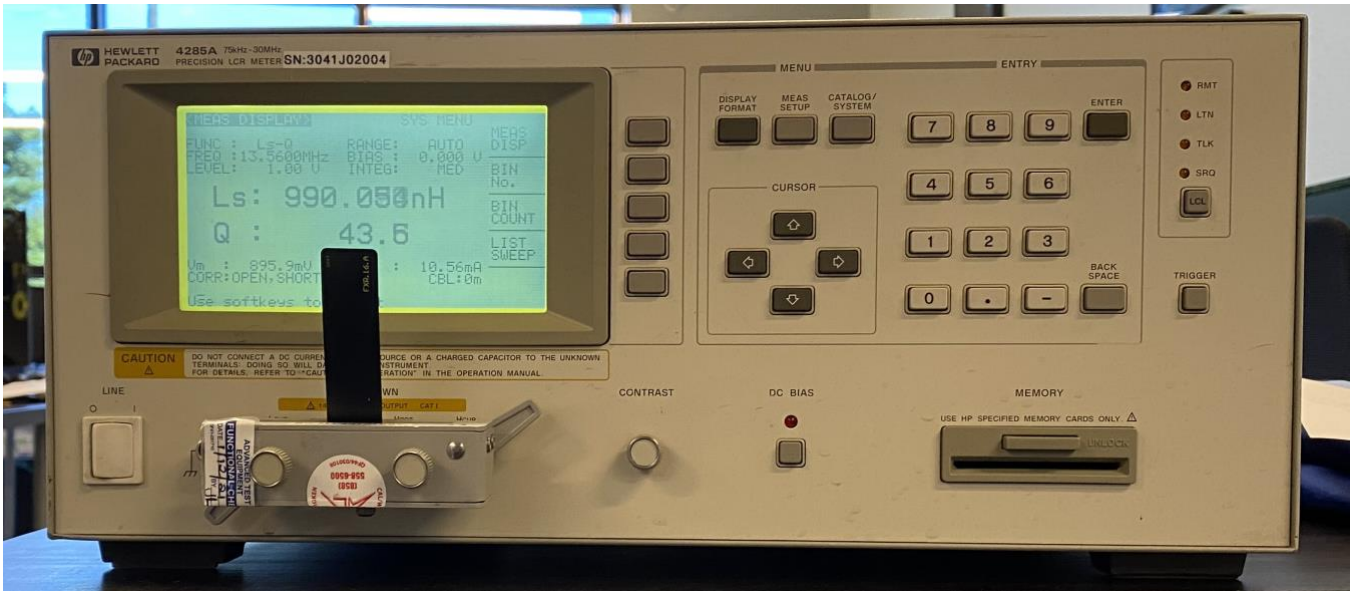
For further information or support, please contact your regional Taoglas customer support team.

2. Specifications

Electrical	
Frequency	**13.56 MHz**
Inductance @ 13.56 MHz	0.9 µH
Quality Factor (Q)	44
Mechanical	
Dimensions	64 x 18 x 0.44mm
Connector	Direct Solder
Weight	0.9g
Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

