



AUBURN

UNIVERSITY

RFID LAB

TAG PERFORMANCE SPECIFICATIONS

VERSION 1.1

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1 TEST OVERVIEW

Prerequisite	ARC Quality certification of inlay manufacturer
Equipment	ARC Benchmarking Equipment Document
Test process	ARC Benchmarking Methodology Document
Frequency	902 MHz to 928 MHz in steps of 1 MHz
Distance between antennas and inlay	Antenna 1: 0.35 meter Antenna 2: 0.35 meter Antenna 3: 0.35 meter Antenna 4: 0.35 meter
Standard test configurations	Single Inlay on Cardstock
Custom test configurations	Single Inlay on Test Article

2 DESCRIPTION OF CUSTOM TEST CONFIGURATIONS

2.1 Single Inlay on Test Article

The inlay is measured when applied directly on the test article. The test article is placed on the testing platform as shown in Figure 1. The tagged article is placed on the platform such that the face of the inlay will be parallel to the face of antenna 1. The orientation of the tag and test article can optionally be specified by the inlay manufacturer.

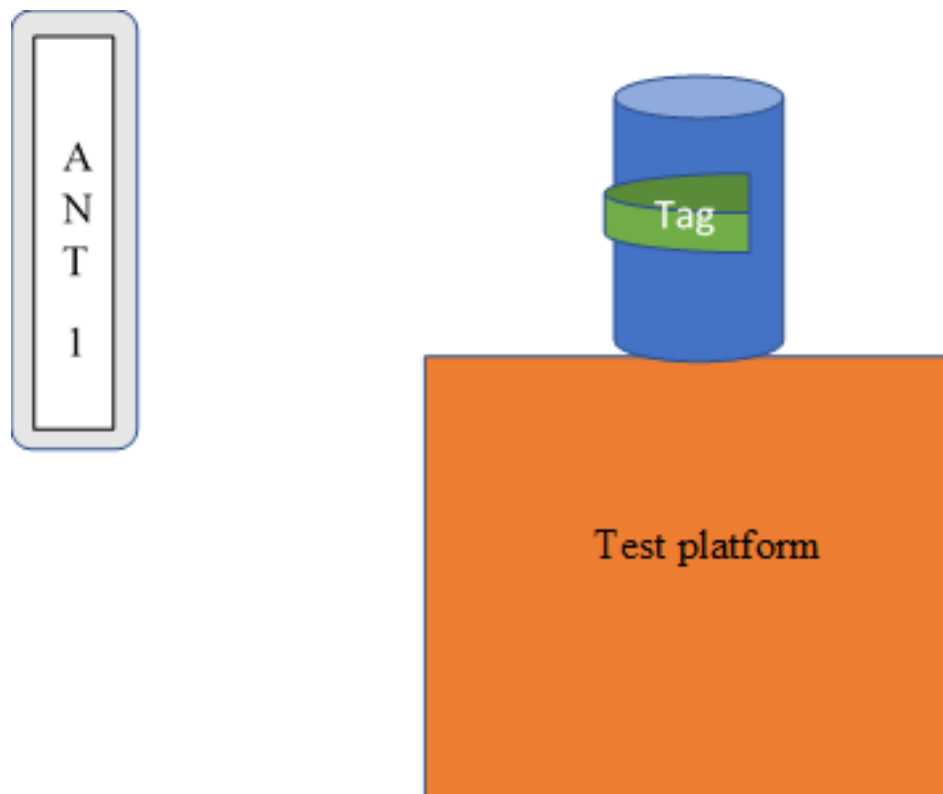


Figure 1: Single Inlay on Test Article



3 READ SENSITIVITY

The inlay should meet the following read sensitivity (dBm) requirements in the following test configurations through the frequency range. All of the inlay samples tested should meet the minimum requirements. It is noted that the sensitivity is calculated at the tag by calibrating the measured power at the transmitter with the loss/gain during transmission.

3.1 Standard Test - Single Inlay on Cardstock

Position 0 Ant 1	Position 0: Ant 2	Position 0: Ant 3	Position 0: Ant 4
5	7	6	5
Position 30: Ant 1	Position 30: Ant 2	Position 30: Ant 3	Position 30: Ant 4
8	8	9	8
Position 150: Ant 1	Position 150: Ant 2	Position 150: Ant 3	Position 150: Ant 4
8	8	9	8
Position 180: Ant 1	Position 180: Ant 2	Position 180: Ant 3	Position 180: Ant 4
5	7	6	5
Position 210: Ant 1	Position 210: Ant 2	Position 210: Ant 3	Position 210: Ant 4
8	8	9	8
Position 330 Ant 1	Position 330: Ant 2	Position 330: Ant 3	Position 330: Ant 4
8	8	9	8

3.2 Custom Test - Single Inlay on Test Article

Position 0 Ant 1	Position 0: Ant 2	Position 0: Ant 3	Position 0: Ant 4
6	NA	NA	NA



4. READ BACKSCATTER

The inlay should meet the following read backscatter (dBm) requirements in the following test configurations through the entire frequency range. The backscatter value in the table below is the minimum backscatter that should be observed at the corresponding minimum read sensitivity value in section 3. All of the inlay samples tested should meet the minimum requirements. It is noted that the backscatter is calculated at the tag by calibrating the measured power at the receiver with the loss/gain during transmission

4.1 Standard Test - Single Inlay on Cardstock

Position 0 Ant 1	Position 0: Ant 2	Position 0: Ant 3	Position 0: Ant 4
-38	-39	-39	-38
Position 180: Ant 1	Position 180: Ant 2	Position180: Ant 3	Position 180: Ant 4
-38	-39	-39	-38

4.2 Custom Test - Single Inlay on Test Article

Frequency 902 MHz to 928 MHz in steps of 1 MHz

Position 0 Ant 1	Position 0: Ant 2	Position 0: Ant 3	Position 0: Ant 4
-43	NA	NA	NA



5. WRITE SENSITIVITY

The inlay should meet the following write sensitivity (dBm) requirements in the following test configurations through the frequency range. All of the inlay samples tested should meet the minimum requirements. It is noted that the sensitivity is calculated at the tag by calibrating the measured power at the transmitter with the loss/gain during transmission.

5.1 Standard Test - Single Inlay on Cardstock

Position 0 Ant 1	Position 0: Ant 2	Position 0: Ant 3	Position 0: Ant 4
12	NA	NA	NA
Position 180: Ant 1	Position 180: Ant 2	Position180: Ant 3	Position 180: Ant 4
12	NA	NA	NA