Innovative **Technology**
for a **Connected** World

Datasheet

BT WIFI Dualband Antenna (JLR NGI)

Laird Part Number	JLR Part Number	Part Description
9 47 27	***FW93-19C024-AB***	***BT/WiFi Ant***

Changes

Issue	JLR Version (P/N)	Description	Date
1.0	FW93-19C024-AA	Initial Issue	May 2013
1.1	FW93-19C024-AB	Foam pads added	May 2014

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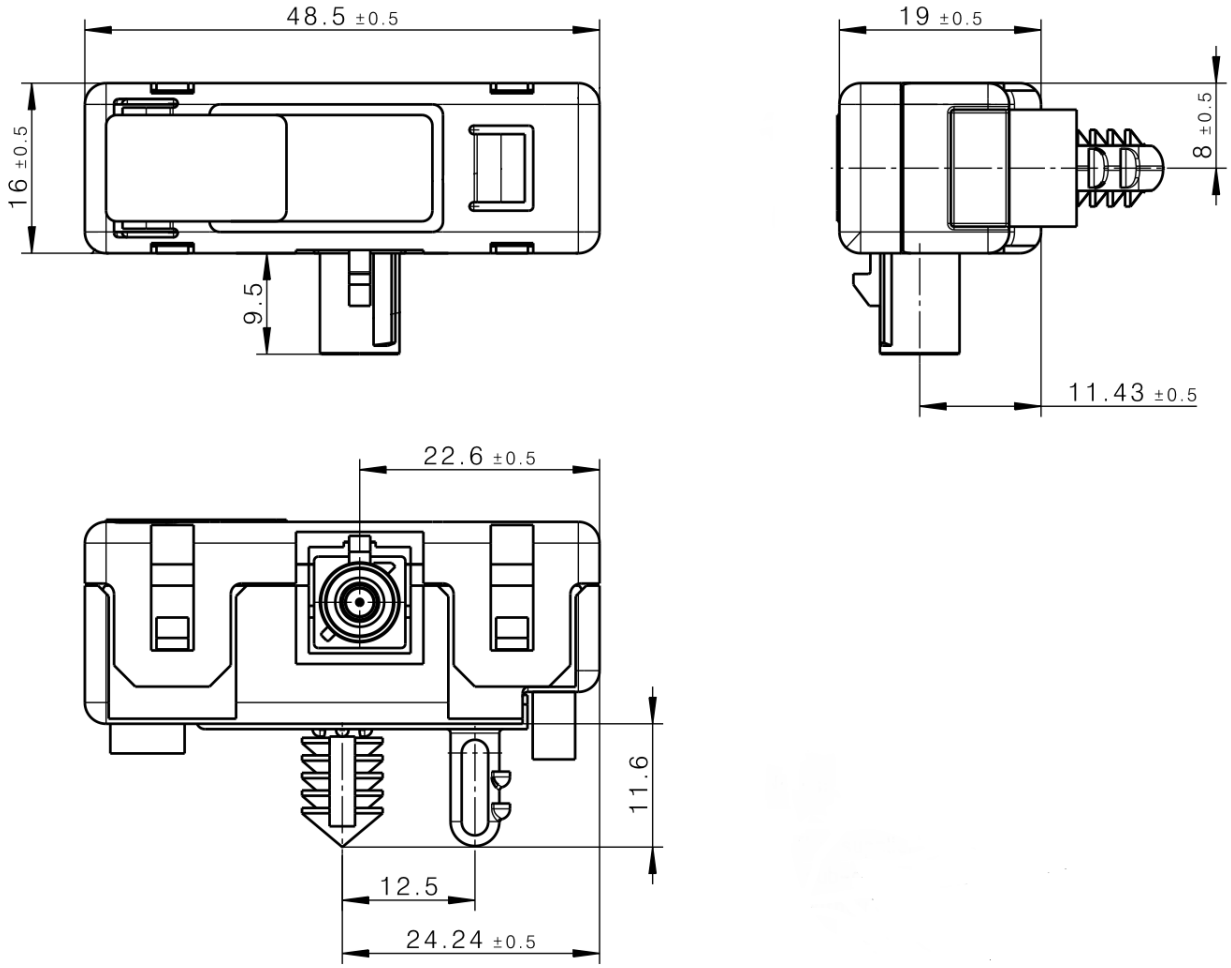
Adress:
Daimlerring 31
D-31135 Hildesheim

