

Regulatory WLAN Antenna Information 2.45/5GHz BIATHLON Dual Band Antennas with Cable & Connector For IEEE802.11b/g/a, UNII

(English Language Required for Intel Regulatory Review / Approval)

Model Name	BIATHLON(HEL00)
Antenna Vendor	Wistron NeWeb Corp.
Antenna Part Number	☐ Compal P/N: ☒ WNC P/N: 81.EBC15.020
With WLAN Module	☐ WM3B2100
(Check Box)	☐ WM3B2200BG
	☐ WM3B2915ABG
	☐ WM3945ABG

For Compal BIATHLON Antenna

Antenna Sample / Antenna Data

Requirements for worldwide regulatory approval

Section	Description of Required OEM / ODM Antenna Information	US / IC	EU	Japan	Taiwan	S.Korea
1A	Part Number for Antenna only	Required	Required	Required	Required	Required
1B	Antenna Manufacturer Name	Required	Required	Required	Required	Required
1C	Description of Antenna Type	Required	N/A	N/A	N/A	N/A
1D	Part number of Antenna Assembly / cable impedance, length & diameter.	Required	Desired	Desired	Desired	Desired
1E	Main & Aux antenna (Peak Gain W/ cable loss)	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Main & Aux antenna (Peak Gain only)	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Main & Aux antenna (Cable loss W/ connector)	Required	Required	Required	Required	Required
2	Dimensioned Photographs and Drawings of main & auxiliary antennas	Required	Required	Required	Required	Required
3	Radiation patterns of antennas loaded in the host platform.	Required	Desired	Required	N/A	Required
4	Platform model name / number - correlated to antenna manufacturer and antenna part number	Required	Required	Desired	Required	Desired
5	Photograph(s) or Drawings showing location of antennas in platform. (S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.	Required	Required	Desired	Required (Photos)	Required (Photos)
6	Mech. drawings / photos with dimensions of antenna locations and distance from end-user (For evaluation of SAR testing requirement).	Required	N/A	N/A	N/A	N/A
7	Photograph(s) or Drawings showing the location of all antennas (WLAN, BT, other) and distance between those transmitting antennas. Information will be used to evaluate whether co-location testing is required.	Required	N/A	N/A	N/A	N/A
8	Local representative contact information for LMA/ PARS process.	Required	N/A	N/A	N/A	N/A

Antenna Information

Section 1. Antenna Assembly Specifications

Antenna Assembly Summary:

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E Peak Gain W/ Cable Loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
Main Antenna (WNC P/N: 81.EBC15.020) (customer P/N:)	Wistron Neweb Corporation	PIFA	P/N: WN-S-113B-520MM-(2-2-1) 50 ohm Coaxial. length: 520 mm diameter: 113 mm Connector: IPEX	2400-2500MHz 3.38 dBi (peak)	2400-2500MHz 5.23 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz 1.85 dBi (peak)
				5150-5350MHz 1.53 dBi (peak)	5150-5350MHz 4.30 dBi (peak)	5150-5350MHz 2.5 max	5150-5350MHz 2.77 dBi (peak)
				5470-5725MHz 3.54 dBi (peak)	5470-5725MHz 6.37 dBi (peak)	5470-5725MHz 2.5 max	5470-5725MHz 2.83 dBi (peak)
				5725-5825MHz -0.48 dBi (peak)	5725-5825MHz 2.44 dBi (peak)	5725-5825MHz 2.5 max	5725-5825MHz 2.92 dBi (peak)
AUX Antenna (WNC P/N: 81.EBC15.020) (customer P/N:)	Wistron Neweb Corporation	PIFA	P/N: WN-S-113W-646MM-(2-2-1) 50 ohm Coaxial. length: 646 mm diameter: 113 mm Connector: IPEX	2400-2500MHz 2.86 dBi (peak)	2400-2500MHz 5.12 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz 2.25 dBi (peak)
				5150-5350MHz 1.34 dBi (peak)	5150-5350MHz 4.72 dBi (peak)	5150-5350MHz 2.5 max	5150-5350MHz 3.38 dBi (peak)
				5470-5725MHz 1.83 dBi (peak)	5470-5725MHz 5.28 dBi (peak)	5470-5725MHz 2.5 max	5470-5725MHz 3.45 dBi (peak)
				5725-5825MHz 1.37 dBi (peak)	5725-5825MHz 4.94 dBi (peak)	5725-5825MHz 2.5 max	5725-5825MHz 3.57 dBi (peak)

Antenna Peak Gain Table:

Main antenna Gain										Cable length
Frequency	Max value			Average with cable loss			Average without cable loss			520
	H-pol	V pol	Total	H-pol	V pol	Total	H-pol	V pol	Total	Cable loss
2400(MHz)	2.56	-1.65	2.56	-5.59	-7.21	-3.05	-3.74	-5.35	-1.20	1.85
2450(MHz)	3.38	-0.06	3.38	-5.49	-6.66	-2.72	-3.64	-4.80	-0.86	
2500(MHz)	2.34	-1.31	2.34	-4.97	-6.48	-2.39	-3.12	-4.63	-0.53	
5150(MHz)	-1.36	-1.24	-1.24	-6.92	-4.71	-2.47	-4.16	-1.94	0.30	2.77
5250(MHz)	-0.86	1.53	1.53	-7.72	-3.41	-1.81	-4.95	-0.64	0.95	
5350(MHz)	0.10	-0.21	0.10	-7.36	-5.36	-2.85	-4.60	-2.60	-0.08	
5470(MHz)	-1.79	3.54	3.54	-7.57	-2.51	-1.12	-4.74	0.32	1.71	2.83
5647.5(MHz)	-0.14	1.45	1.45	-6.23	-3.97	-1.60	-3.40	-1.14	1.23	
5825(MHz)	-2.07	-0.48	-0.48	-8.23	-6.42	-3.87	-5.30	-3.50	-0.95	

