

Penta-Band Stand Alone PWB Antenna

Pulse Part Number: W3538



Features

- Small form factor
- PWB size W x L x H (40x 15 x 0.7 mm)
- Lead free materials
- RoHS Compliant Product
- Mounting with adhesive tape
- 150, 200 and 300mm cable lengths available
- Connector options:
 - Hirose connector U.FL-series (I.PEX connector MHF-series compatible)
 - MMCX right angle jack (male)
 - Sunridge MCD series connector

Applications

- Penta band EU/US GSM/WCDMA
- Frequency range: 850 / 900 / 1800 / 1900/ 2100 MHz

P/N	Cable length [mm]	Connector
W3538B0150	150	U.FL
W3538B0200	200	U.FL
W3538B0300	300	U.FL
W3538E0150	150	MMCX
W3538E0200	200	MMCX
W3538E0300	300	MMCX
W3538T0150	150	MCD
W3538T0200	200	MCD
W3538T0300	300	MCD

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W3538B0150 / W3538E0150 / W3538T0150

Typical free space performance, measured in test unit mechanics (position1.)

Frequency Range [MHz]	Max Gain [dBi]	Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [$^{\circ}$ C]
824 – 960	1,5 (peak) -0,7 (min)	50 / -3,0 (peak) 30 / -5,2 (min)	-3	50	-40 to +85
1710 – 1990	4,5 (peak) 2,8 (min)	70 / -1,6 (peak) 55 / -2,6 (min)	-6		
1920 – 2170	3,9 (peak) 2,7 (min)	75 / -1,3 (peak) 60 / -2,2 (min)	-6		

W3538B0200 / W3538E0200 / W3538T0200

Typical free space performance, measured in test unit mechanics (position1.)

Frequency Range [MHz]	Max Gain [dBi]	Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [$^{\circ}$ C]
824 – 960	2,8 (peak) 0,5 (min)	70 / -1,6 (peak) 50 / -3,0 (min)	-6	50	-40 to +85
1710 – 1990	5,8 (peak) 3,6 (min)	80 / -1,0 (peak) 60 / -2,2 (min)	-6		
1920 – 2170	6,3 (peak) 2,7 (min)	80 / -1,0 (peak) 50 / -3,0 (min)	-6		

W3538B0300 / W3538E0300 / W3538T0300

Typical free space performance, measured in test unit mechanics (position1.)

Frequency Range [MHz]	Max Gain [dBi]	Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [$^{\circ}$ C]
824 – 960	2,8 (peak) 0,7 (min)	65 / -1,9 (peak) 40 / -4,0 (min)	-6	50	-40 to +85
1710 – 1990	4,5 (peak) 2,9 (min)	70 / -1,6 (peak) 60 / -2,2 (min)	-6		
1920 – 2170	4,0 (peak) 3,0 (min)	70 / -1,6 (peak) 60 / -2,2 (min)	-6		

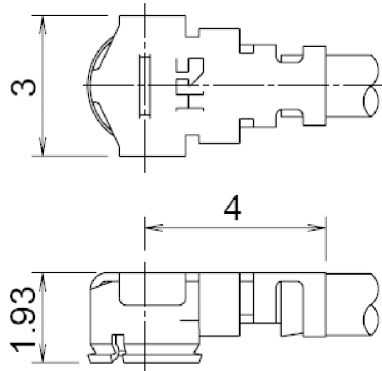
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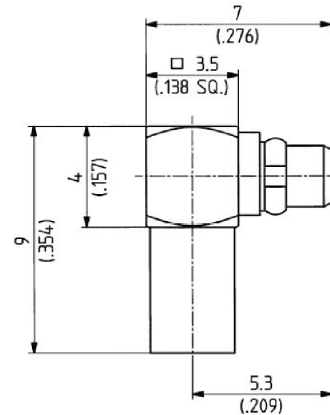
Cable and Connector Configuration

Antenna feed cable: 1.13mm OD with Hirose connector (U.FL series, MHF compatible), 1.13 OD with MMCX right angle jack (male), 0.81mm OD with Murata GSC connector, 0.81mm OD with Sunridge MCD connector

