

APPROVAL SHEET

MESSRS. (주)아이디로

ITEM : Quadrifilar Wideband Antenna

PART NAME : MQWA70F55SP966-A

MODEL NAME : IDRO 900H

REVISION : 0

ISSUE DATE : March 22, 2024

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RoHS**H/F**

Title	RFID Quadrifilar Wideband Ant. Specification
Document Number	MAC-08-02-05-24003
Revision & Date	0 & March 22, 2024
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Revision Log

This log identifies those portions of this document, which have been revised since the original issue and the date of each revision.

Rev.	Authorizing Document	Summary of Changes to Previous Version	Date	Approval

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1. Scope.

This specification covers the characteristics of the quadrifilar wideband antenna element for the ISM band.

2. Part Name Information.

Part Name : M QWA 70F55S P 966 – A
 ① ② ③ ④ ⑤ ⑥

- ① : MAC technologies Inc.
- ② : Quadrifilar Wideband Antenna
- ③ : 70 mm Bottom substrate, 55 mm Top substrate Square (Size)
- ④ : 17 mm Thickness (A : 2 mm, B : 3 mm, C : 4 mm, D : 5 mm ...)
- ⑤ : Center Frequency : 966 MHz (± 3 MHz)
- ⑥ : Assembly – Cable

3. Composition and Materials.

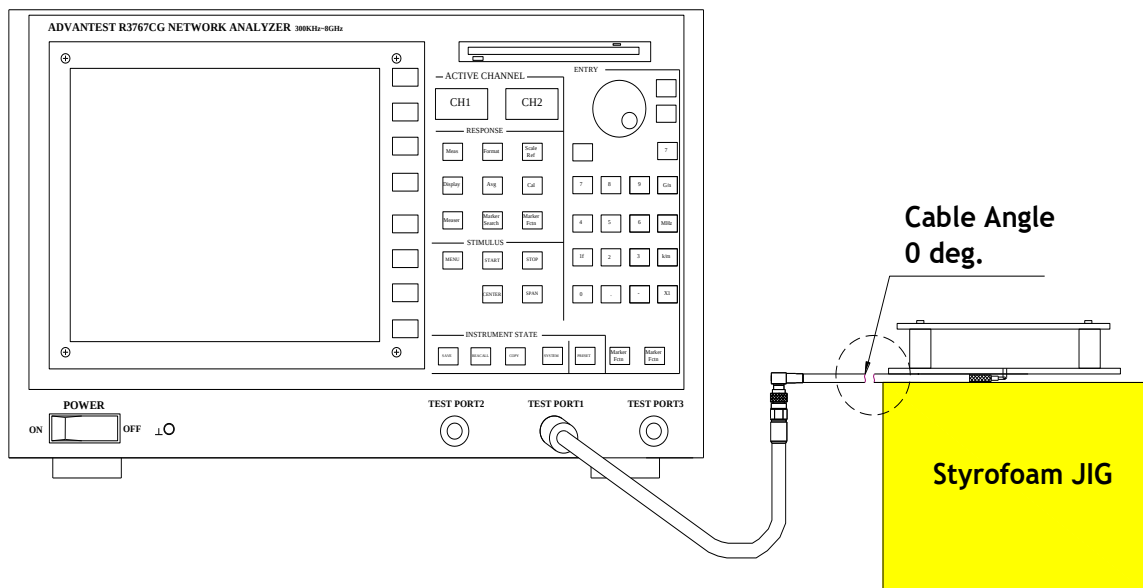
- 3-1. Substrate : Keeping a secret from outsiders
- 3-2. Metal Connector : Metal and teflon
- 3-3. Halogen Free

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5. Electrical Specifications.