Fone: +49 (0) 5121/20 68-0
Fax: +49 (0) 51 21/2068-299
www.lairdtech.com

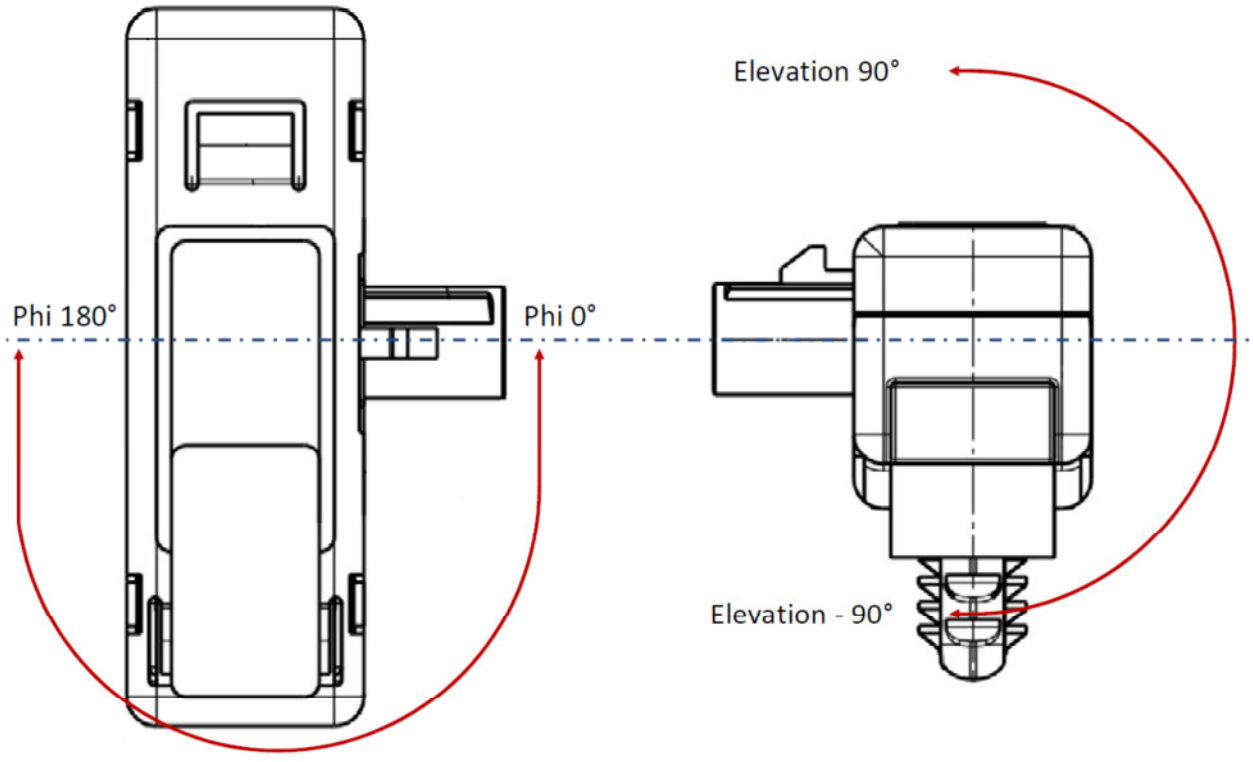
Dimensions



Antenna electrical Characteristics

Parameters	Min	Typ	Max	Units	Remarks
Frequency Band 2.4GHz	2400		2483.5	MHz	
Frequency Band 5GHz	5150		5850	MHz	
3D Efficiency	60			%	Final Assembly; measured without harness.
Antenna Peak Gain			3 5	dBi	2.4 GHz; 5 GHz; Measured without harness.
Polarization		Vertical			also horizontal
S22 (Return Loss)			-8	dB	matching
Impedance		50		Ohm	Both bands
Diagnostic Resistor	9	10	11	KOhm	
Connections	Single Fakra II, Code G, male				

