

Regulatory WLAN Antenna Information for Greenland

Hitachi Cable, Ltd

1-6-1, Otemachi, Chiyoda-ku, Tokyo, Japan

Antenna Specifications

Antenna Type (Material, Technology)	Main & Aux & MIMO ; Monopole Type
Antenna Model Number	HMT02-DL01-AS(WH) HMT02-DL01-AS(K) HMT02-DL01-MS(W) HMT02-DL01-MS(K) HMT02-DL01-MS(H)
Operating Frequency Range(s)	2.40 – 2.4835 GHz / 4.90 – 5.875 GHz
Peak Gain (802.11b/g / 2.4GHz Band) (dBi)	Main 3.0 / Aux 2.3 / MIMO 0
Peak Gain (802.11a / 5GHz Band) (dBi)	Main 0.9 / Aux 2.1 / MIMO 1.7
Radio Connector Type	Micro Coaxial Connector
Mid-Line Connector Type (If Applicable)	Molex SSMCX Connector

Note: Peak Gain should include all system losses (connector, cable, etc)

Cable Specifications

Cable Parameters	Main			Aux			MIMO		
	LCD Side	Base Side	Total	LCD Side	Base Side	Total	LCD Side	Base Side	Total
Length (mm)	270	644	914	300	644	944	380	603	983
Loss (Including Connectors) (dB) 2.4 GHz / 5 GHz	0.7/ 1.2	1.6/ 2.7	2.3/ 3.9	0.8/ 1.3	1.6/ 2.7	2.4/ 4.0	1.0/ 1.6	1.5/ 2.6	2.5/ 4.2
Description (Color, Diameter, Manufacturer)	White ϕ 1.37 mm Hitachi Cable			Black ϕ 1.37 mm Hitachi Cable			Gray ϕ 1.37 mm Hitachi Cable		

Note: For single cable assembly (no mid-line connector), use the 'Total' column for each cable length and list N/A in the 'LCD' and 'Base' fields

Cable Loss should be reported for the total cable assembly (for both Main and Aux antennas)