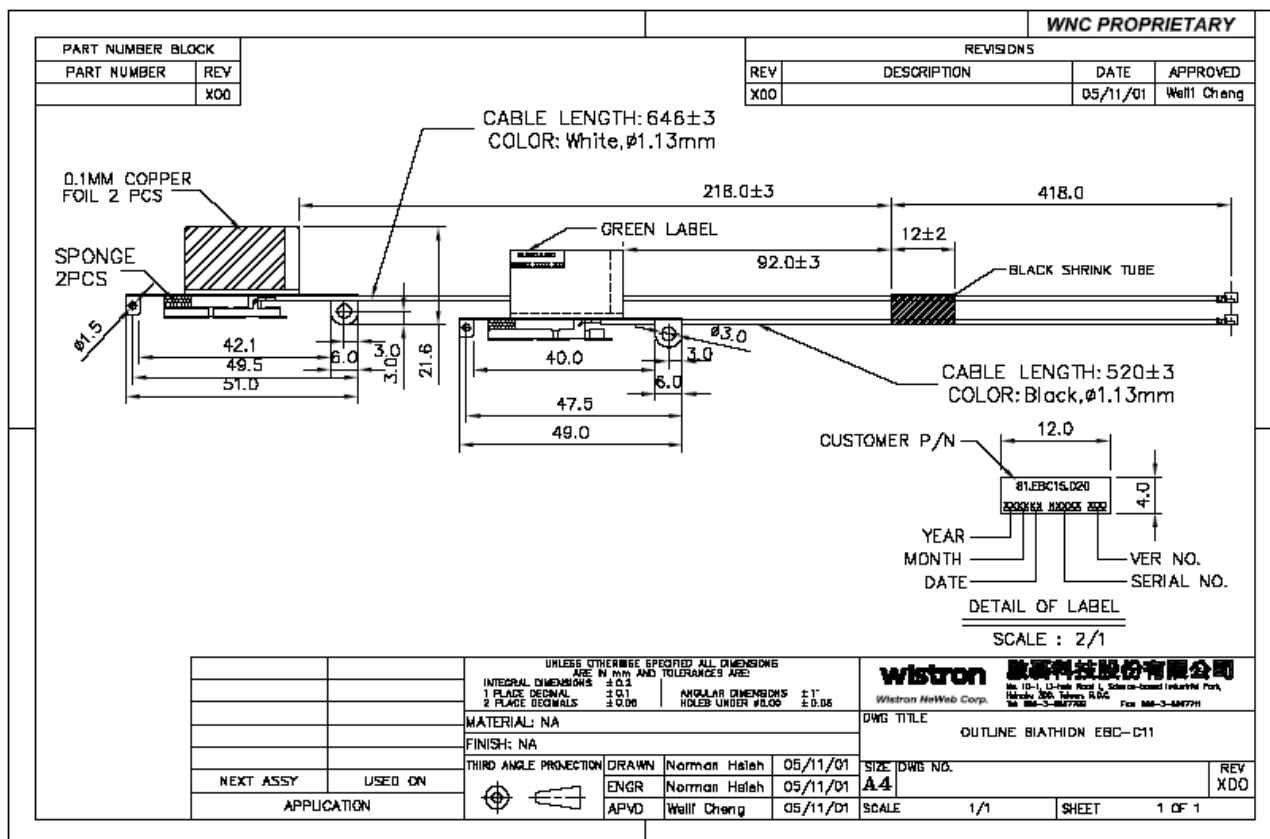
Aux antenna Gain										Cable length
Frequency	Max value			Average with cable loss			Average without cable loss			646
	H-pol	V pol	Total	H-pol	V pol	Total	H-pol	V pol	Total	Cable loss
2400(MHz)	1.98	-1.07	1.98	-6.59	-6.97	-3.45	-4.33	-4.72	-1.19	2.25
2450(MHz)	2.86	1.36	2.86	-5.73	-5.35	-2.26	-3.48	-3.09	-0.01	
2500(MHz)	1.26	-1.70	1.26	-5.57	-5.69	-2.40	-3.31	-3.44	-0.14	
5150(MHz)	-3.91	1.34	1.34	-8.81	-4.57	-2.76	-5.43	-1.19	0.62	3.38
5250(MHz)	-1.04	0.57	0.57	-6.75	-6.95	-3.40	-3.37	-3.57	-0.02	
5350(MHz)	-3.32	0.63	0.63	-9.43	-4.44	-2.79	-6.05	-1.06	0.59	
5470(MHz)	-0.56	1.33	1.33	-8.74	-3.24	-1.84	-5.29	0.22	1.61	3.45
5647.5(MHz)	-1.17	1.83	1.83	-7.83	-4.25	-2.19	-4.37	-0.79	1.27	
5825(MHz)	-1.83	1.37	1.37	-9.67	-6.41	-4.26	-6.10	-2.84	-0.69	

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/ V/ H+V.