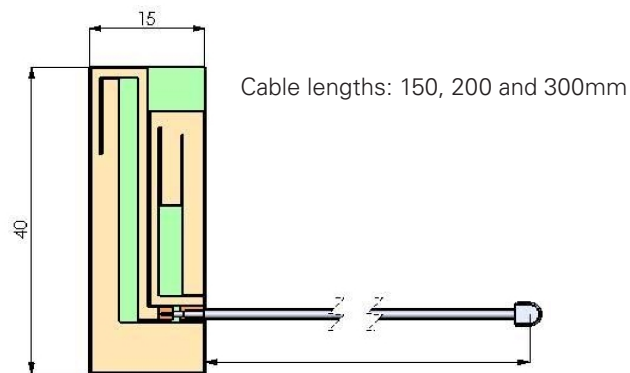
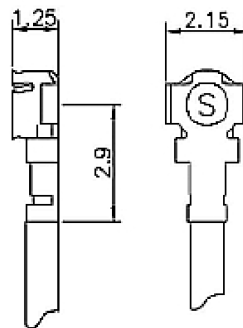
Hirose U.FL connector



MMCX right angle jack (male)



Sunridge MCD connector



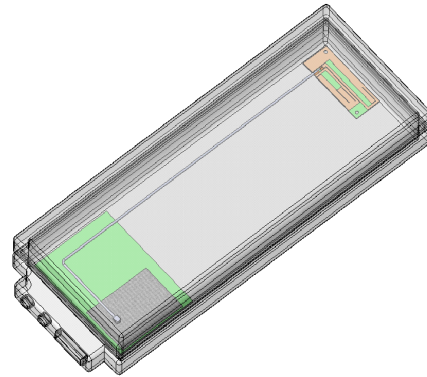
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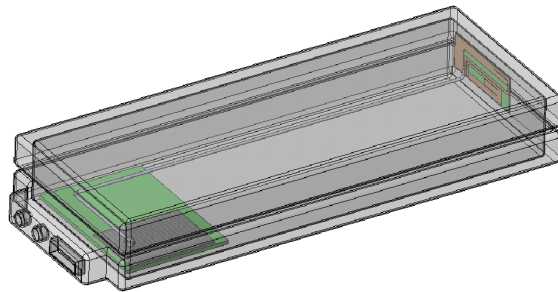
Test Unit and Antenna Mounting Options

Test unit is illustrative and antenna does not need effective ground plane

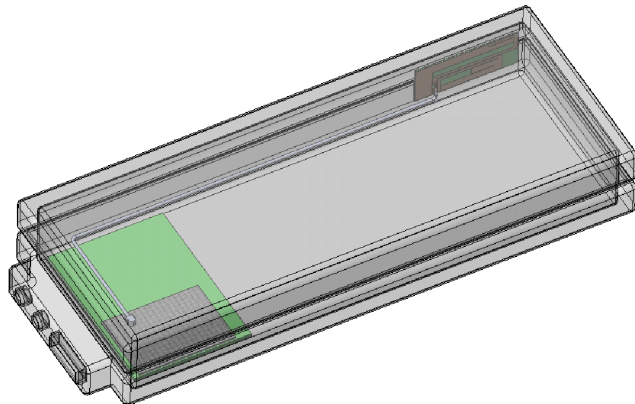
Position 1. Antenna could be mounted at same plane and level as device board or a different level also