(a) Main& MIMO Antenna



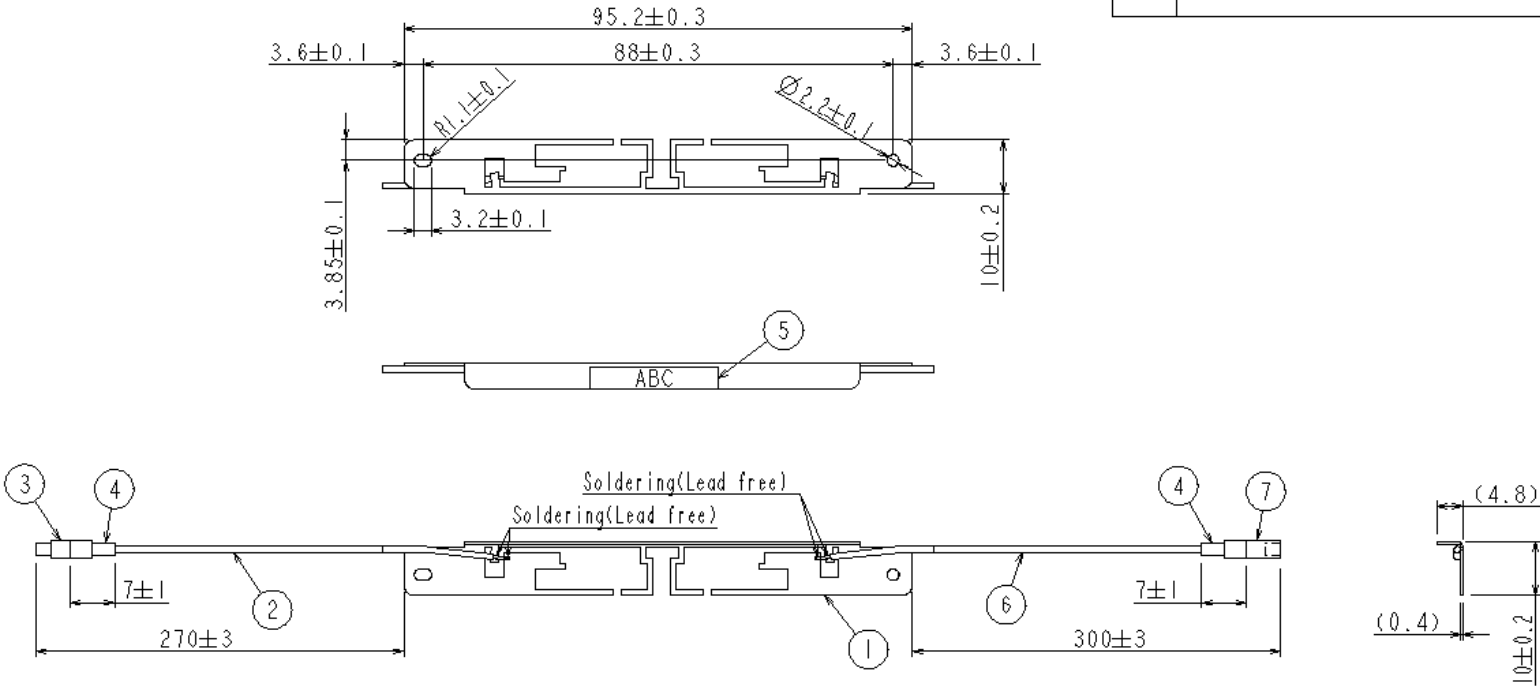
(b) Aux Antenna

Picture of Antenna installed in the notebook



Picture of Antenna

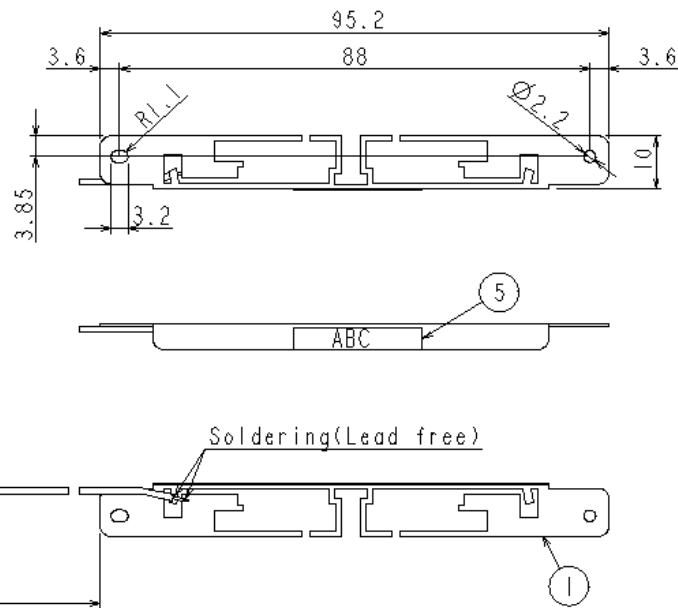
MARK	REVISION	DATE	NAME	CHKD.



No.	Description
①	Metal Plate Antenna(HMT02-L rev1)
②	Coaxial Cable(Ø1.37,White)
③	SSMCX PLUG
④	Heat Shrinkable tube SUMITUBE F34
⑤	Lable
⑥	Coaxial Cable(Ø1.37,Gray)
⑦	SSMCX JACK

DWN.		06.02.22	TITLE
CHKD.		REGD. PROJ.	
APPD.			HMT02-DL01-AS(WH)
SCALE.	N.T.S		
Hitachi Cable, Ltd. Hitaka Works			EH3855144

MARK	REVISION	DATE	NAME	CHKD.



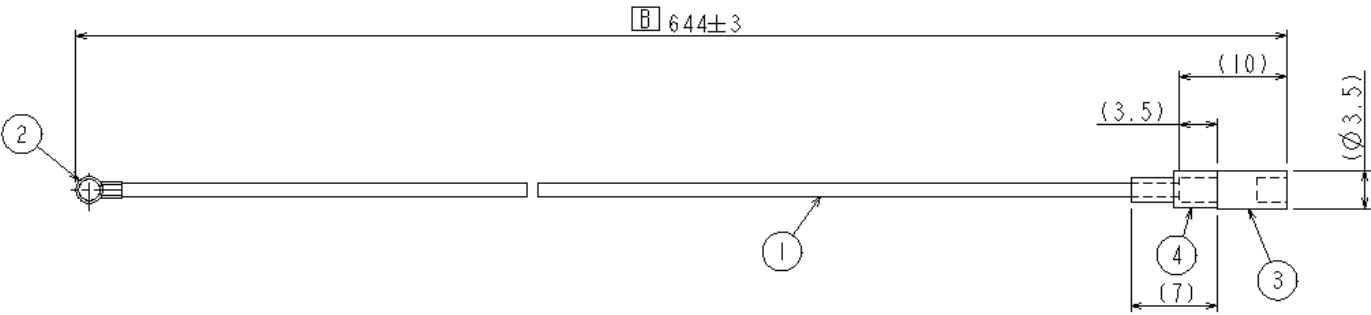
No.	Description
1	Metal Plate Antenna(HMT02-R)
2	Coaxial Cable($\varnothing$ 1.37,Black)
3	SSMCX PLUG
4	Heat Shrinkable tube SUMITUBE F34
5	Lable

TOLERANCES OF DIMENSIONS	
Dimension	Tolerance
6 - 6	± 0.1
6 - 30	± 0.2
30 -	± 0.3

DWN.	K.ENDO	05.10.20	TITLE
CHKD.	Y.YAMAMOTO	REGD.	PROJ.
APPD.	K.TSUKAMOTO		HMT02-DL01-AS(K)
SCALE.	N.T.S		
Hitachi Cable, Ltd. Hitaka Works			EH3854764

EH3854767

MARK	REVISION	DATE	NAME	CHKD.
	First drawig(05.10.20/K.ENDO/S.TAKABA/K.TSUKAMOTO)			
A	Cable length changed.	05.12.16	K.ENDO	S.TAKABA
B	Cable length changed.	06.02.22		

