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<p><b>Title:</b> Smart-EX 03 antenna specification</p>	<p><b>Revision:</b> B</p>	
<p><b>Prepared by:</b> TKurj</p>	<p><b>Issue Date:</b> &lt;2023-11-28&gt;</p>	

# *Smart-EX 03* Antenna specification


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## 1. TEST EQUIPMENT LIST

Description	Manufacturer	Model	S/N
Antenna chamber (5.44m x 3.04m x 3.04m)	ETS-Lindgren	RFD-F/A-100	2633
Dual Polarized Horn antenna	ETS-Lindgren	3164-03	1021
MAPS Positioner	ETS-Lindgren	EMCO 2015	
Dual-axis Controller	ETS-Lindgren	EMCO 2092	21223
RF Switches	ETS-Lindgren	EMCenter	242977
Amplifiers	ETS-Lindgren	SAM-01/09	
Measurement SW	ETS-Lindgren	EmQuest EMQ-100	
Spectrum Analyzer	R&S	FSP	100052, 100053
Radio Communication Tester	R&S	CMW500	1201.000 2K50- 107132
Radio Communication Tester	Anritsu	MT8000A	62724583 16
Calibration antenna	ETS-Lindgren	3126-600	
Calibration antenna	ETS-Lindgren	3126-600	
Calibration antenna	ETS-Lindgren	3115	

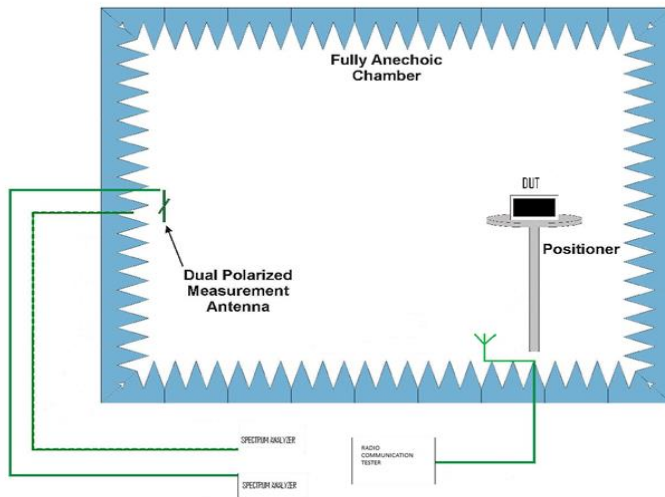
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## 2. MEASUREMENT STANDARD

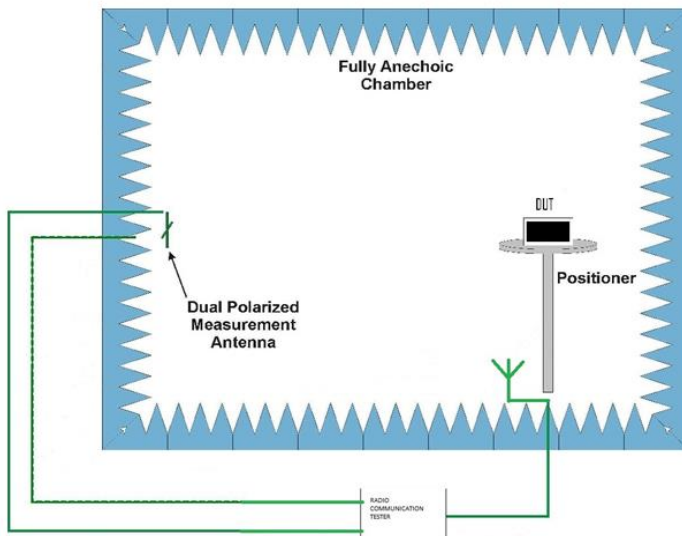
CTIA-Certification-Test-Plan-for-SISO-Over-the-Air-Performance-3.9.5


## 3. TEST SETUP

Measurement setup TRP



Measurement setup TIS



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## 4. WWAN ANTENNAS

### 4.1. Antenna Types

- PIFA Antennas (LDS technology)