NO.	Parameter	Spec.		Unit	Remark
		Cable Ass'y	Set Ass'y		
1	Center Frequency	966.0 $\pm$ 3	919.0 $\pm$ 3	MHz	
2	Peak Gain	typ.	-0.7 typ.	dBiL	@919 MHz
		typ.	1.7 typ.	dBiC	
3	Polarization	RHCP	RHCP		
4	Beam Width	typ.	110 typ.	Deg.	
5	Band Width	typ.	280 typ.	MHz	
6	VSWR	max.	2.0 : 1 max.	Ratio	
7	Impedance	50	50	Ohm	

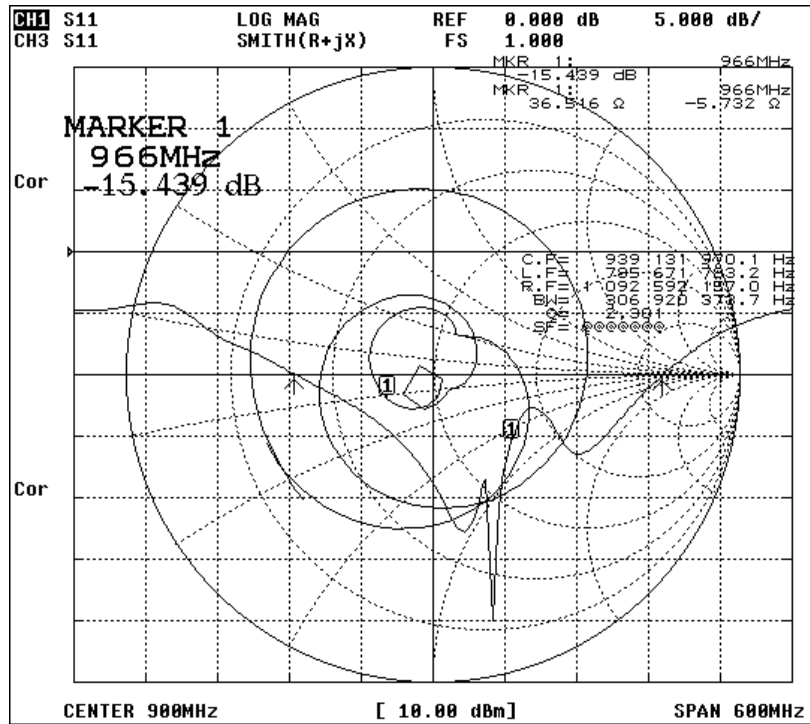
6. Test Fixture.



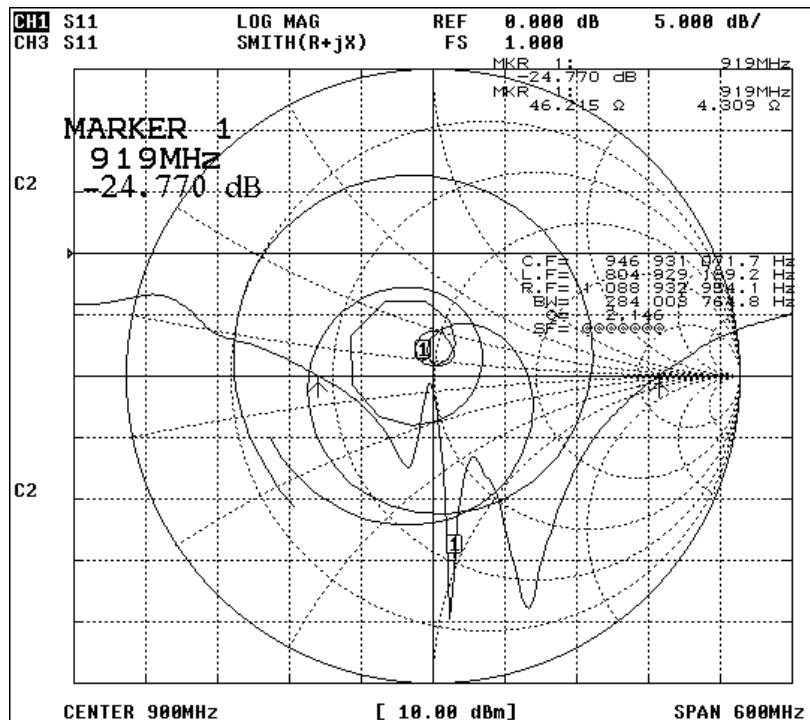
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7. S11 Measurement Data.