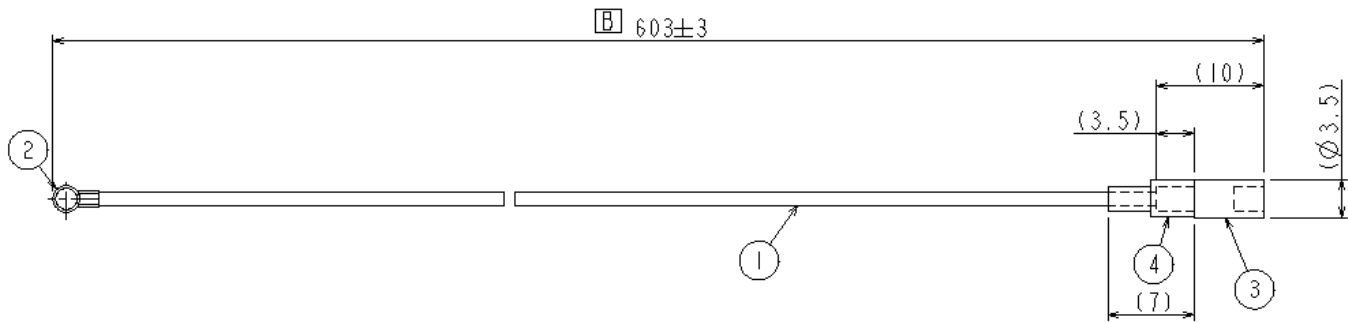


No.	Description
①	Coaxial Cable(Φ1.37,White)
②	mPCI connector Hirose U.FL-LP088
③	MMCX JACK
④	Heat Shrinkable tube SUMITUBE F34

Customer P/N				
DWN.		06.02.22	TITLE	
CHKD.		REGD. PROJ.	HMT02-DL01-MS(W)	
APPD.				
SCALE.	N.T.S			
Hitachi Cable, Ltd. Hitaka Works			EH3854767	

EH3854766

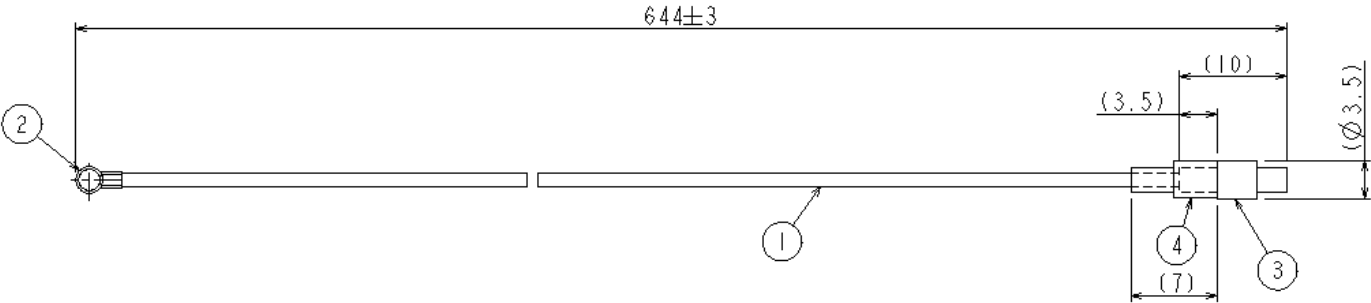
MARK	REVISION	DATE	NAME	CHKD.
	First drawig(05.10.20/K.ENDO/S.TAKABA/K.TSUKAMOTO)			
A	Cable length changed.	05.12.16	K.ENDO	S.TAKABA
B	Cable length changed.	06.02.22		



No.	Description
①	Coaxial Cable(Ø1.37,Black)
②	mPCI connector Hirose U.FL-LP088
③	MMCX JACK
④	Heat Shrinkable tube SUMITUBE F34

Customer P/N				TITLE HMT02-DL01-MS(K) EH3854766
DWN.		06.02.22		
CHKD.		REGD.	PROJ.	
APPD.				
SCALE.	N.T.S			
Hitachi Cable, Ltd. Hitaka Works				

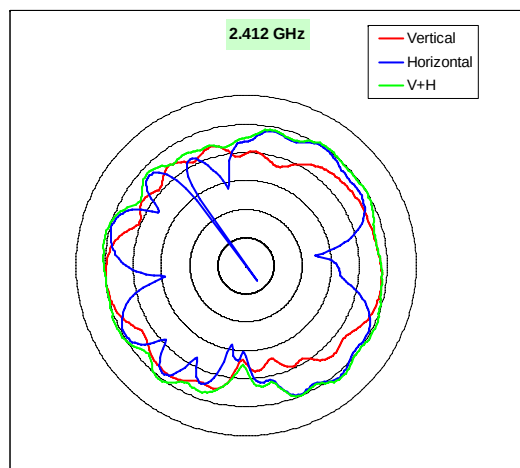
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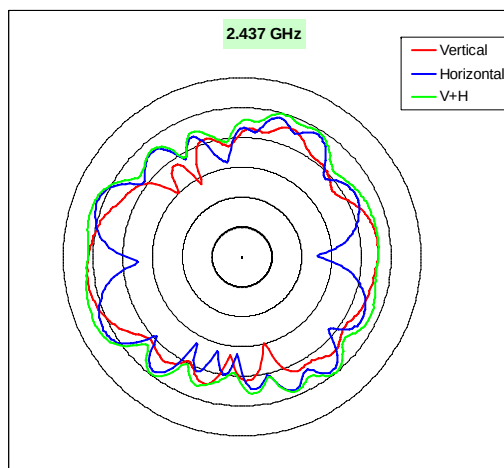
No.	Description
①	Coaxial Cable(Ø1.37,Gray)
②	mPCI connector Hirose U.FL-LP088
③	MMCX PLUG
④	Heat Shrinkable tube SUMITUBE F34

