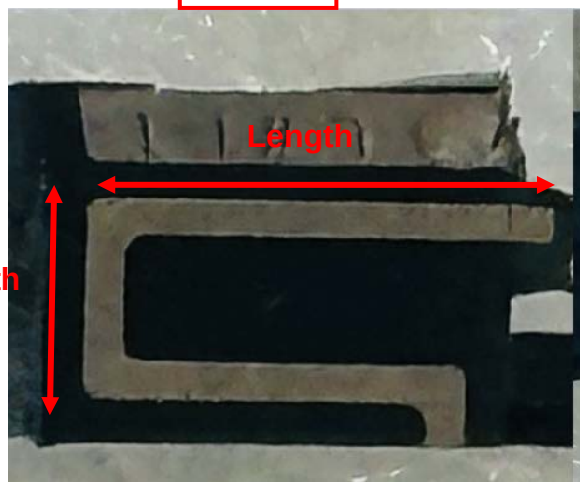
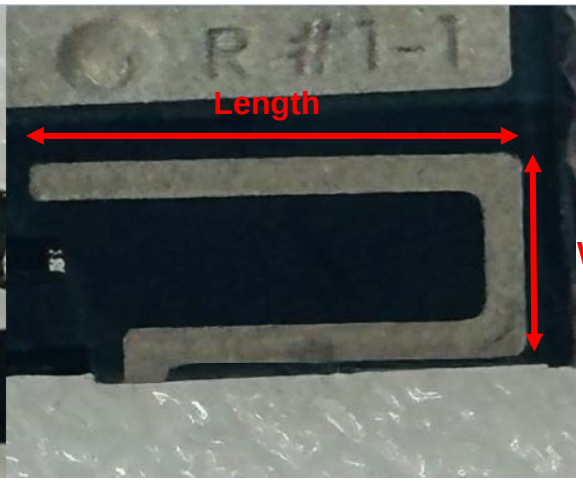
Antenna Information

Item	Contents	
Antenna Type	LDS Antenna	
Antenna peak gain	Left	-7.3 dBi
	Right	-7.3 dBi
Manufacturer / Model name	Left	KYOCERA AVX INC. / SM-R630 LEFT BT INTENNA
	Right	KYOCERA AVX INC. / SM-R630 RIGHT BT INTENNA
Address of manufacturer	1 Avx Blvd, Fountain Inn, SC 29644, USA	
Test Laboratory	KYOCERA AVX INC.	
Left Antenna Length	0.7 cm	
Left Antenna Width	0.4 cm	
Right Antenna Length	0.7 cm	
Right Antenna Width	0.4 cm	

Left



Right



Model name: SM-R630

DESIGN SPECIFICATION
Part Number: LT31453 (SM-R630)
Rev. A

DESIGN SPECIFICATION

DESIGN	**INTERNAL ANTENNA**
MODEL / TYPE	**SM-R630 LEFT BT INTENNA**
KYOCERA AVX P/N	**LT31453**
SEC CODE	**GH42-07066A**
CUSTOMER	**SAMSUNG ELECTRONICS CO., LTD.**
SUPPLIER	**KYOCERA AVX INC.**
TEST DATE	**2024.03.19**

ENGINEERING MANAGER CHECKED	MECHANICAL MANAGER CHECKED	DESIGN MANAGER CHECKED
CS Ma	JC Kim	KJ Chun

LEAD-FREE

MSL 1

2. ELECTRICAL SPECIFICATION FOR SM-R630

2.1. Frequency Band

Mode	Frequency Band (MHz)
BT	2,400~2,485 MHz

2.2. Electrical Characteristics

2.2.1. VSWR

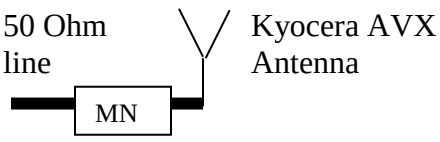
< wireless earphone mounted typical measurements >