### 4.2. Peak Gain

	600-700Mhz	700-800Mhz	800-900Mhz		
<b>Peak EIRP (dBm)</b>	19.3	21.8	21.4		
<b>Gain (dBi)</b>	-2.4	-1.0	-1.2		
	1700-1800Mhz	1800-1900Mhz	1900-2000Mhz	2300Mhz	2500-2700Mhz
<b>Peak EIRP (dBm)</b>	23.1	23.1	22.4	23.5	22.0
<b>Gain (dBi)</b>	0.5	2.0	-0.2	0.9	-0.4
	3300-3800Mhz	3800-4200Mhz	4200-5000Mhz		
<b>Peak EIRP (dBm)</b>	27.5	21.5	19.1		
<b>Gain (dBi)</b>	2.5	-2.9	-4.2		

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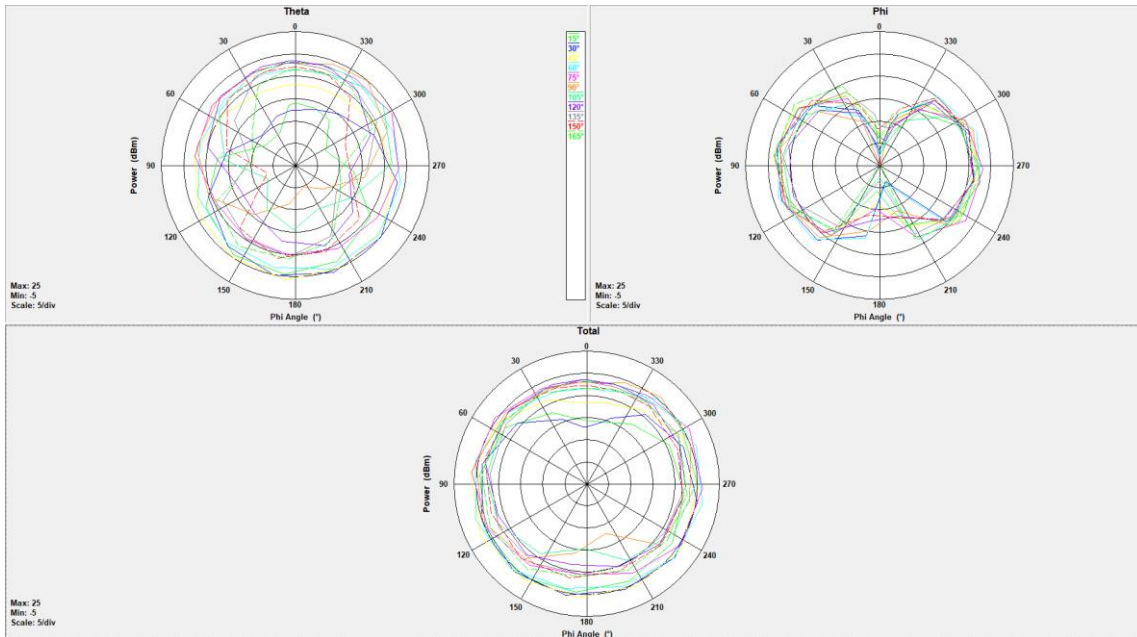
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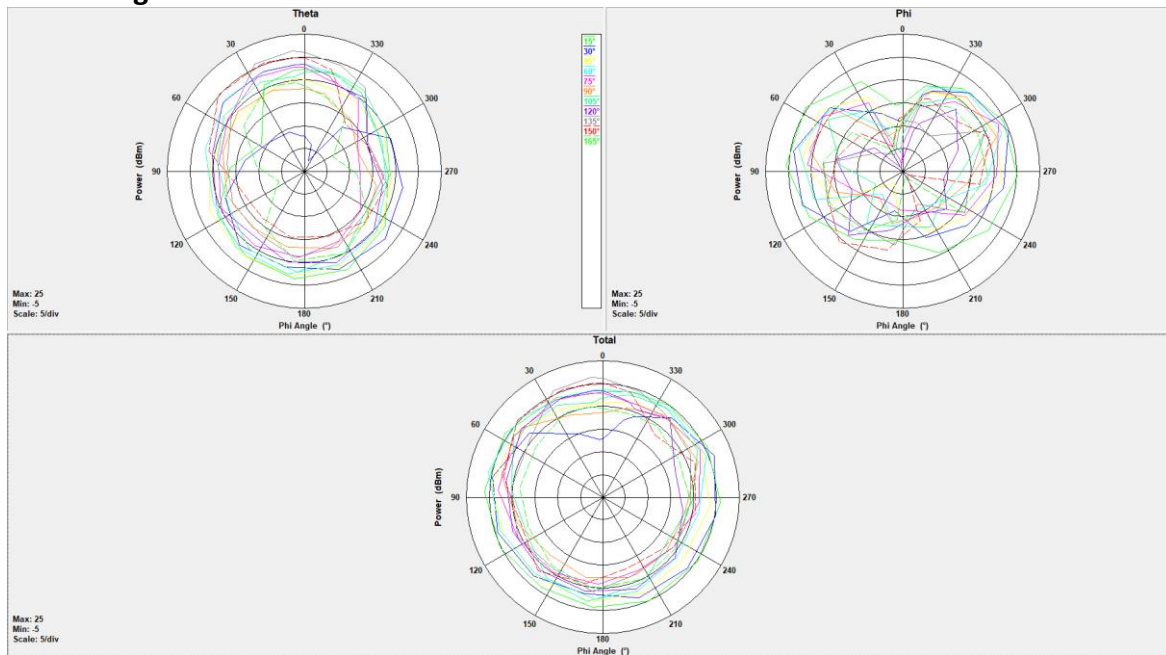
**Issue Date:** <2023-11-28>