Customer P/N			TITLE HMT02-DL01-MS(H) EH3855145
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CHKD.		REGD. PROJ.	
APPD.			
SCALE.	N.T.S		
Hitachi Cable, Ltd. Hitaka Works			

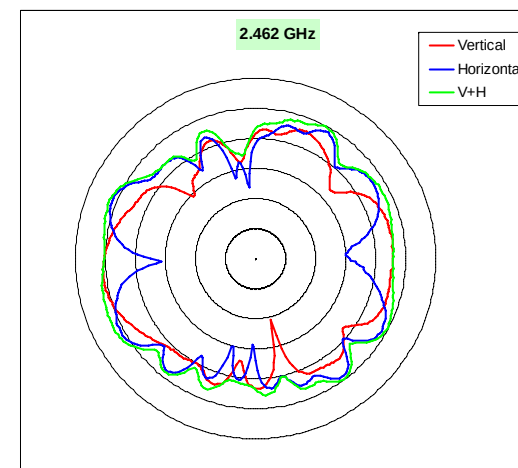
Main Antenna (1)



Frequency (MHz)	2412
Vertical Peak Gain (dBi)	1.8
Horizontal Peak Gain (dBi)	3.0
V + H Peak Gain (dBi)	4.6

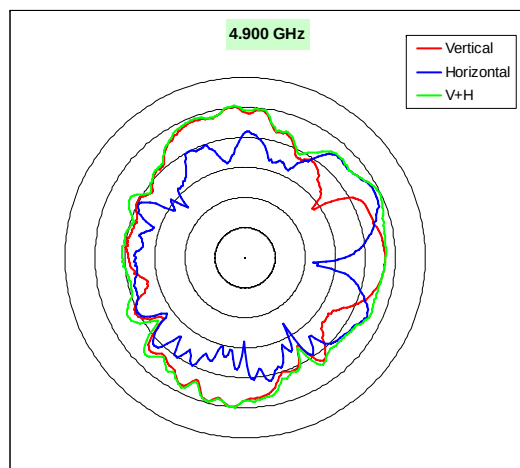


Frequency (MHz)	2437
Vertical Peak Gain (dBi)	2.2
Horizontal Peak Gain (dBi)	2.3
V + H Peak Gain (dBi)	4.0

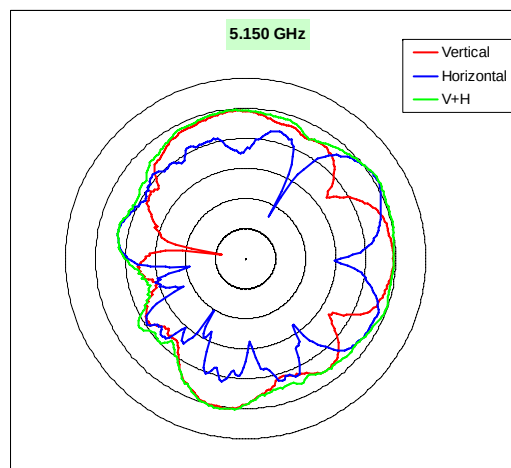


Frequency (MHz)	2462
Vertical Peak Gain (dBi)	0.8
Horizontal Peak Gain (dBi)	1.1
V + H Peak Gain (dBi)	2.5

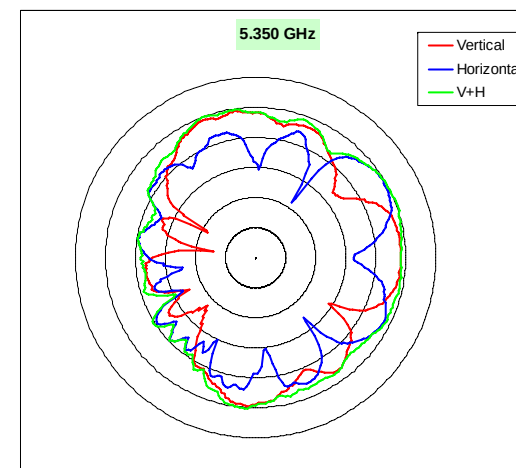
Main Antenna (2)



Frequency (MHz)	4900
Vertical Peak Gain (dBi)	0.2
Horizontal Peak Gain (dBi)	-1.8
V + H Peak Gain (dBi)	0.4

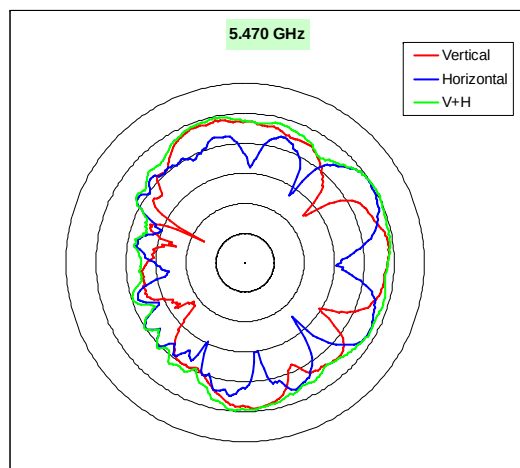


Frequency (MHz)	5150
Vertical Peak Gain (dBi)	0
Horizontal Peak Gain (dBi)	0.9
V + H Peak Gain (dBi)	1.2

