



Building Block Overview
for

92710890 antenna doc

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Summary	Bluetooth antenna
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Version	V00.00.00 – Draft

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2 ANTENNA EVIDENCE REPORT

The antenna is a PIFA Coplanar Inverted F Antenna, the antenna is designed constructed as a meander type due to space constraints.

2.1 ANTENNA PERFORMANCE

Antenna performance is derived from the FCC part 15.247 measurement of the fundamental transmitter frequency. A marker readout of the fundamental is used to calculate the antenna gain.

Maximum antenna gain : -0.41 dBi

2.2 VERSION HISTORY

This table shows the version history of the document.

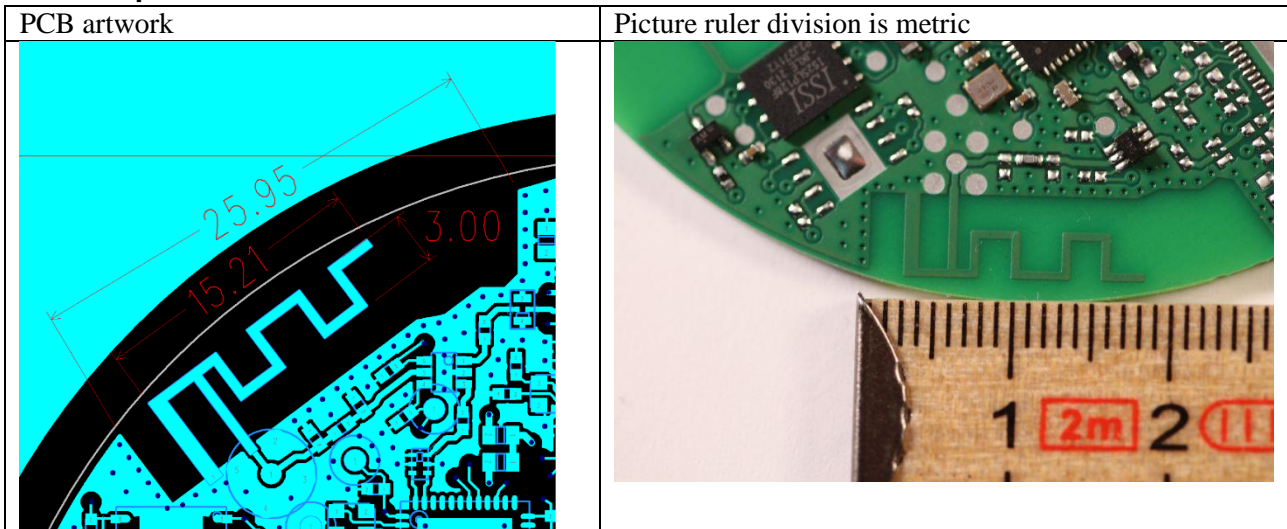
Date	Initials	Description	Version
2022-10-17	FNL	First draft	V00.00.01

Table 1 Version history

2.3 DESCRIPTION

The antenna is a PIFA Coplanar Inverted F Antenna, the antenna is designed as a meander type due to space constraints.

2.3.1 implementation



2.4 MAX ANTENNA GAIN

2.4.1 Emitted power measurements

C	Level dB[uV] max	Radiated power dBm
2402	96.30	1.1
2442	98.06	2.86
2480	95.92	0.72

2.4.2 Conducted power measurement

C	Radiated power dBm
2402	3.2
2442	3.27
2480	3.12

2.4.3 Antenna Gain calculation

Frequency MHz	Emitted power	Conducted power	Gain dBi
2402	1.1	3.2	-2,1
2442	2.86	3.27	-0.41
2480	0.72	3.12	-2,4