Frequency Range	2,400 MHz	2,485 MHz
V.S.W.R	1.2 ± 0.5:1	1.1 ± 0.5:1

<BT Antenna>

Matching Requirements

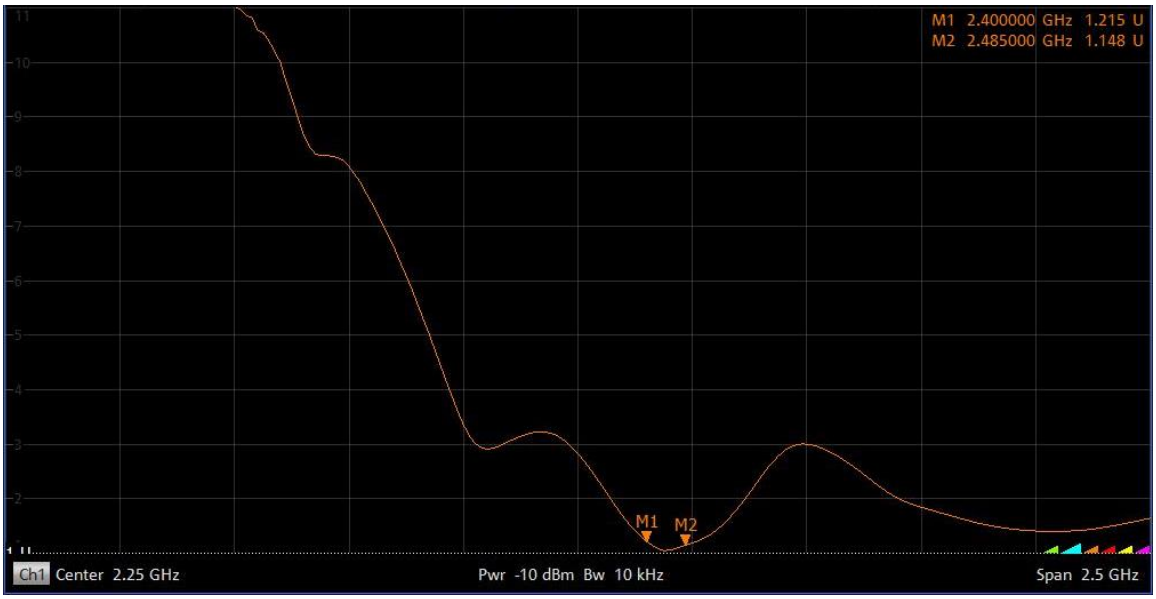
In order to assure the best performance of the antenna, the matching will be evaluated in free space and in talk position. The antenna will comply with the Electrical Specification requirements, as set out below, while mounted on the Smart Watch containing the PCB. The Smart Watch and PCB are to be provided by the customer and should be representative of the latest design version of all parts. Any modifications in the Smart Watch or PCB can affect the performance of the antenna and should be discussed with Kyocera AVX to determine the affect of such changes on the antenna performance and delivery requirements.



Optional matching network to be
determined by SAMSUNG RF team if needed.