### 4. 3. WWAN Patterns

#### Low Band:



#### Middle High Band:



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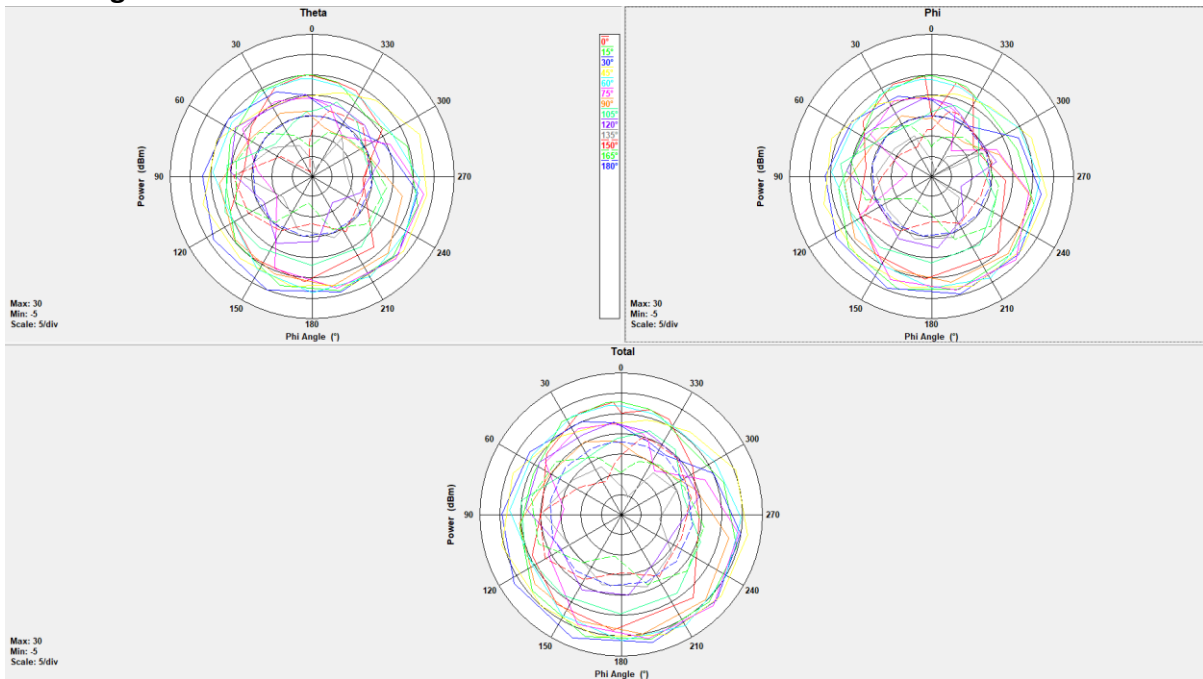
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**Ultra-High Band:**