Position 2. Antenna could be mounted on upright position at bottom end of device



Position 3. Antenna could be mounted on upright position at long edge of device



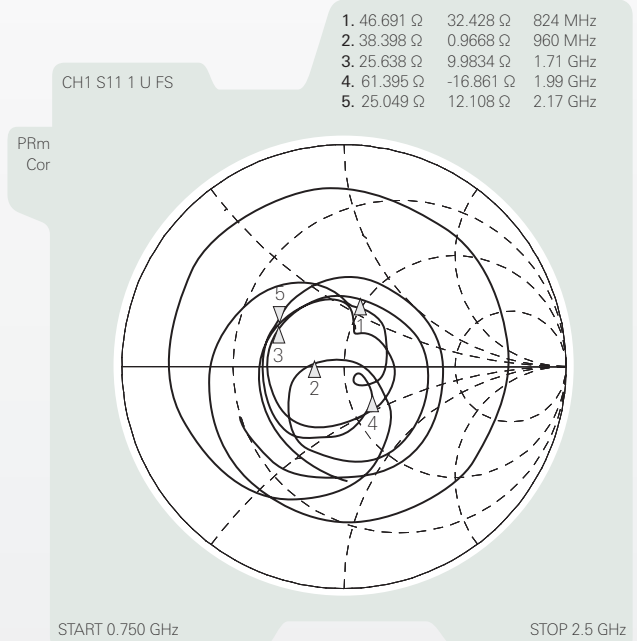
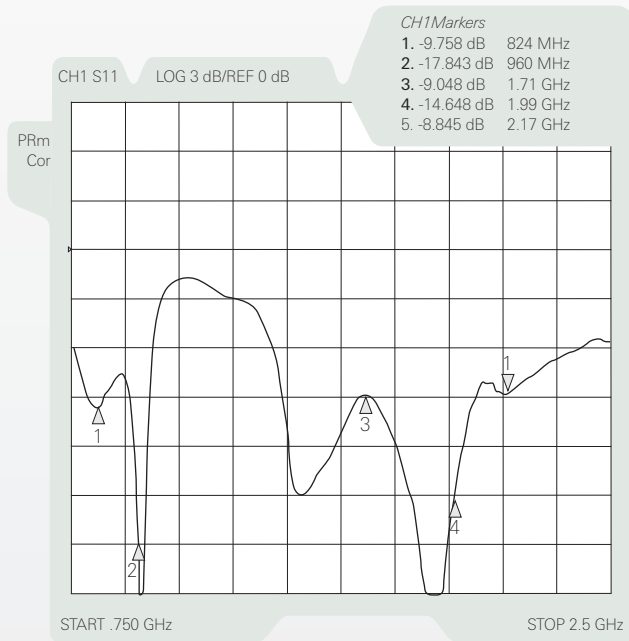
Penta-Band Stand Alone PWB Antenna

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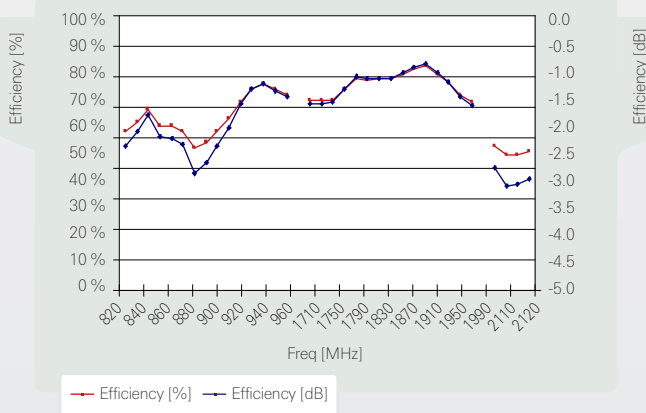
Typical Electrical Characteristics (T=25 °C)

Typical free space performance, measured in test unit mechanics with 200mm feed cable (position 1.)

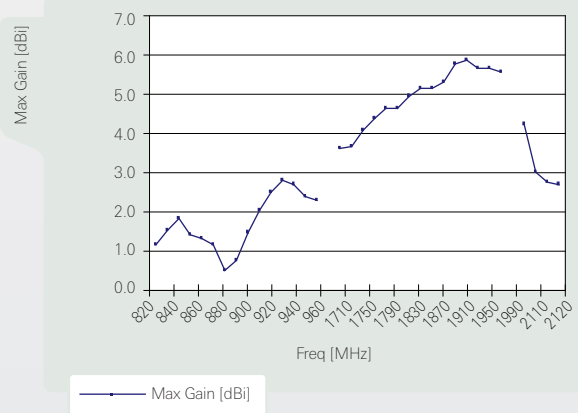
W3538B0200 / W3538E0200/ W3538M0200/ W3538T0200 typical Return Loss S11/impedance



W3502 Total Radiation Efficiency free space



W3502 Maximum Radiation Gain free space



Pulse Finland Oy
 Takatie 6
 90440 Kempele, Finland
 Tel. +358 207 935 500
 Fax: +358 207 935 501

Pulse Antennas USA
 12220 World Trade Drive
 San Diego, CA 92128, USA
 Tel. +1 858 674 8100
 Fax +1 858 385 8003

Pulse (Suzhou) Wireless Products Co., Ltd
 No.99 Huo Ju Road (No.29 Building, 4th phase)
 Suzhou New District Science & Technology Industrial Park,
 Jiangsu Province, Suzhou 215009, P.R. CHINA
 Tel. +86 512 6807 9998
 Fax +86 512 6809 8023