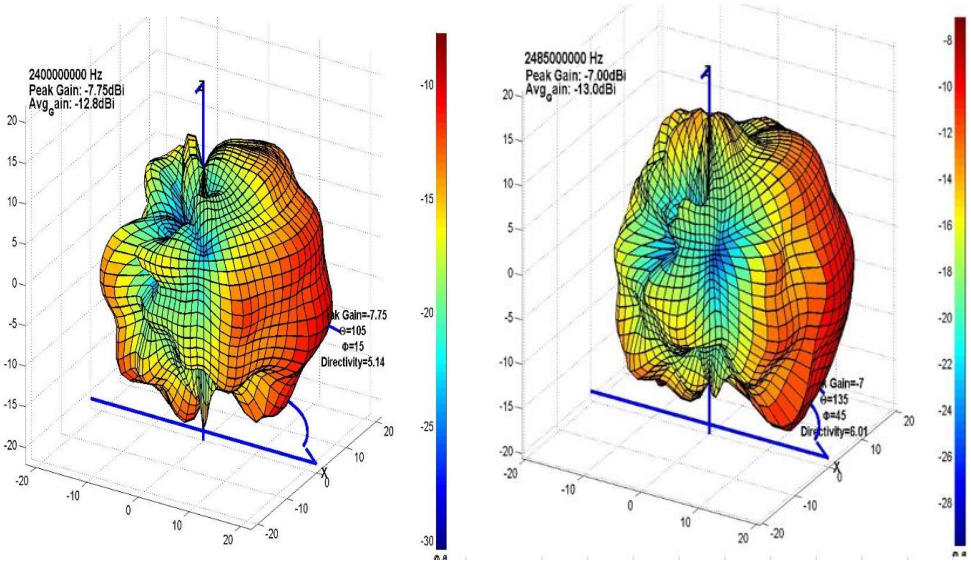
2.3. Passive Measurement

2.3.1. Input Return Loss and VSWR



BT Antenna

2.4. SM-R630 LEFT BT INTENNA



< Wireless earphone mounted typical measurements>

Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2,400,000,000 Hz	5.1 %	-15.0 dBi	-17.1 dBi	-12.9 dBi	-8.2 dBi	-9.0 dBi	-7.8 dBi
2,417,000,000 Hz	5.7 %	-14.6 dBi	-16.4 dBi	-12.4 dBi	-7.7 dBi	-8.6 dBi	-7.3 dBi
2,434,000,000 Hz	5.8 %	-14.7 dBi	-16.2 dBi	-12.4 dBi	-7.7 dBi	-8.2 dBi	-7.3 dBi
2,451,000,000 Hz	5.3 %	-15.4 dBi	-16.2 dBi	-12.8 dBi	-8.3 dBi	-8.2 dBi	-7.3 dBi
2,468,000,000 Hz	4.7 %	-16.1 dBi	-16.5 dBi	-13.3 dBi	-9.3 dBi	-8.4 dBi	-7.5 dBi
2,485,000,000 Hz	5.0 %	-15.9 dBi	-16.2 dBi	-13.0 dBi	-9.6 dBi	-8.1 dBi	-7.0 dBi

DESIGN SPECIFICATION
Part Number: LT31454 (SM-R630)
Rev. A

DESIGN SPECIFICATION

DESIGN	**INTERNAL ANTENNA**
MODEL / TYPE	**SM-R630 RIGHT BT INTENNA**
KYOCERA AVX P/N	**LT31454**
SEC CODE	**GH42-07067A**
CUSTOMER	**SAMSUNG ELECTRONICS CO., LTD.**
SUPPLIER	**KYOCERA AVX INC.**
TEST DATE	**2024.03.19**

ENGINEERING MANAGER CHECKED	MECHANICAL MANAGER CHECKED	DESIGN MANAGER CHECKED
CS Ma	JC Kim	KJ Chun

LEAD-FREE

MSL 1

2. ELECTRICAL SPECIFICATION FOR SM-R630

2.1. Frequency Band

Mode	Frequency Band (MHz)
BT	2,400~2,485 MHz

2.2. Electrical Characteristics

2.2.1. VSWR

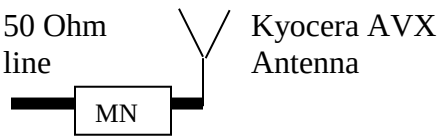
< wireless earphone mounted typical measurements >

Frequency Range	2,400 MHz	2,485 MHz
V.S.W.R	1.1 ± 0.5:1	1.2 ± 0.5:1

<BT Antenna>

Matching Requirements

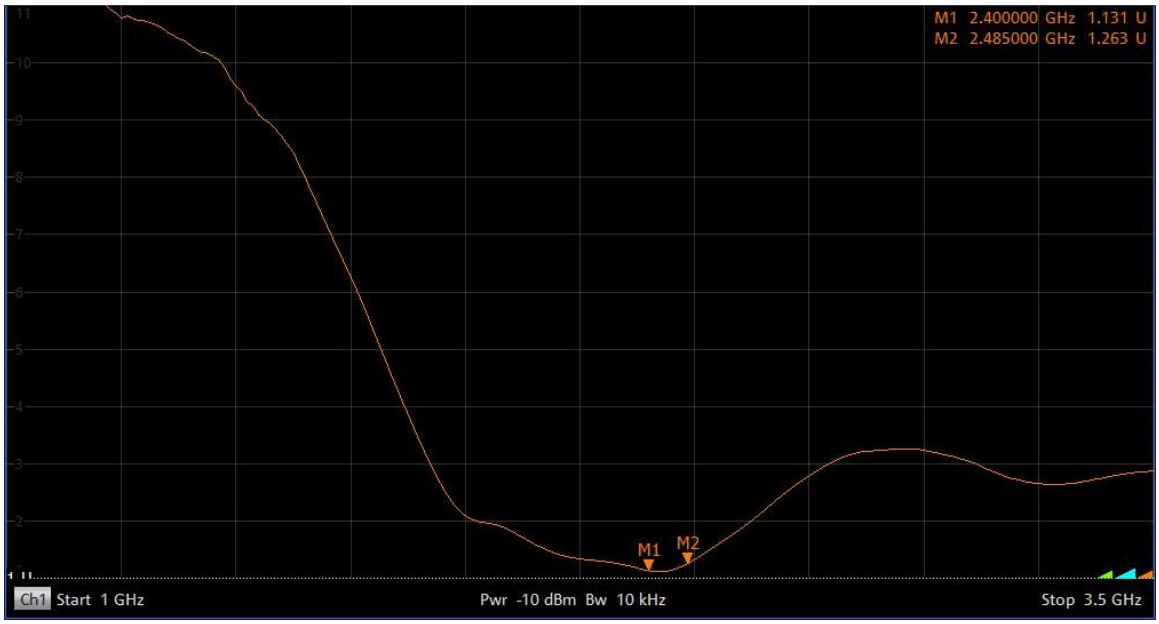
In order to assure the best performance of the antenna, the matching will be evaluated in free space and in talk position. The antenna will comply with the Electrical Specification requirements, as set out below, while mounted on the Smart Watch containing the PCB. The Smart Watch and PCB are to be provided by the customer and should be representative of the latest design version of all parts. Any modifications in the Smart Watch or PCB can affect the performance of the antenna and should be discussed with Kyocera AVX to determine the affect of such changes on the antenna performance and delivery requirements.