Antenna Orientation



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Antenna peak values

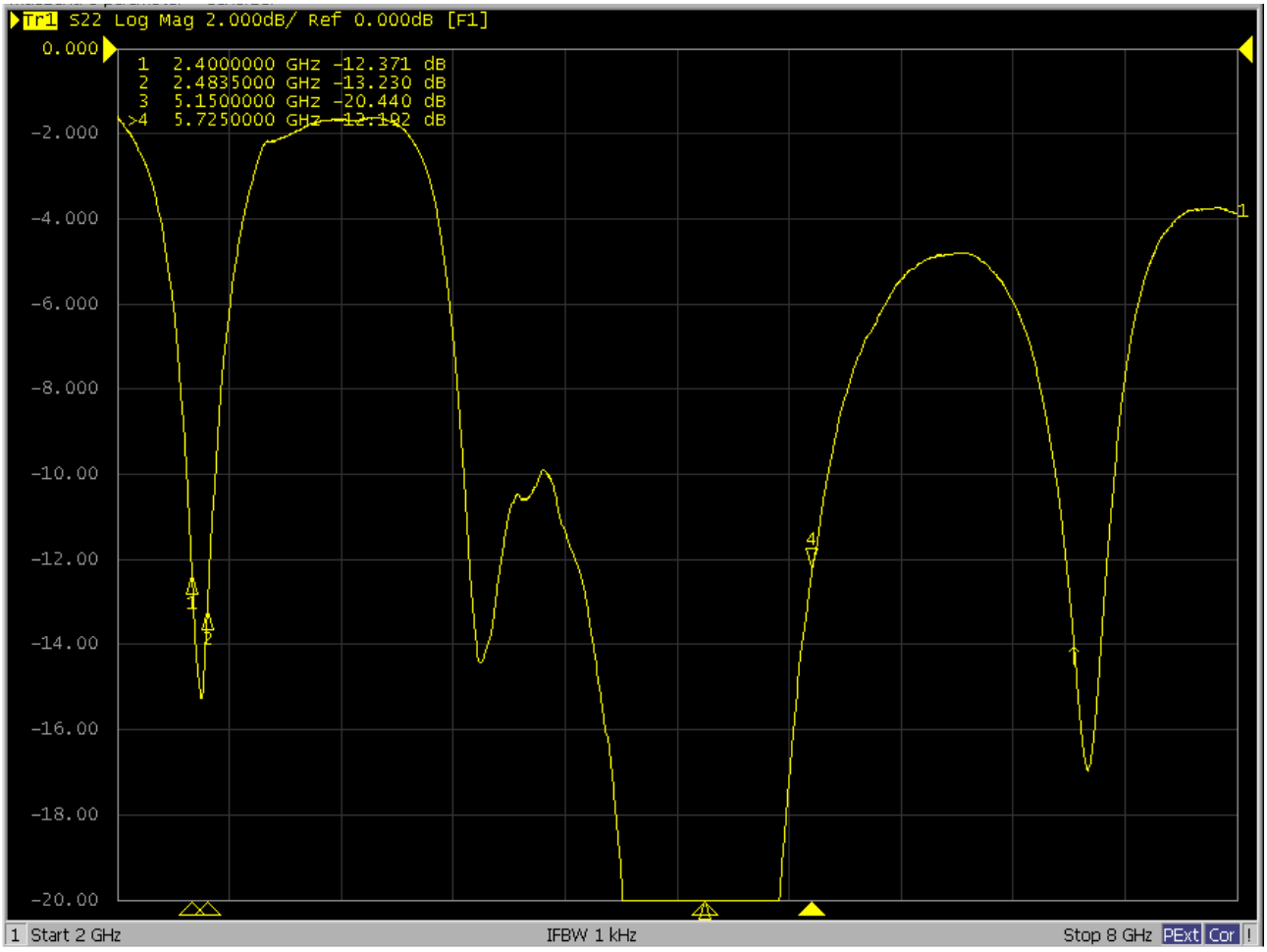
H - overall peak			
f [MHz]	max [dBi]	phi [°]	elevation [°]
5550	2,63458679	340	-86

V - overall peak			
f [MHz]	max [dBi]	phi [°]	elevation [°]
5600	4,0570684	270	-78