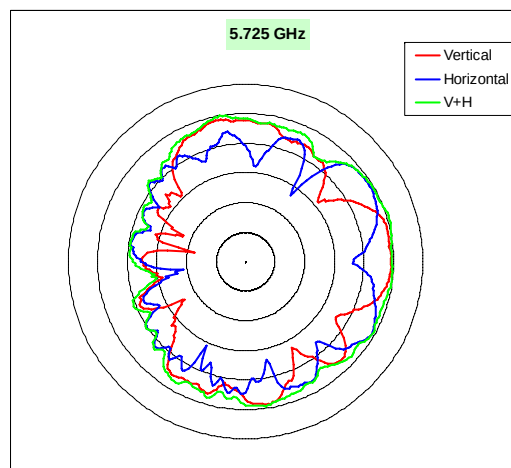


Frequency (MHz)	5350
Vertical Peak Gain (dBi)	-0.6
Horizontal Peak Gain (dBi)	-0.7
V + H Peak Gain (dBi)	0.2

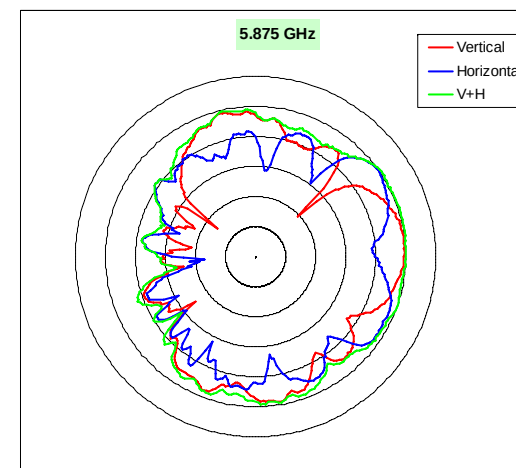
Main Antenna (3)



Frequency (MHz)	5470
Vertical Peak Gain (dBi)	-1.0
Horizontal Peak Gain (dBi)	-0.4
V + H Peak Gain (dBi)	0.3

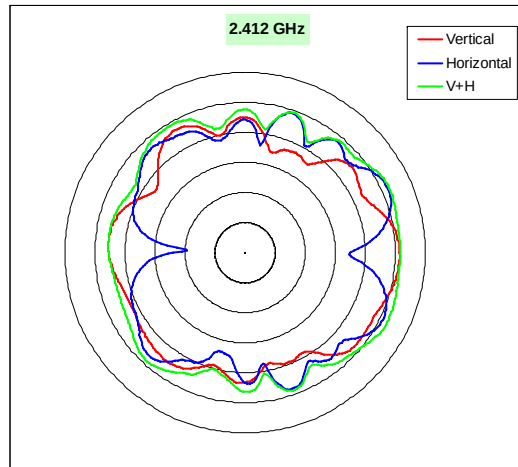


Frequency (MHz)	5725
Vertical Peak Gain (dBi)	-0.8
Horizontal Peak Gain (dBi)	-0.9
V + H Peak Gain (dBi)	0.6

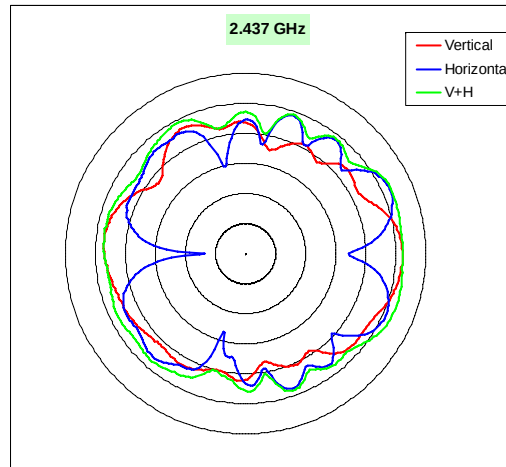


Frequency (MHz)	5875
Vertical Peak Gain (dBi)	-0.4
Horizontal Peak Gain (dBi)	-0.3
V + H Peak Gain (dBi)	0.4

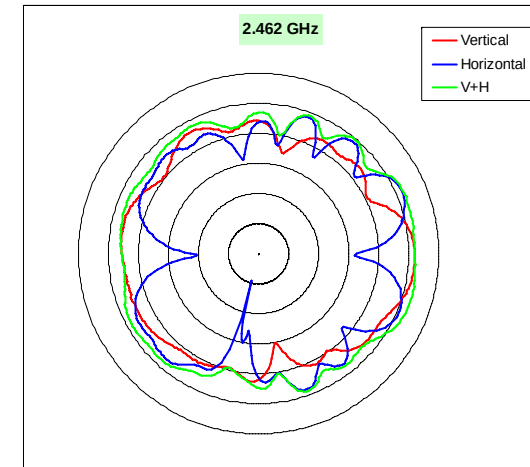
Aux Antenna (1)