Section 2. Dimensioned Photos or Drawings of Antennas

Antenna Dimensioned Drawing:

Main and Aux antenna



Section 2-1. Antenna Photos

Main and Aux Antenna Photos:

Main antenna



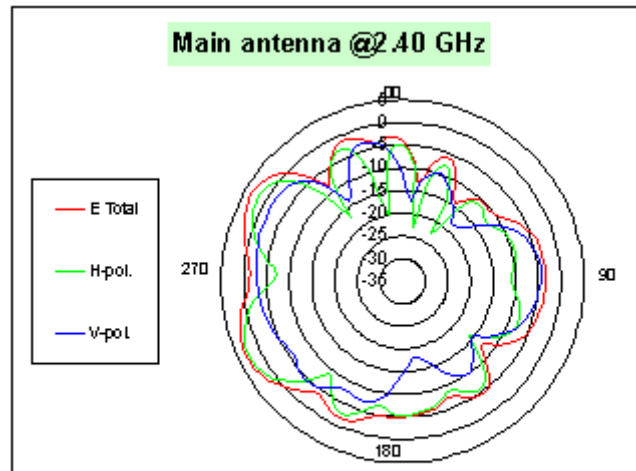
Aux antenna



Section 3. Radiation characteristics of antennae Loaded in Host Platform

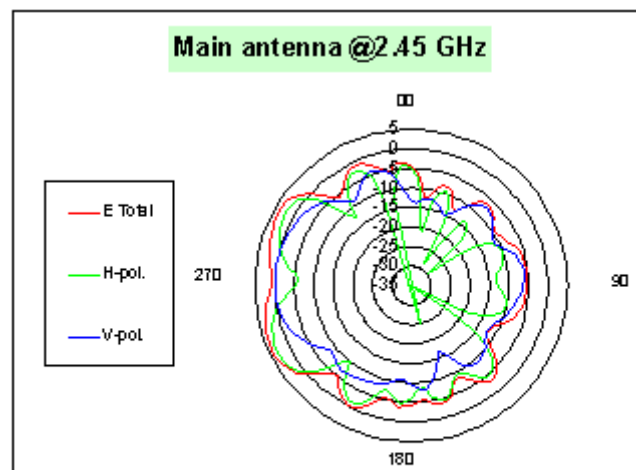
2400-2500MHz radiation characteristic

Main antenna: 2400 MHz



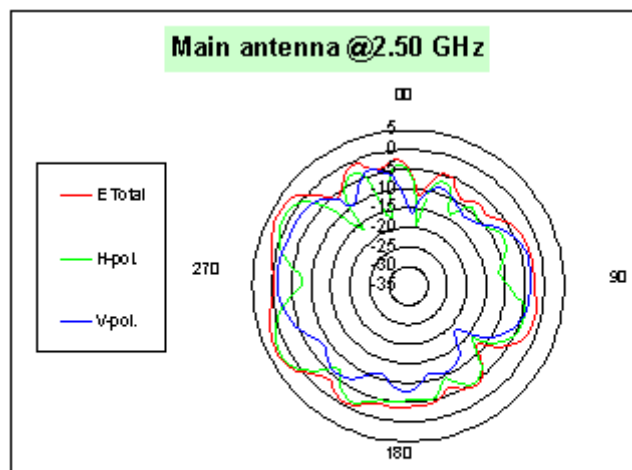
	Total	H-pol	V pol
Peak Gain	3.40	2.56	-1.65
Average Gain	-3.05	-5.59	-7.21

Main antenna: 2450 MHz



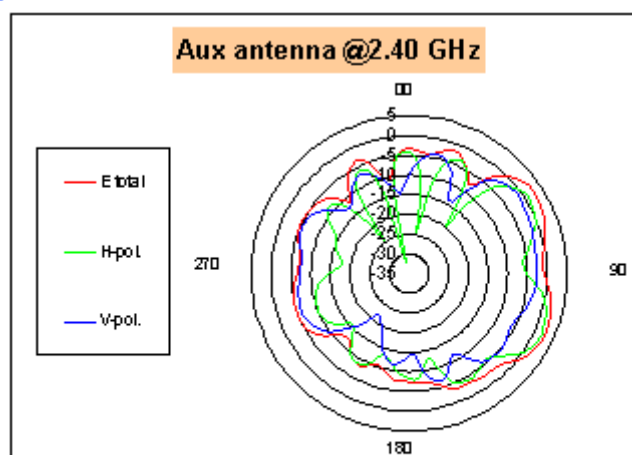
	Total	H-pol	V pol
Peak Gain	4.26	3.38	-0.06
Average Gain	-2.72	-5.49	-6.66