*Measured in Free Space

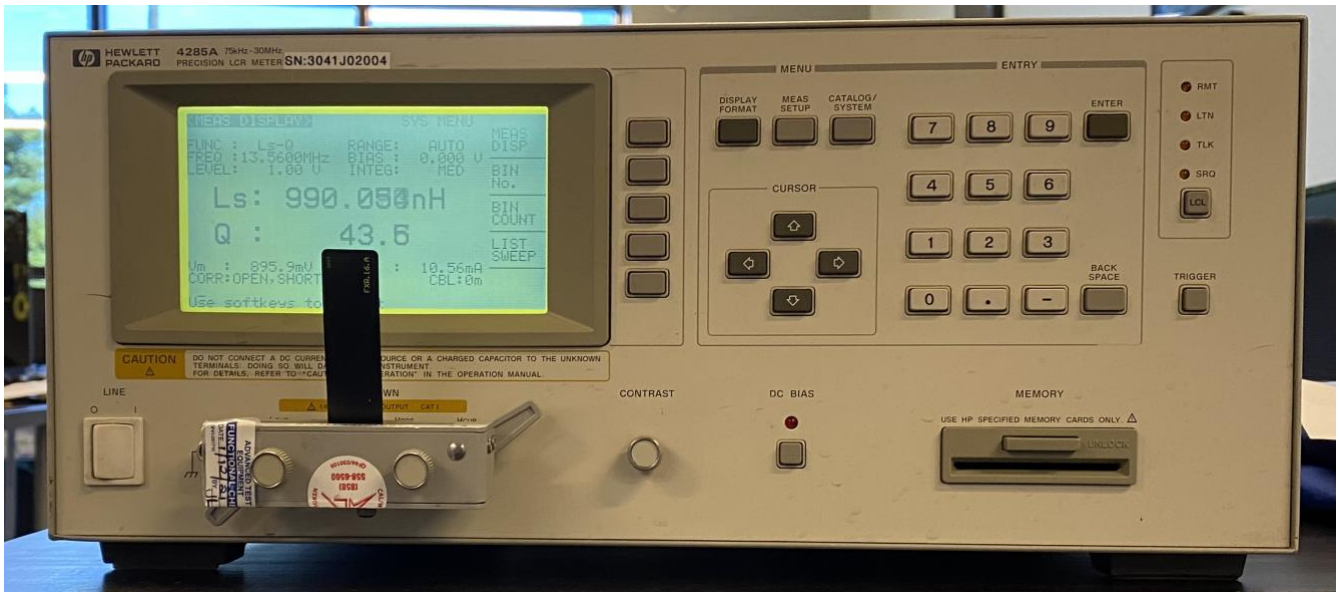
3. Test Setup



Inductance Measurement Test Setup

4. Antenna Characteristics

4.1 Inductance

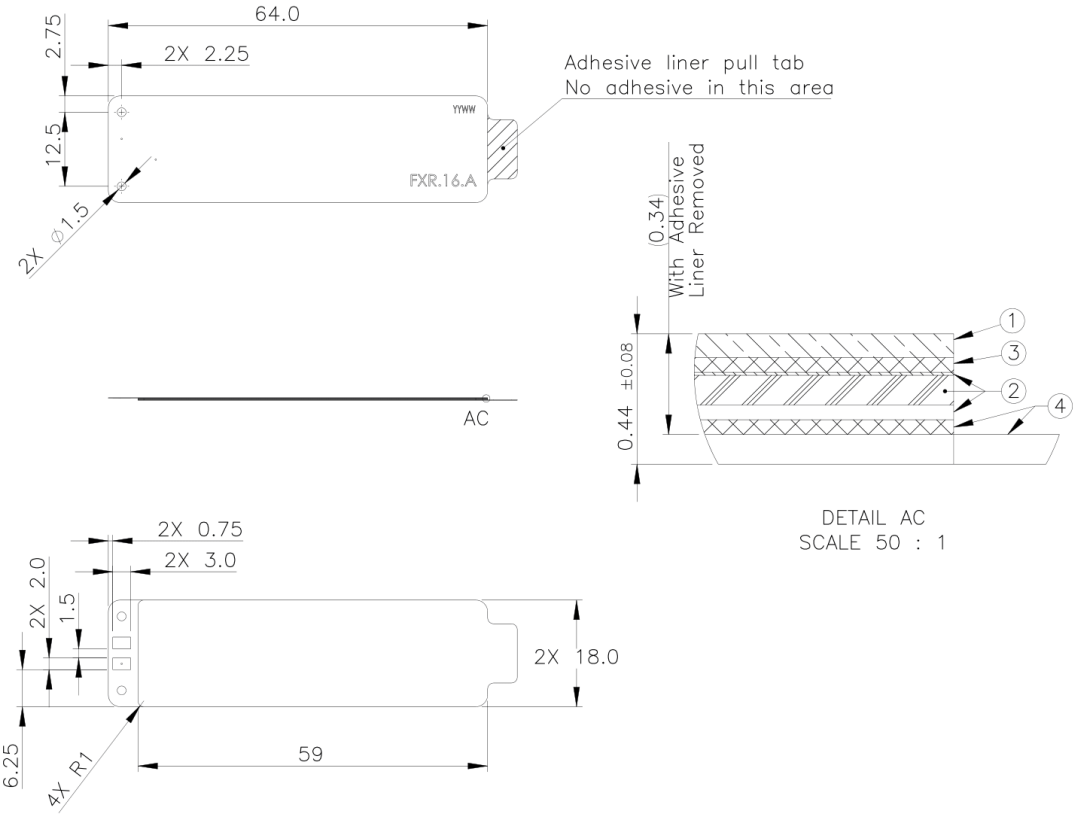


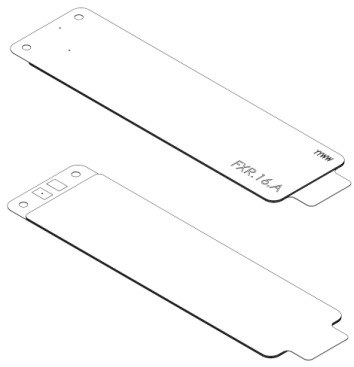
Inductance Measurement of FXR.16.A

5. Mechanical Drawing (Units: mm)

ISO NO.: EDW-20-8-0596
STATE: Released
NOTES: 1. All material must be RoHS compliant.

REV	ZONE	DESCRIPTION	ENG	APPROVED	DATE
D01	All	Initial design	T.Perry	T.Kelley	6/15/2020
D02	All	Added PET & Adhesive Liners to Ferrite. Updated thickness tolerance.	T.Perry	T.Kelley	7/8/2020
D03	All	Removed note 2 about multiple design variants, updated layers and heights. Updated BoM. Updated tolerance format to use title block.	T.Perry	I.Mendez	8/18/2020
D04	All	Moved solder pads to bottom layer to match gerbers. Updated thickness to match updated PCB.	T.Perry	I.Mendez	9/17/2020
D05	All	Updated thickness based on vendor feedback. Updated title.	T.Perry	I.Mendez	10/6/2020
D06	All	Added adhesive liner pull tab.	T.Perry	I.Mendez	12/11/2020





	Name	Material	Finish	QTY
1	FXR.16.A FPCB, .23t	Polyimide	Black	1
2	FXR.16.A Flux Director	Ferrite	PET Liner	1
3	Double Sided Adhesive Tape	3M F9460PC VHB	Natural	1
4	Double Sided Adhesive Tape + Liner	3M F9460PC VHB	Paper Liner	1

APPROVED BY:	
CHECK BY:	T.Kelley
DRAWN BY:	T.Perry
DATE:	6/15/2020
UNLESS OTHERWISE SPECIFIED TOLERANCES ON:	XX.±0.5 X.±0.3 .X±0.2 .XX±0.1 .XXX±0.05
THIRD ANGLE PROJECTION	

TAOGLAS. TW Design Centre

TITLE : NFC Antenna, 13.56 MHz, FPCB, 0.44t with Ferrite				
PART NO. : FXR.16.A				
UNIT: mm	SCALE: 1:1	PAGES: 1/1	REV. D06	

Changelog for the datasheet

SPE-21-8-003 - FXR.16.A

Revision: A (Original First Release)	
Date:	2021-01-15
Changes:	First Release
Changes Made by:	Tim Kelley

Previous Revisions

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