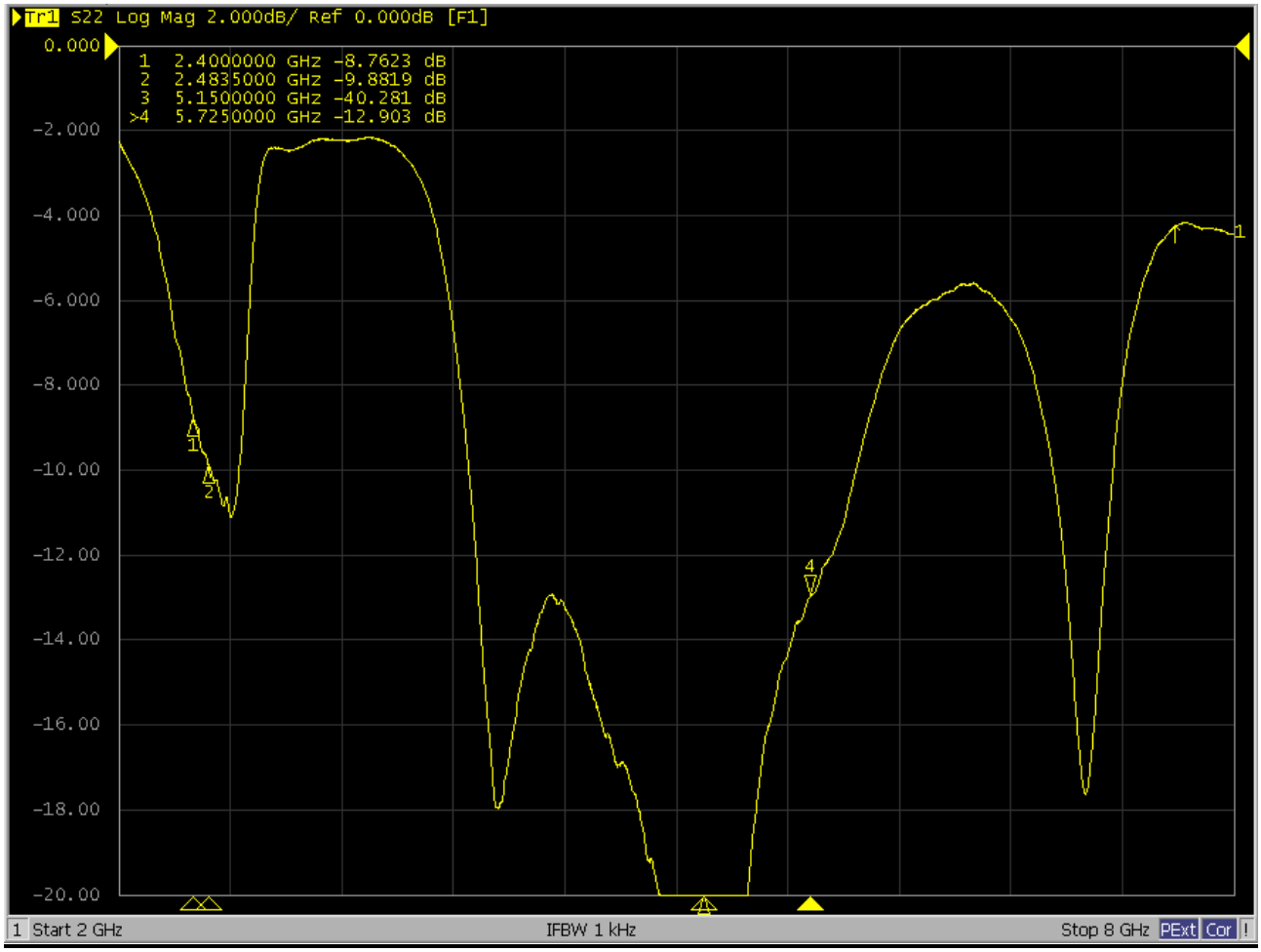
H - peak values			
f [MHz]	max [dBi]	phi [°]	elevation [°]
2400	1,21905871	186	-50
2410	1,37903599	184	-50
2420	1,43412394	186	-50
2430	1,37576434	184	-50
2440	1,38299612	186	-50
2450	1,34245887	186	-50
2460	1,48013625	186	-50
2470	1,41239651	186	-48
2480	1,30163021	184	-48
2490	1,3609937	186	-50
2500	1,33425597	186	-50
5100	2,34259652	18	90
5150	1,94971276	18	68
5200	2,24032973	18	86
5250	2,05674312	328	-84
5300	2,18997632	328	-86
5350	2,15840245	336	-82
5400	2,34537031	336	-82
5450	2,31839742	338	-82
5500	2,51967581	340	-82
5550	2,63458679	340	-86
5600	2,50380553	342	-86
5650	2,4643903	342	-84
5700	2,22622551	344	-84
5750	2,50122628	348	-84
5800	2,43724023	348	-86