Main antenna: 2500 MHz



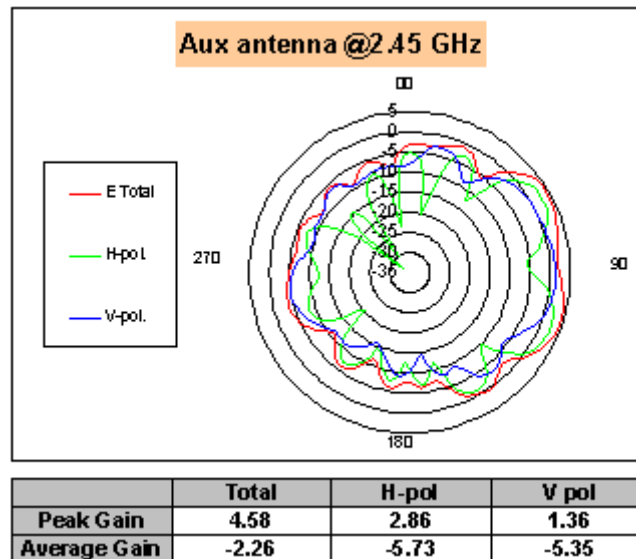
	Total	H-pol	V-pol
Peak Gain	3.19	2.34	-1.31
Average Gain	-2.39	-4.97	-6.48