7-1. Cable Ass'y



7-2. Set Ass'y



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8. Environmental Specifications.

** Operation conditions : Temperature range : -30 °C ~ +85 °C

Humidity range : 45 ~ 85 % RH

The device should satisfy the electrical characteristics specified in paragraph 5 after the following tests.

Measurements should be done after putting in the typical condition (20~30 °C / 55~75 % RH) for 2 hours minimum.

8-1. Temperature Characteristics

The device should satisfy the electrical characteristics specified in paragraph 5 at the temperature range of -30 °C ~ +85 °C.

8-2. Heat Proof

The device should satisfy the electrical characteristics specified in paragraph 5 after exposed to the temperature 85 ± 2 °C for 72 hours.

8-3. Cold Proof

The device should satisfy the electrical characteristics specified in paragraph 5 after exposed to the temperature -30 ± 2 °C for 72 hours.

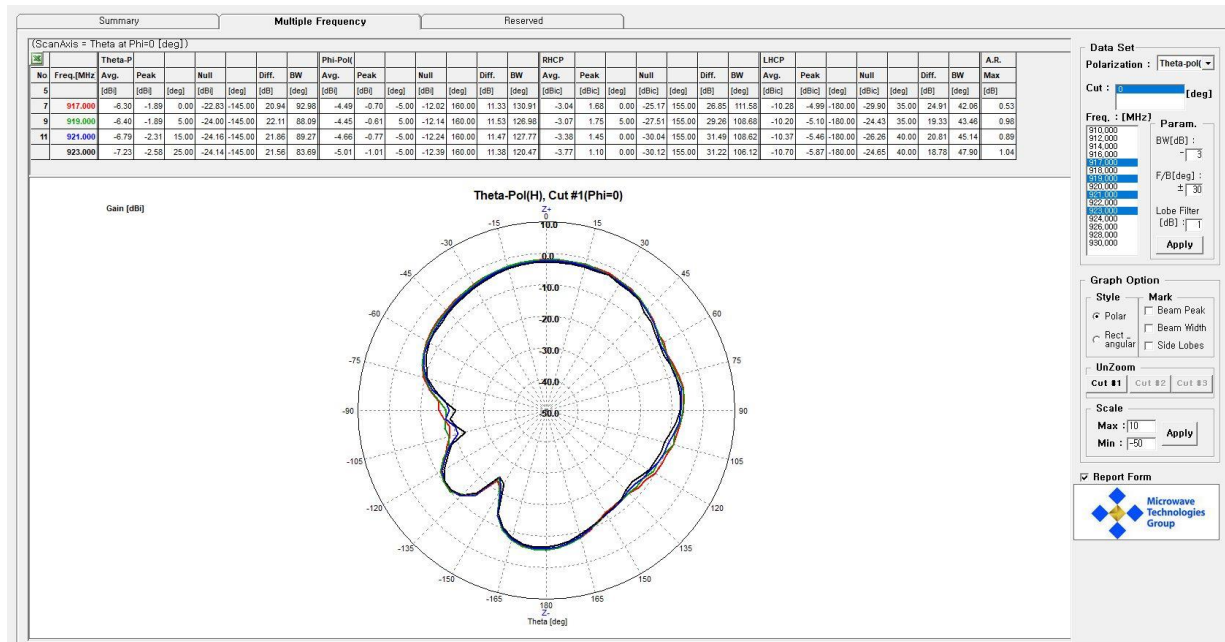
8-4. Moisture Proof

The device should satisfy the electrical characteristics specified in paragraph 5 after exposed to the temperature 40 ± 2 °C and the humidity 95 % RH for 72 hours.