V - peak values			
f [MHz]	max [dBi]	phi [°]	elevation [°]
2400	0,59348167	268	-78
2410	0,71979746	268	-78
2420	0,82626247	266	-76
2430	0,72447664	268	-76
2440	0,7095765	268	-78
2450	0,70647293	270	-78
2460	0,83437951	88	90
2470	0,81557035	90	90
2480	0,6757775	88	90
2490	0,50494027	268	88
2500	0,48468508	270	88
5100	2,42378646	284	-52
5150	2,58413962	282	-54
5200	3,15152737	282	-54
5250	3,28829198	284	-52
5300	3,38213639	282	-54
5350	3,56555509	282	-54
5400	3,67829067	266	-78
5450	3,69990588	266	-78
5500	3,86243897	268	-78
5550	4,04730467	266	-80
5600	4,0570684	270	-78
5650	4,01961046	270	-80
5700	3,81938365	270	-80
5750	3,75201399	270	-80
5800	4,03162441	272	-80

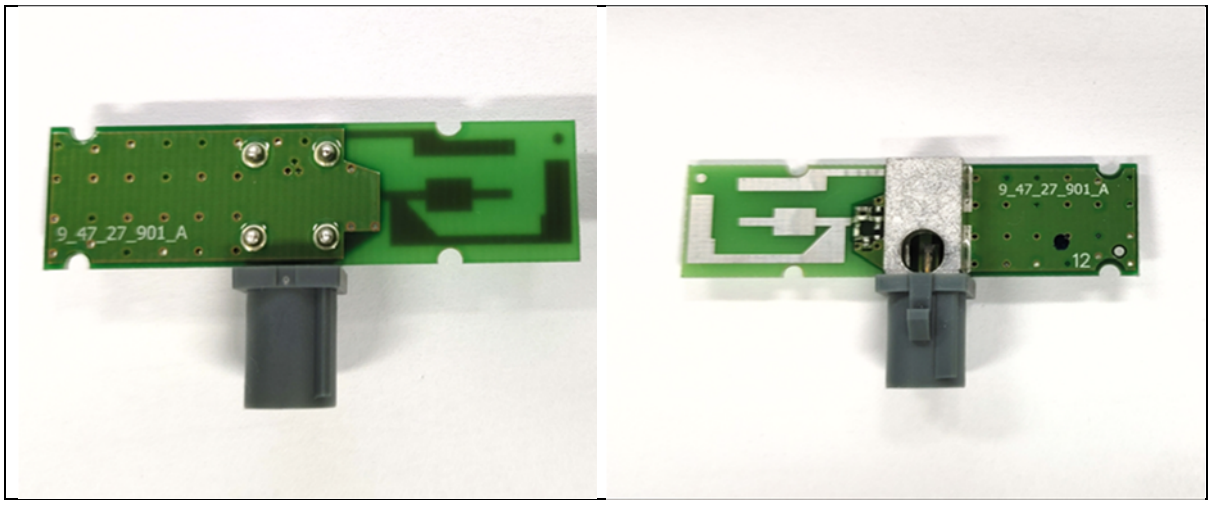
Antenna matching with ground (S22 Parameter)



Antenna matching without ground (S22 Parameter)



PHOTOGRAPH



* WLAN 2.4G/5G & BT/5G Antennas are the same.

* WLAN 5G transmits on both WLAN 2.4G/5G and BT/5G.(5,180~5,240, 5,745~5,825)

- RF Cable Loss(RG316D)

Test Item	Frequency Range (㎒)	Cable Loss (㏈)
Bluetooth	2 400 ~ 2 483.5	-1.94
WLAN 2.4G	2 400 ~ 2 483.5	-1.94
WLAN 5G	5 150 ~ 5 250	-2.08
WLAN 5G	5 725 ~ 5 850	-2.08
GSM 850	824 ~ 849	-1.12
GSM 1900	1 850 ~ 1 910	-1.12
WCDMA 2	1 850 ~ 1 910	-1.12
WCDMA 4	1 710 ~ 1 755	-1.12
WCDMA 5	824 ~ 849	-1.12
LTE 2	1 850 ~ 1 910	-1.12
LTE 4	1 710 ~ 1 755	-1.12
LTE 5	824 ~ 849	-1.12
LTE 7	2 500 ~ 2 570	-1.94
LTE 12	699 ~ 716	-0.76
LTE 26	814 ~ 849	-1.12