From the table above maximum antenna gain is -0.41 dBi

2.5 RESULTS FROM UL LABORATORY

2.5.1 UL field strength measurement 2402 MHz

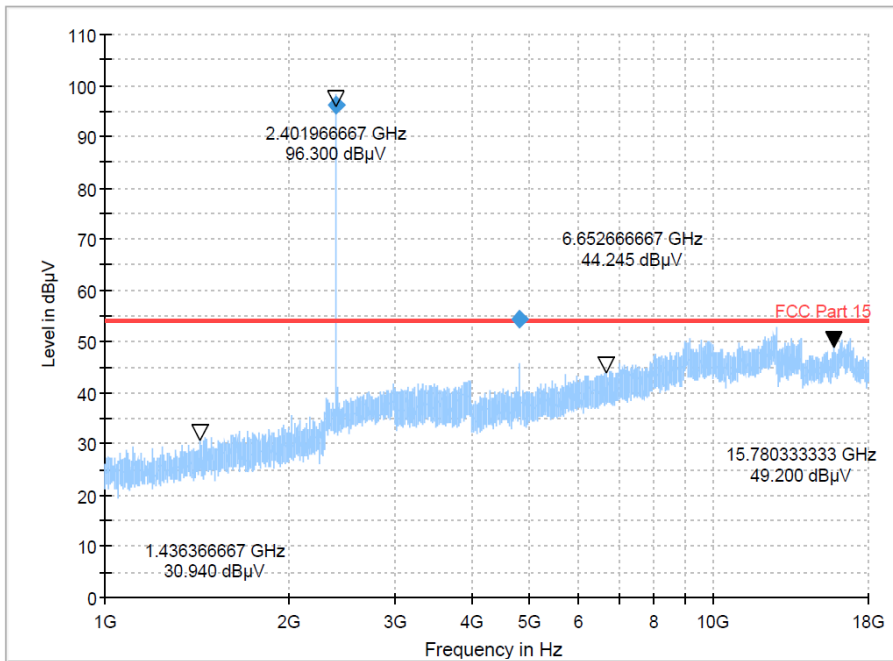
UL International Germany

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03.01_BT_LE_Tx_2402MHz

Common Information

Test Description:	FCC Part 15.247, Spurious Emissions 1 - 18 GHz
Operating Conditions:	BT LE 2402 MHz PN9
Test Conditions:	20.7 °C & 50.6 %
EUT Model:	
EUT S/N:	No 3
EUT Position:	EUT Laying
Operator Name:	Sercan Usta
Power Supply:	USB Powered



Final Result

Frequency (MHz)	MaxPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2401.966667	96.30	54.00	-42.30	1.0	1000.000	160.0	H	0.0	-4.3
4804.000000	54.49	54.00	-0.49	500.0	1000.000	120.0	V	0.0	6.3

2.5.2 UL field strength measurement 2442 MHz

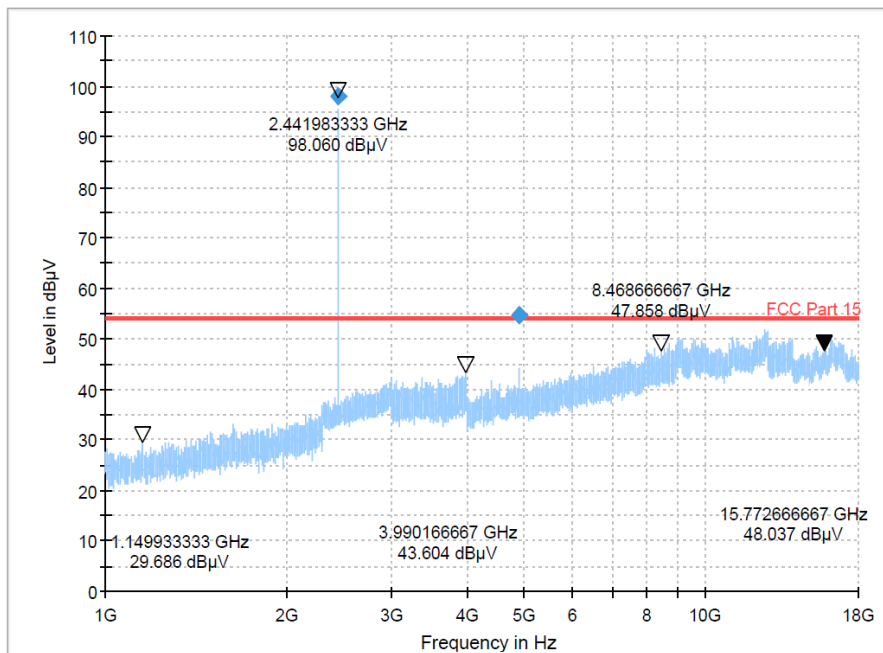
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03.02_BT_LE_Tx_2442MHz