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## 5. WIFI ANTENNAS

### 5.1. Antenna Types

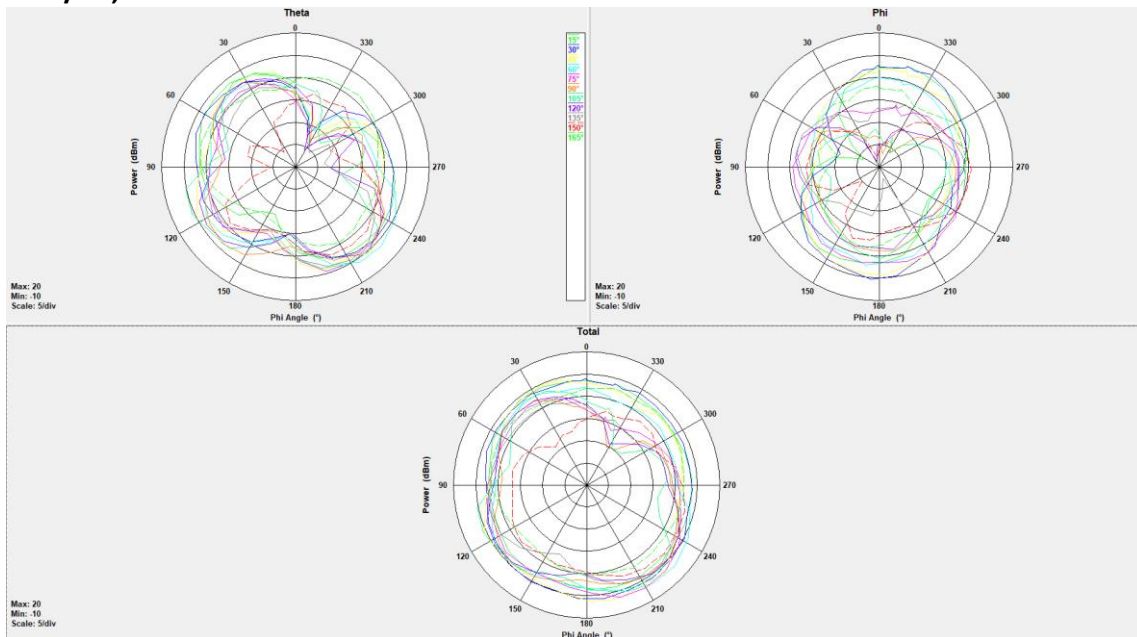
- PIFA Antennas (LDS technology)

### 5.2. Peak Gain

	2400-2500Mhz	5180-5900Mhz	5900-71250Mhz
<b>Peak EIRP (dBm)</b>	16.2	19.8	19.4
<b>Gain (dBi)</b>	-0.1	1.6	1.7