Optional matching network to be
determined by SAMSUNG RF team if needed.

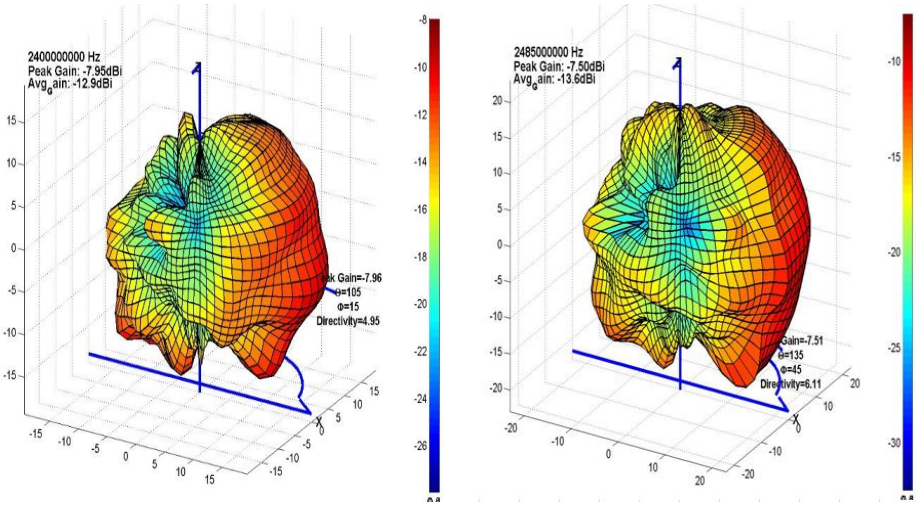
2.3. Passive Measurement

2.3.1. Input Return Loss and VSWR



BT/WIFI Antenna

2.4. SM-R630 RIGHT BT INTENNA



< wireless earphone mounted typical measurements>

Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2,400,000,000 Hz	5.1 %	-15.1 dBi	-16.9 dBi	-12.9 dBi	-8.4 dBi	-8.7 dBi	-8.0 dBi
2,417,000,000 Hz	5.5 %	-14.9 dBi	-16.4 dBi	-12.6 dBi	-8.1 dBi	-8.4 dBi	-7.7 dBi
2,434,000,000 Hz	5.6 %	-15.1 dBi	-16.1 dBi	-12.5 dBi	-8.0 dBi	-8.0 dBi	-7.3 dBi
2,451,000,000 Hz	4.8 %	-16.0 dBi	-16.5 dBi	-13.2 dBi	-8.9 dBi	-8.3 dBi	-7.6 dBi
2,468,000,000 Hz	4.1 %	-16.8 dBi	-16.9 dBi	-13.8 dBi	-9.8 dBi	-8.7 dBi	-7.9 dBi
2,485,000,000 Hz	4.3 %	-16.5 dBi	-16.7 dBi	-13.6 dBi	-10.1 dBi	-8.5 dBi	-7.5 dBi