Auxiliary antenna: 2400 MHz

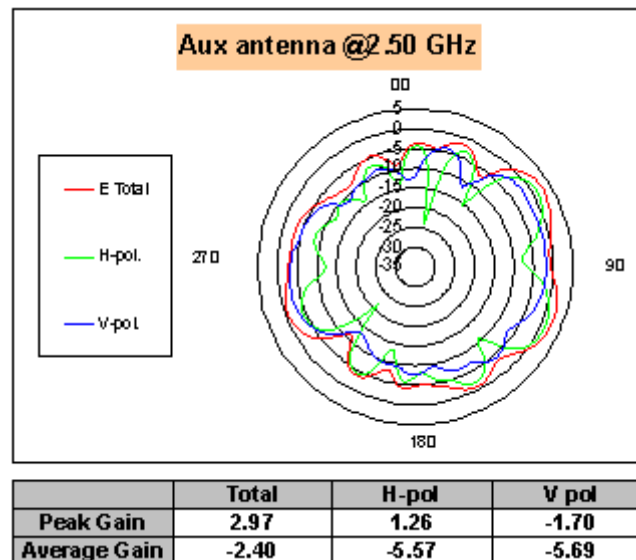


	Total	H-pol	V-pol
Peak Gain	2.82	1.98	-1.07
Average Gain	-3.45	-6.59	-6.97

Auxiliary antenna: 2450 MHz

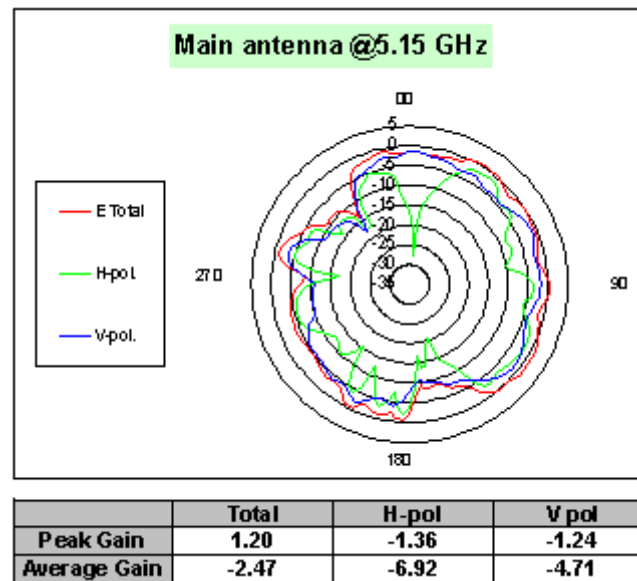


Auxiliary antenna: 2500 MHz

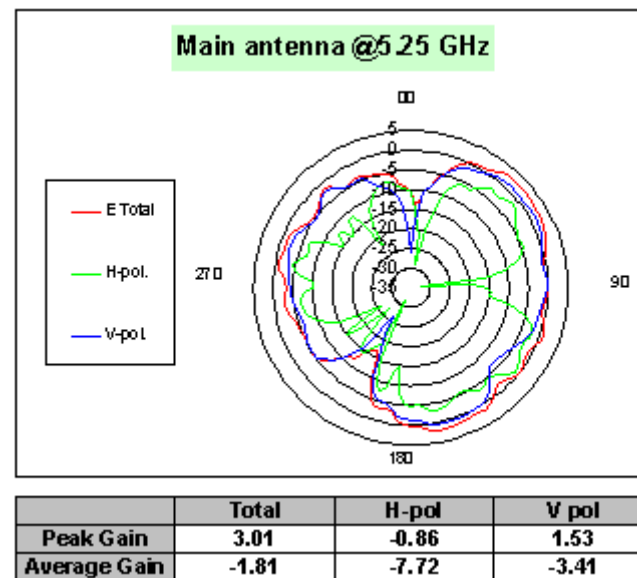


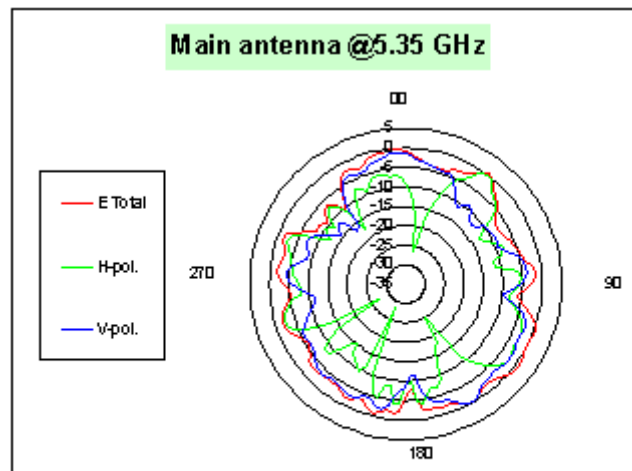
5150-5350 MHz radiation characteristic

Main antenna: 5150 MHz

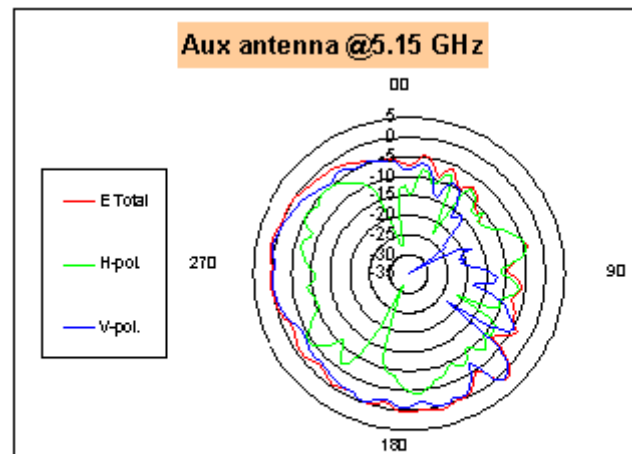


Main antenna: 5250 MHz



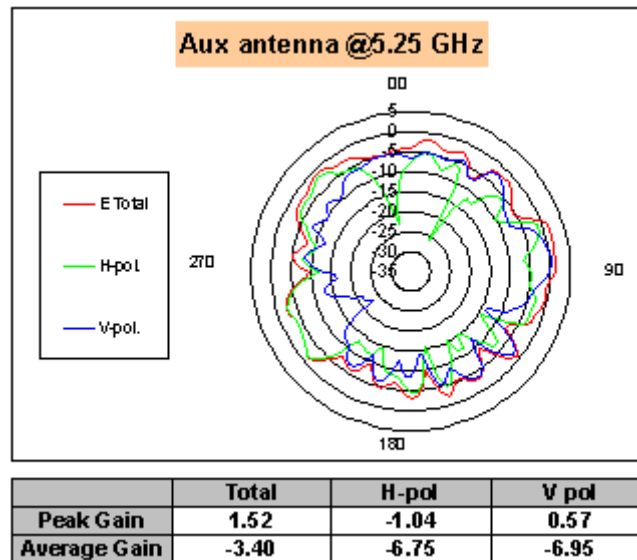
Main antenna: 5350 MHz

	Total	H-pol	V pol