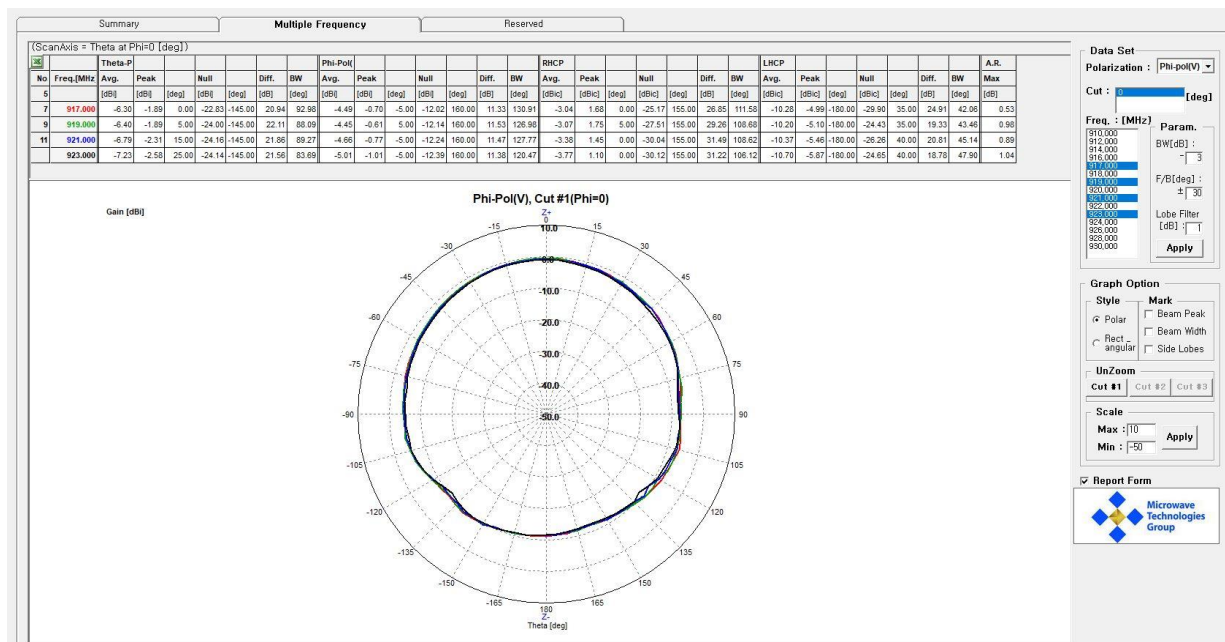
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9. Radiation Patterns after Set Ass'y

9-1. H-pol. (Frequency 917.0, 919.0, 921.0, 923.0 MHz)



9-2. V-pol. (Frequency 917.0, 919.0, 921.0, 923.0 MHz)