Common Information

Test Description:	FCC Part 15.247, Spurious Emissions 1 - 18 GHz
Operating Conditions:	BT LE 2440 MHz PN9
Test Conditions:	20.7 °C & 50.6 %
EUT Model:	
EUT S/N:	No 3
EUT Position:	EUT Laying
Operator Name:	Sercan Usta
Power Supply:	USB Powered



Final Result

Frequency (MHz)	MaxPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2441.983333	98.06	54.00	-44.06	1.0	1000.000	100.0	H	0.0	-4.3
4884.666667	54.74	54.00	-0.74	500.0	1000.000	100.0	V	0.0	6.2

2.5.3 UL field strength measurement 2480 MHz

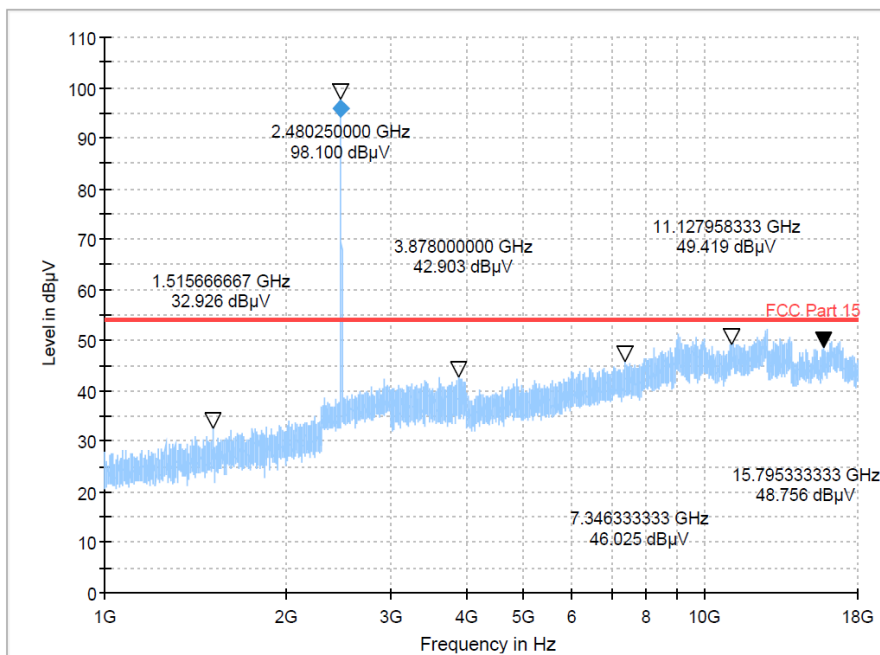