Peak Gain	0.91	0.10	-0.21
Average Gain	-2.85	-7.36	-5.36

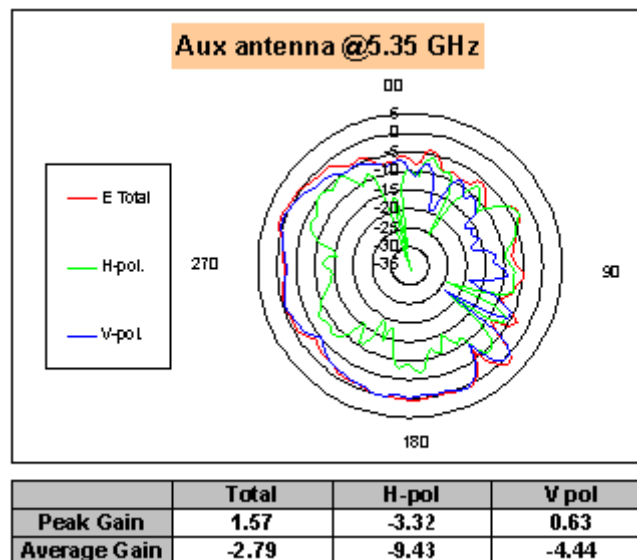
Auxiliary antenna: 5150 MHz

	Total	H-pol	V pol
Peak Gain	1.76	-3.91	1.34
Average Gain	-2.76	-8.81	-4.57

Auxiliary antenna: 5250 MHz

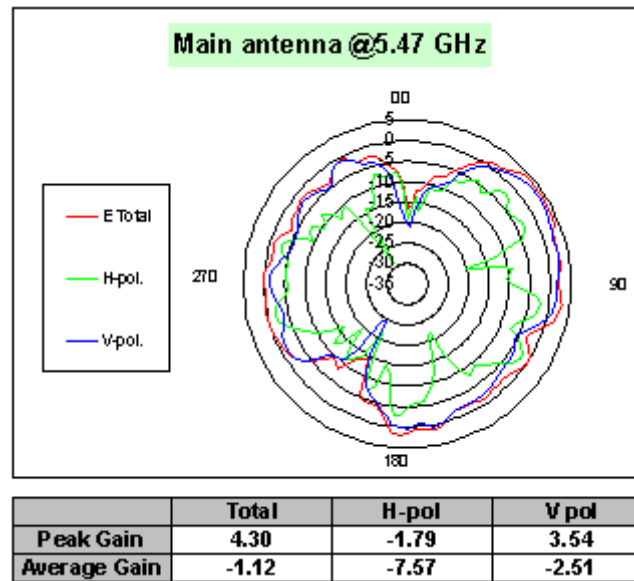


Auxiliary antenna: 5350 MHz

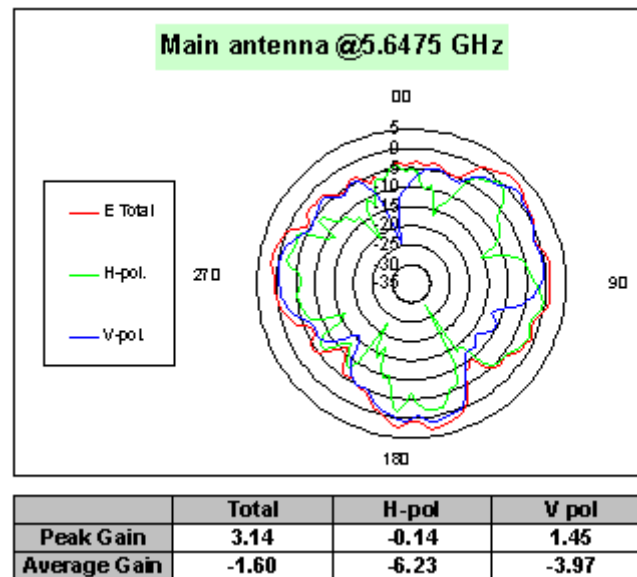


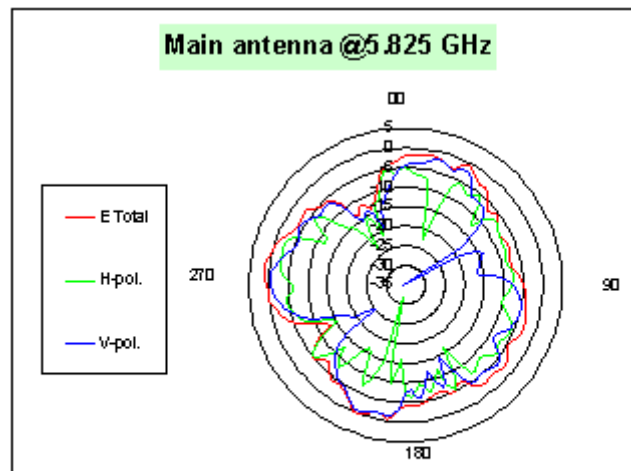
5470-5725MHz radiation characteristic

Main antenna: 5470 MHz

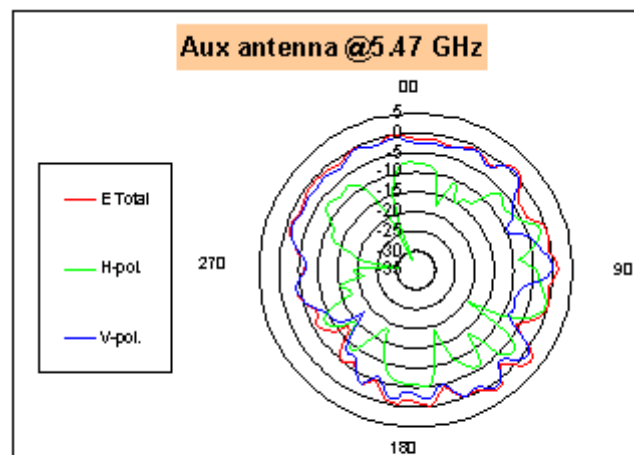


Main antenna: 5647.5 MHz