Frequency (MHz)	2412
Vertical Peak Gain (dBi)	1.4
Horizontal Peak Gain (dBi)	1.9
V + H Peak Gain (dBi)	2.6

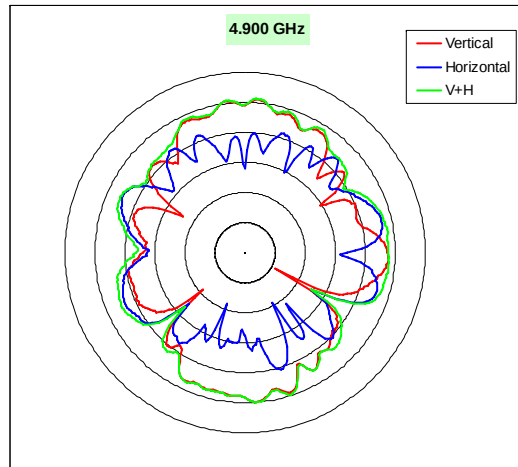


Frequency (MHz)	2437
Vertical Peak Gain (dBi)	2.0
Horizontal Peak Gain (dBi)	2.3
V + H Peak Gain (dBi)	3.0

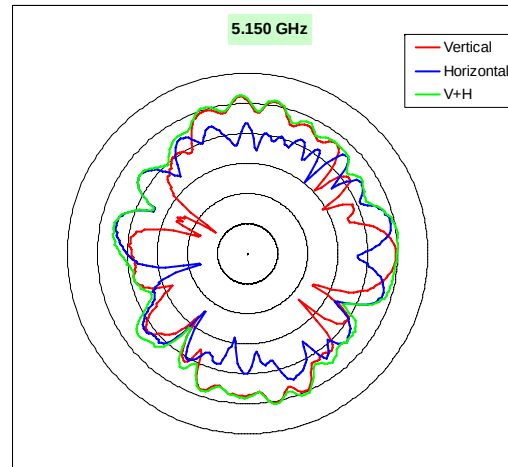


Frequency (MHz)	2462
Vertical Peak Gain (dBi)	1.8
Horizontal Peak Gain (dBi)	1.8
V + H Peak Gain (dBi)	2.8

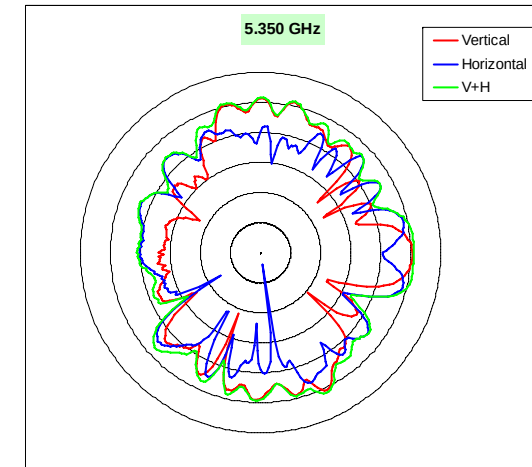
Aux Antenna (2)



Frequency (MHz)	4900
Vertical Peak Gain (dBi)	1.0
Horizontal Peak Gain (dBi)	-3.5
V + H Peak Gain (dBi)	1.3

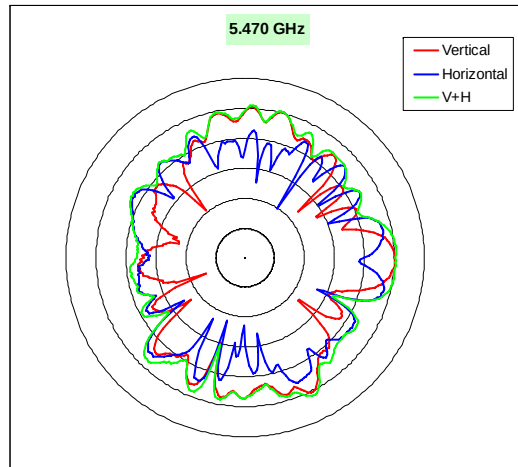


Frequency (MHz)	5150
Vertical Peak Gain (dBi)	2.1
Horizontal Peak Gain (dBi)	-1.5
V + H Peak Gain (dBi)	2.5

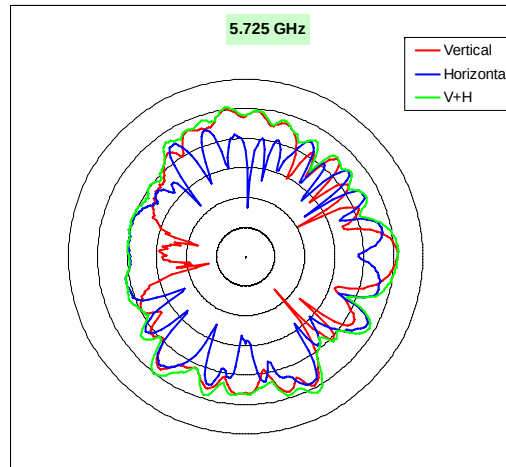


Frequency (MHz)	5350
Vertical Peak Gain (dBi)	1.1
Horizontal Peak Gain (dBi)	-1.4
V + H Peak Gain (dBi)	1.5