UL International Germany

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03.03_BT_LE_Tx_2480MHz

Common Information

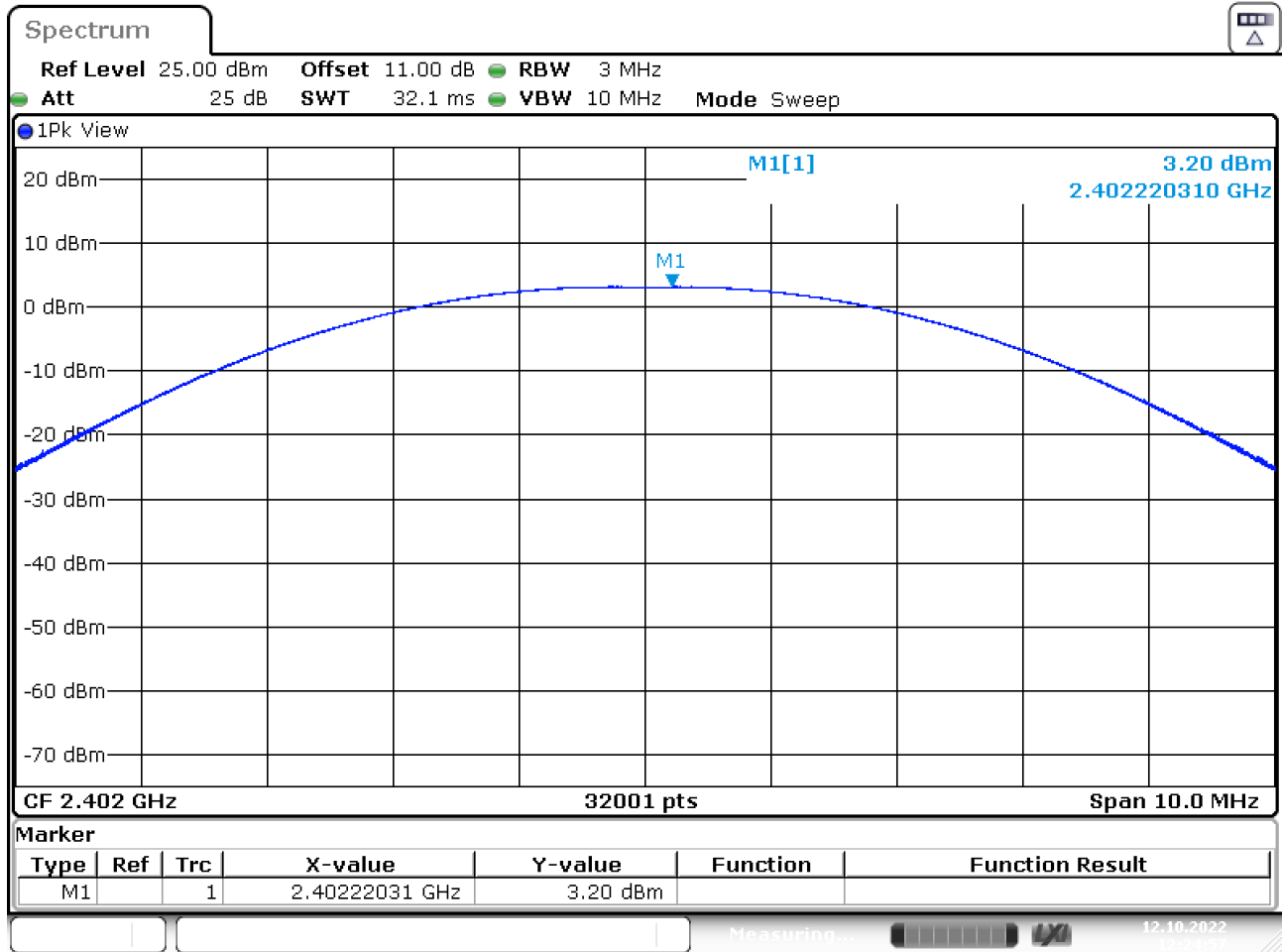
Test Description:	FCC Part 15.247, Spurious Emissions 1 - 18 GHz
Operating Conditions:	BT LE 2480 MHz PN9
Test Conditions:	20.7 °C & 50.6 %
EUT Model:	
EUT S/N:	No 3
EUT Position:	EUT Laying
Operator Name:	Sercan Usta
Power Supply:	USB Powered



Final Result

Frequency (MHz)	MaxPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2480.250000	95.92	54.00	-41.92	1.0	1000.000	120.0	H	0.0	-3.6