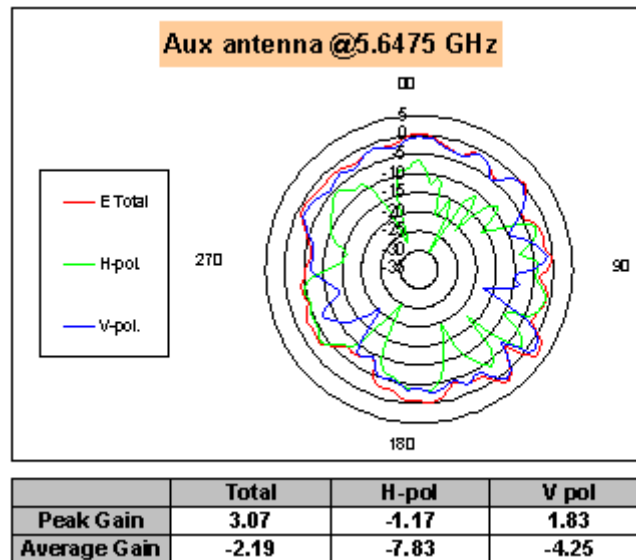
Main antenna: 5825 MHz

	Total	H-pol	V pol
Peak Gain	1.31	-2.07	-0.48
Average Gain	-3.87	-8.23	-6.42

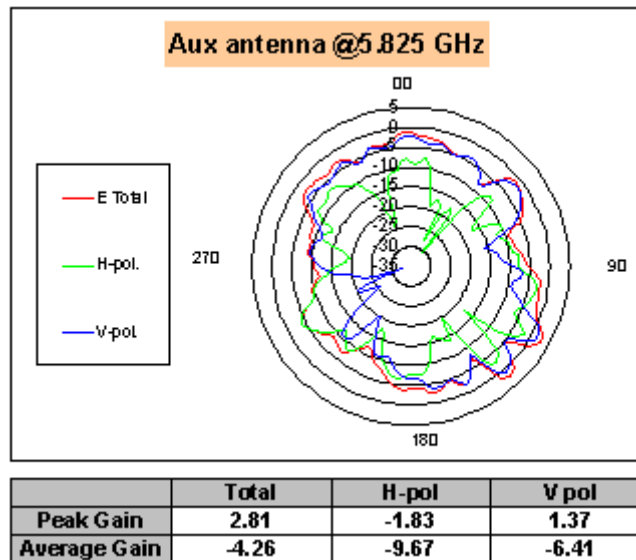
Auxiliary antenna: 5470 MHz

	Total	H-pol	V pol
Peak Gain	2.47	-0.56	1.33
Average Gain	-1.84	-8.74	-3.24

Auxiliary antenna: 5647.5 MHz



Auxiliary antenna: 5825 MHz



Section 4. Host Platform Information

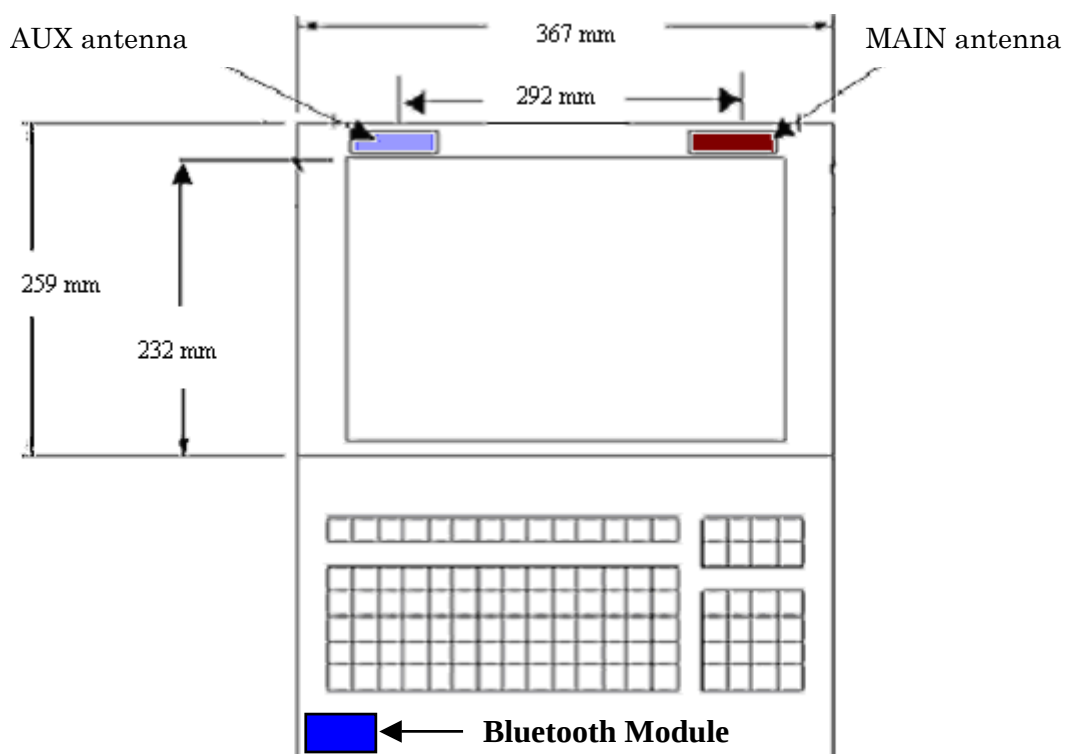
OEM / ODM Host platform: **Compal BIATHLON Platform**

Rating Label Photo:

Module Location Photo: (if Singapore required)