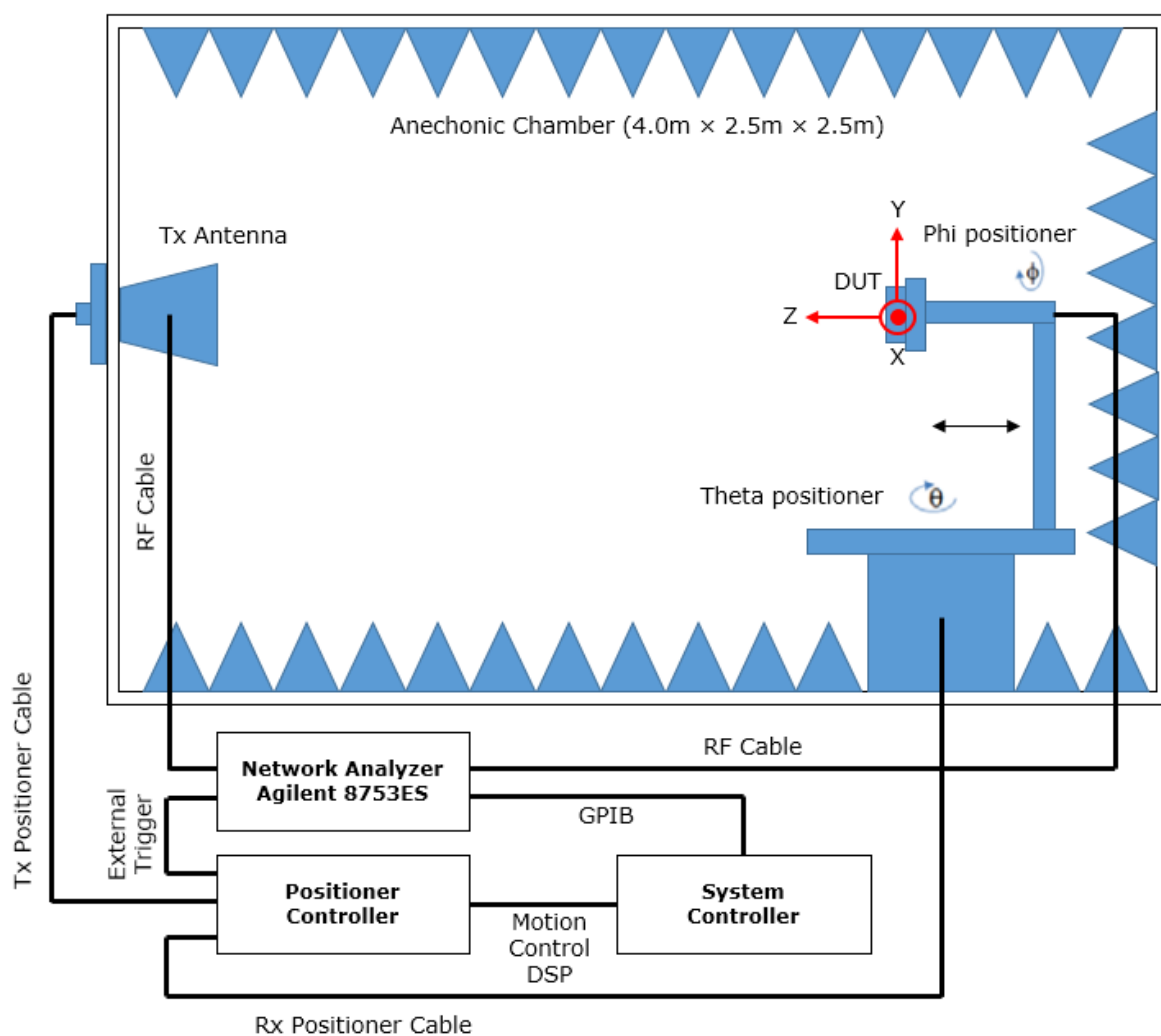


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9-3. Gain Test Data

Source Antenna Polarization	Frequency			
	917.0 MHz	919.0 MHz	921.0 MHz	923.0 MHz
H-pol. (dBiL)	-1.89	-1.89	-2.31	-2.58
V-pol. (dBiL)	-0.70	-0.61	-0.77	-1.01
RHCP (dBiC)	1.68	1.75	1.45	1.10

9-4. Gain Measurement System



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9-5. List of Equipments (MAC technologies Inc.)

NO	Equipments	Maker	Model No.	S/N	Specification	Note
1	Anechoic Chamber	MTG	Mobile Chamber		4.0 m X 2.5 m X 2.5 m (0.4 ~ 3 GHz)	
2	Network Analyzer	Agilent	8753ES	US39173213	30 KHz ~ 6 GHz	
3	Dual-Polarization Horn Antenna with RF Switch	MTG	QRH-004060/ RSW-001060		0.4 GHz ~ 6 GHz	Source
4	Calibration Antenna	Schwarzbeck Mess - Elektronik	BBHA 9120 A	1201	0.8 GHz ~ 5 GHz	Reference
5	Absorber Installation	EMERSON & CUMING	SABS-003 18"		Reflectivity : -25 dB @ 0.8 GHz -30 dB @ 1.0 GHz	

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10. Remark.

- If there is any doubt in this specification and product, it should be resolved between made and manufacture.
- Don't handling by unarmed.
- No responsibility is assumed by us for any consequence resulting from any wrong or improper use or operation, etc. of the product.
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