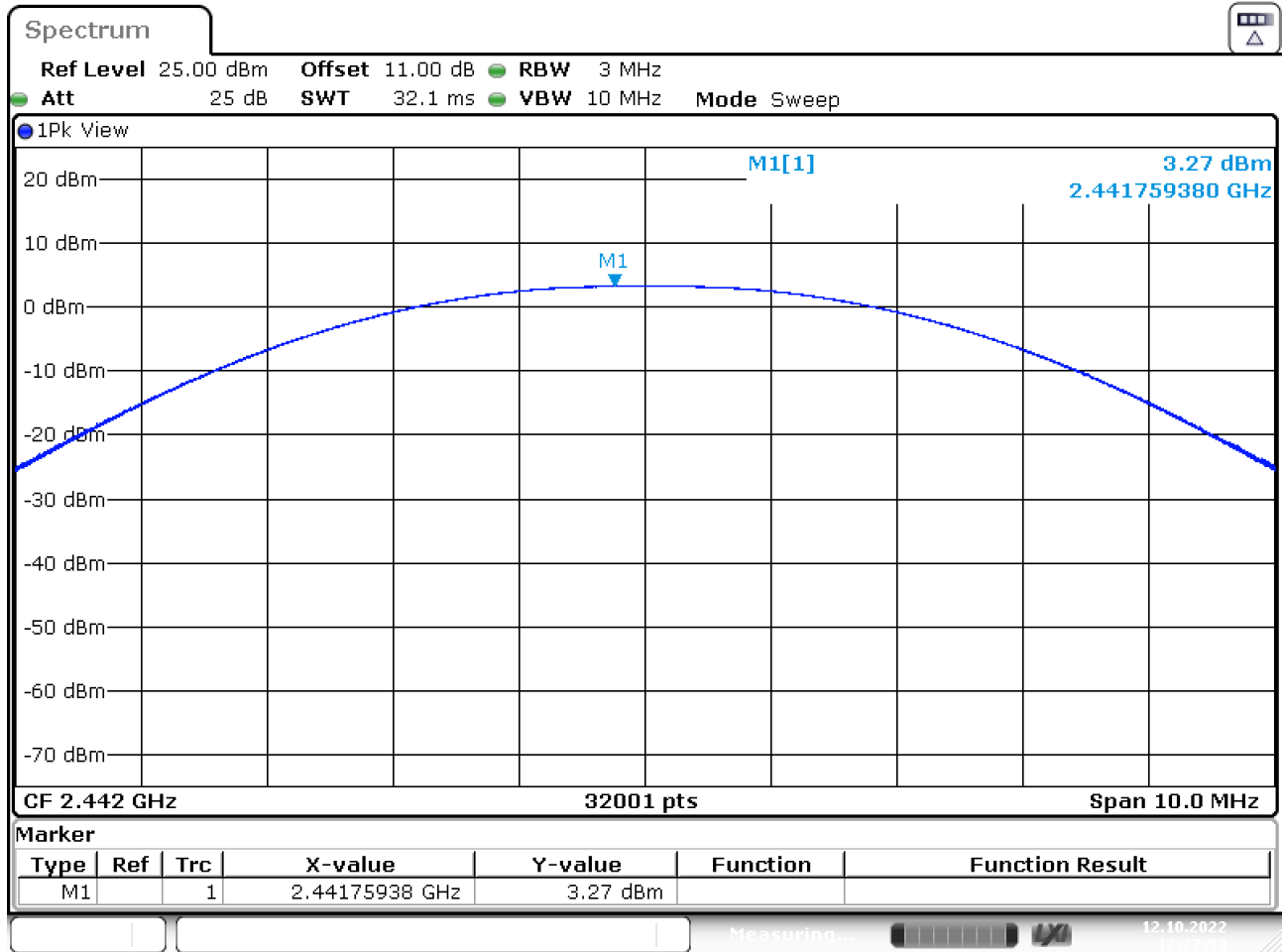
2.5.4 ULconducted TX power measurement 2402 MHz