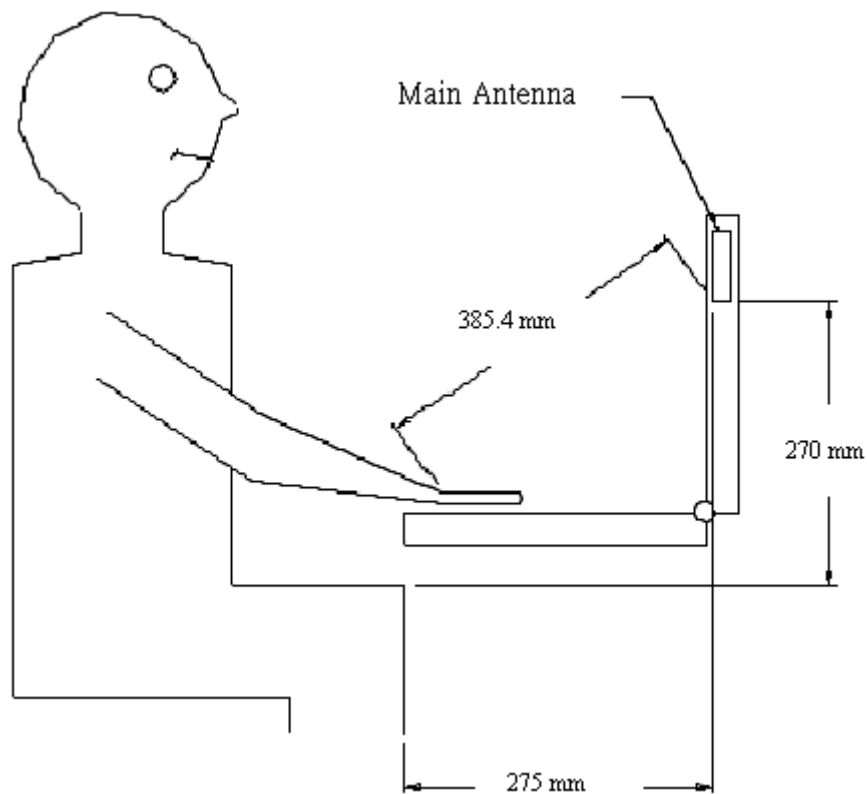
Section 5. Antenna Host Platform Location Information

Include a **dimensioned photo or dimensioned drawing** of main and auxiliary antenna placements.



Section 6. Antenna dimensional information for SAR evaluation

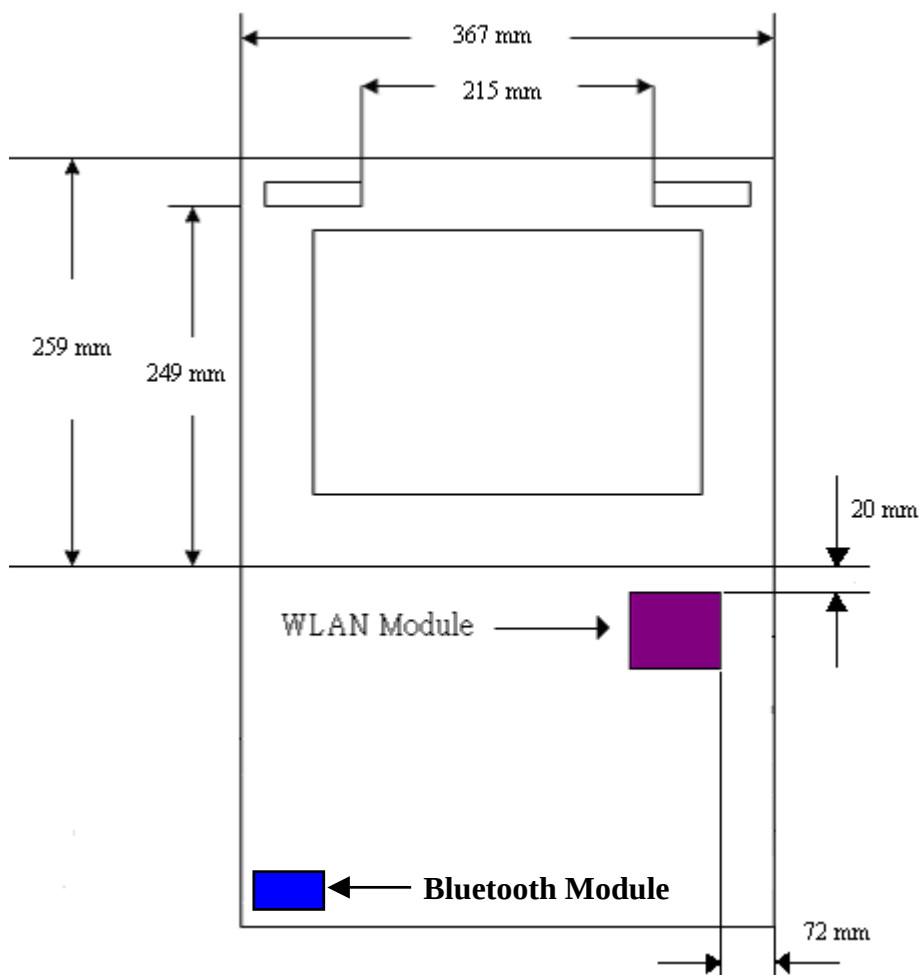
Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between the transmit (main) antenna and the user (excluding hands, wrist, feet, and ankle)



Section 7. Diagram Example of Co-Location Antenna Separation

Indicate distance between WLAN module antennas and Bluetooth /other radio antenna element.

(Note: Due to the evolving rules regarding co-location, each platform will need to be reviewed on a case by case basis)



Section 8. Local representative contact information

Local representative contact information is required for regulatory support for target countries below.

	Local company name	Contact name	Phone number	FAX Number	e-Mail Address	Notes
Argentina						
Brazil						
Indonesia						
Israel						
Malaysia						
Mexico						
Singapore						Telecommunication Equipment Dealer License Required
South Africa						
USA, Canada						