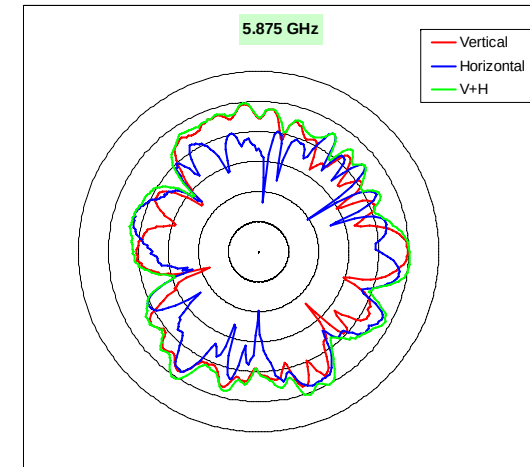
Aux Antenna (3)



Frequency (MHz)	5470
Vertical Peak Gain (dBi)	0.5
Horizontal Peak Gain (dBi)	-2.2
V + H Peak Gain (dBi)	1.5

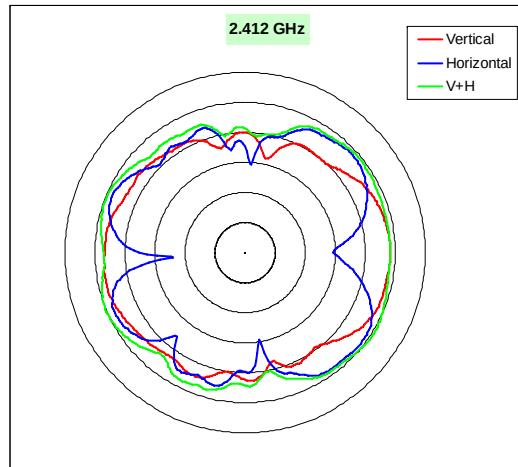


Frequency (MHz)	5725
Vertical Peak Gain (dBi)	1.2
Horizontal Peak Gain (dBi)	-1.7
V + H Peak Gain (dBi)	1.8

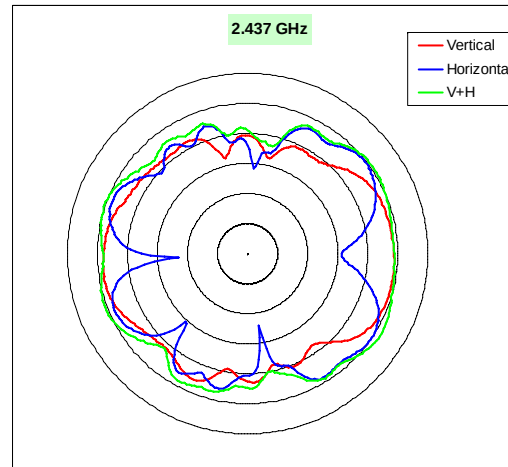


Frequency (MHz)	5875
Vertical Peak Gain (dBi)	-0.5
Horizontal Peak Gain (dBi)	-1.9
V + H Peak Gain (dBi)	0.6

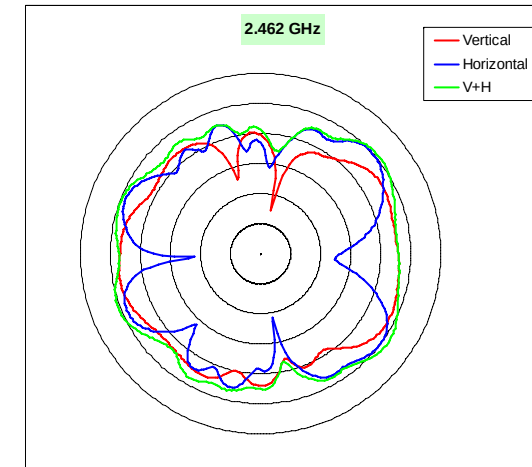
MIMO Antenna (1)



Frequency (MHz)	2412
Vertical Peak Gain (dBi)	-1.9
Horizontal Peak Gain (dBi)	-1.1
V + H Peak Gain (dBi)	0.4

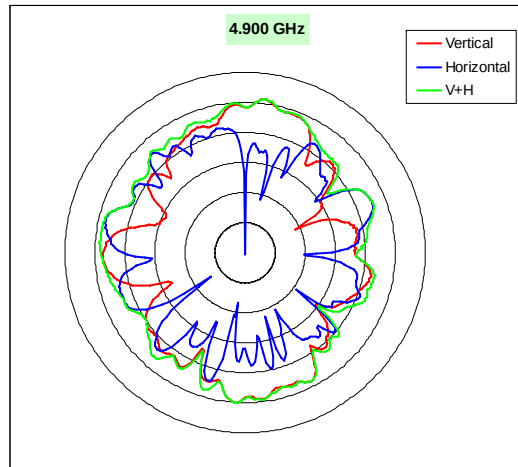


Frequency (MHz)	2437
Vertical Peak Gain (dBi)	-1.1
Horizontal Peak Gain (dBi)	-0.1
V + H Peak Gain (dBi)	1.7