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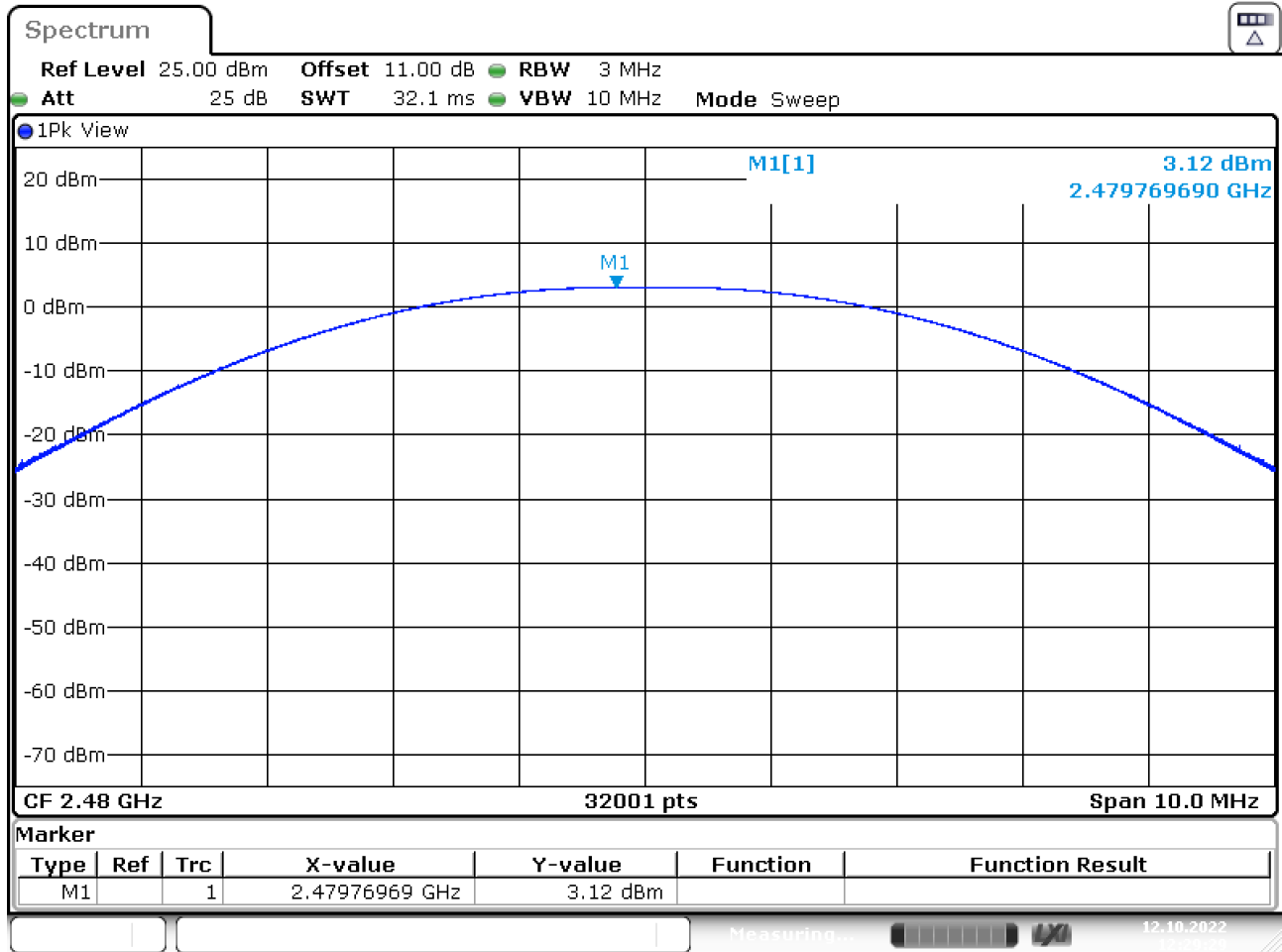
2.5.5 ULconducted TX power measurement 2442 MHz



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2.5.6 ULconducted TX power measurement 2480 MHz



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