### 5.3. WIFI Patterns

#### WIFI/BT, 2.4GHz





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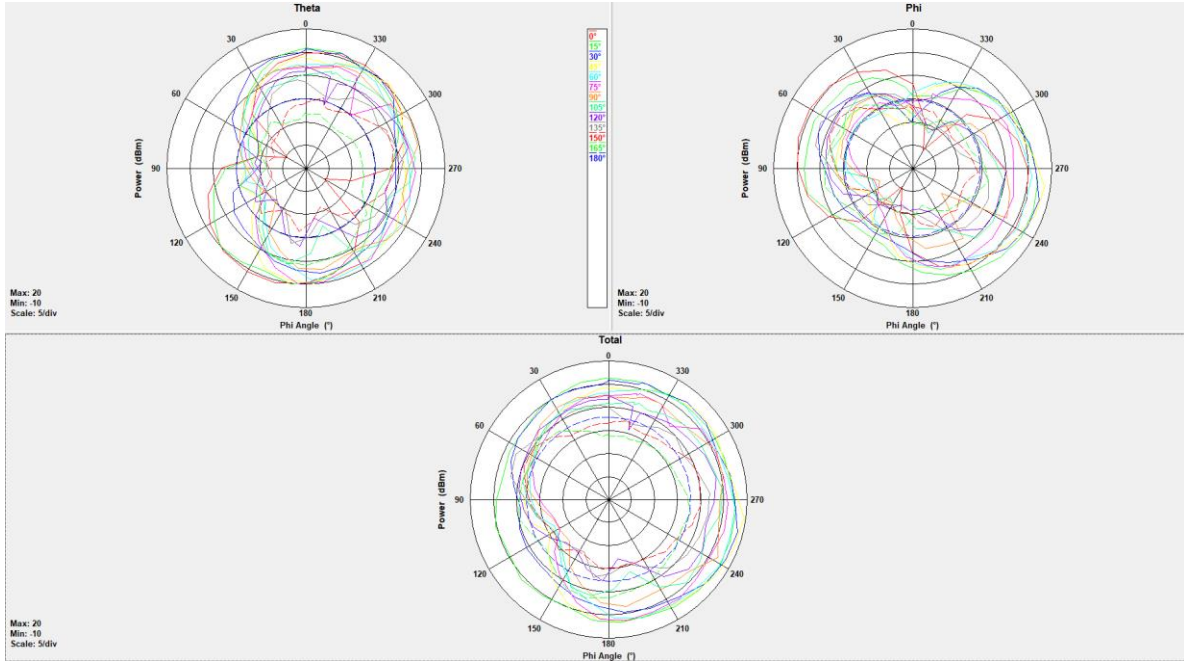
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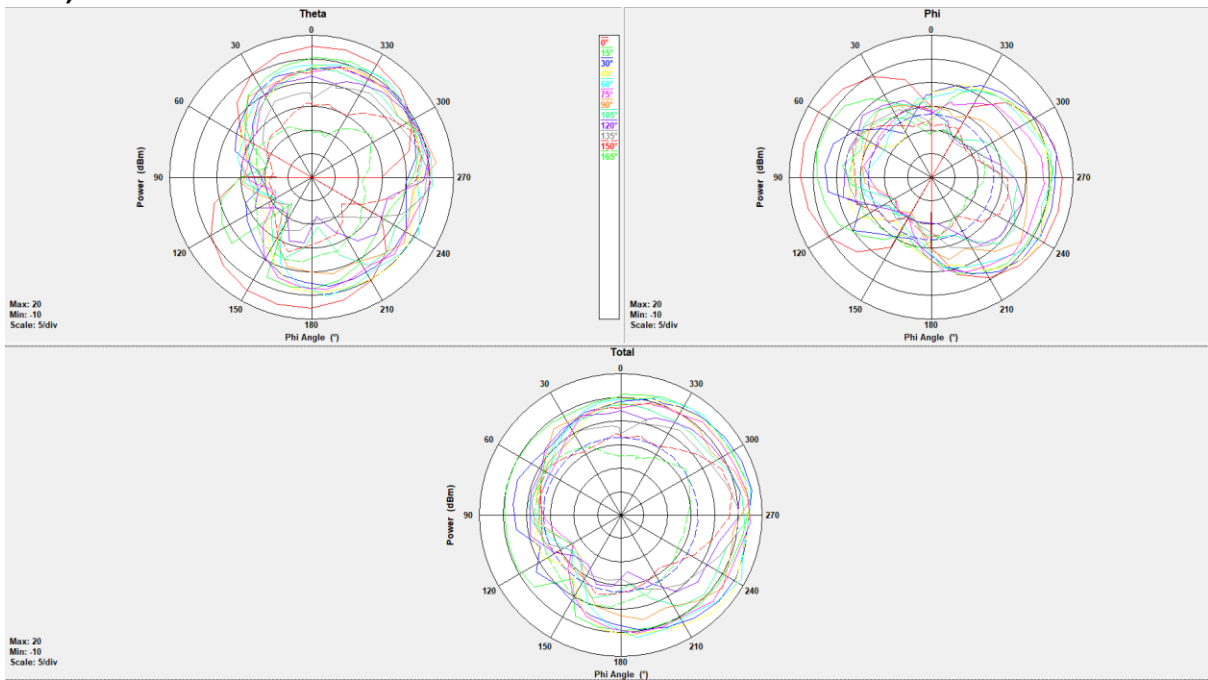
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### WIFI, 5GHz



### WIFI, 6GHz





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**Reviewed By**

Role	Name
GPM	
R&D Manager	
Chief Engineer	

**Approved By**

Role	Name	Signature	Date (YYYY-MM-DD)
GPM			