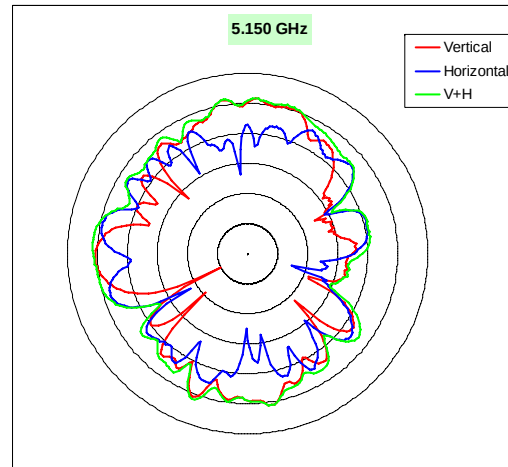


Frequency (MHz)	2462
Vertical Peak Gain (dBi)	-2.1
Horizontal Peak Gain (dBi)	0
V + H Peak Gain (dBi)	1.6

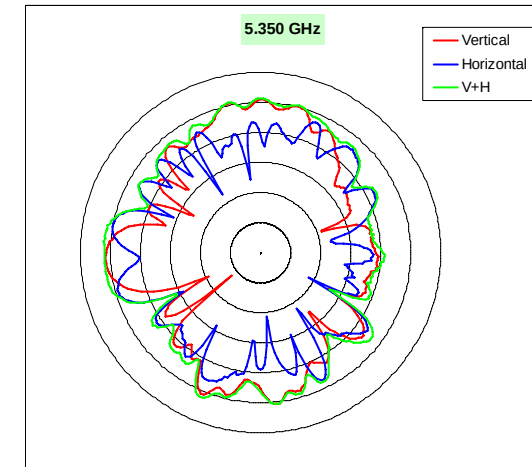
MIMO Antenna (2)



Frequency (MHz)	4900
Vertical Peak Gain (dBi)	1.2
Horizontal Peak Gain (dBi)	-2.5
V + H Peak Gain (dBi)	1.3

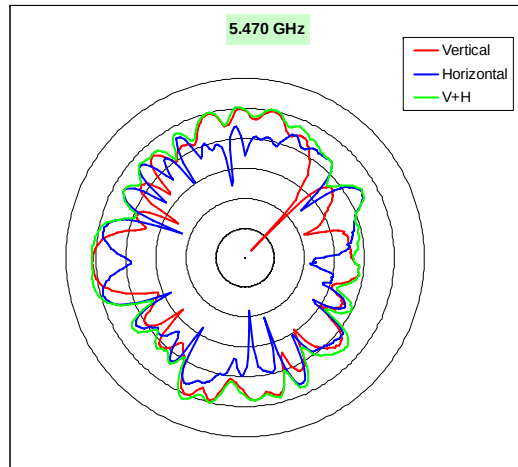


Frequency (MHz)	5150
Vertical Peak Gain (dBi)	1.5
Horizontal Peak Gain (dBi)	-0.8
V + H Peak Gain (dBi)	1.7

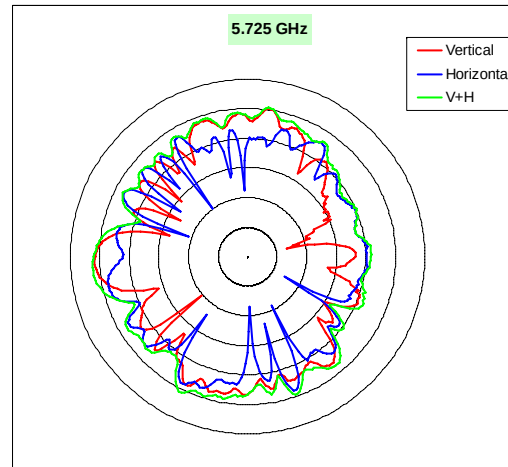


Frequency (MHz)	5350
Vertical Peak Gain (dBi)	1.5
Horizontal Peak Gain (dBi)	-0.1
V + H Peak Gain (dBi)	2.0

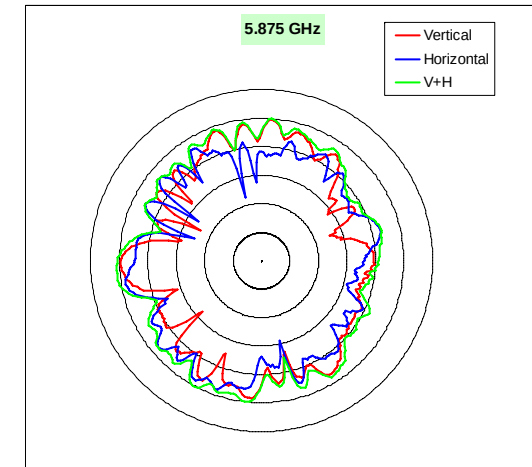
MIMO Antenna (3)



Frequency (MHz)	5470
Vertical Peak Gain (dBi)	1.2
Horizontal Peak Gain (dBi)	-0.8
V + H Peak Gain (dBi)	1.6



Frequency (MHz)	5725
Vertical Peak Gain (dBi)	1.7
Horizontal Peak Gain (dBi)	-1.7
V + H Peak Gain (dBi)	2.3



Frequency (MHz)	5875
Vertical Peak Gain (dBi)	-0.4
Horizontal Peak Gain (dBi)	-1.6
V + H Peak Gain (dBi)	1.1