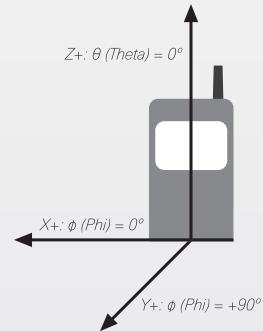
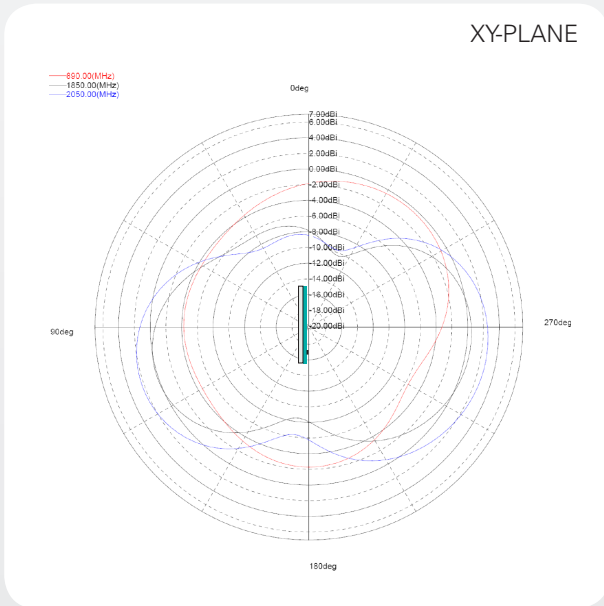
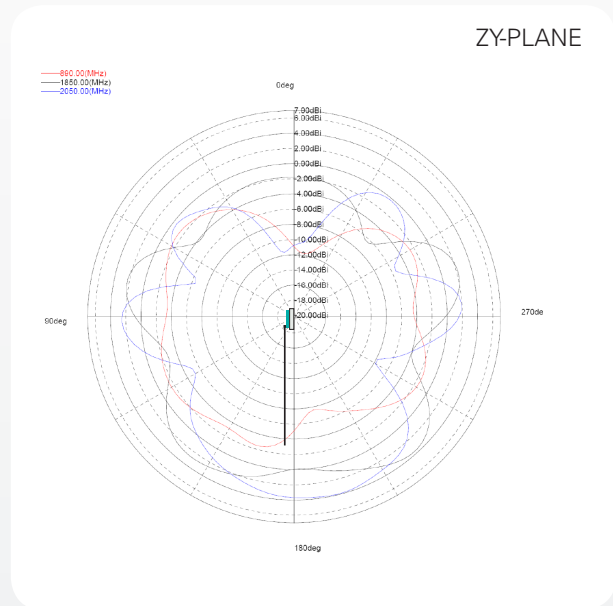
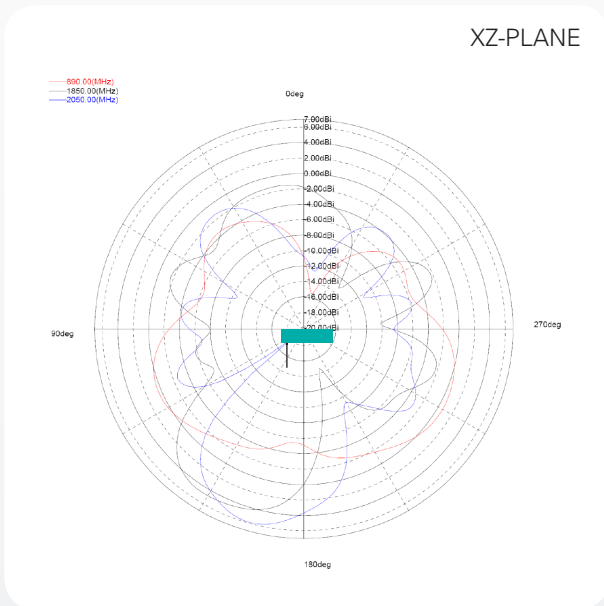
Pulse GmbH & Co. KG
 Postfach 1255
 71071 Herrenberg
 Germany
 Tel. +49 (0) 7032 7806 0
 Fax + 49 (0) 7032 7806 12



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Typical Free Space Radiation Patterns



Pulse Finland Oy
 Takatie 6
 90440 Kempele, Finland
 Tel. +358 207 935 500
 Fax: +358 207 935 501

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 12220 World Trade Drive
 San Diego, CA 92128, USA
 Tel. +1 858 674 8100
 Fax +1 858 385 8003

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 No.99 Huo Ju Road (No.29 Building, 4th phase)
 Suzhou New District Science & Technology Industrial Park,
 Jiangsu Province, Suzhou 215009, P.R. CHINA
 Tel. +86 512 6807 9998
 Fax +86 512 6809 8023

Pulse GmbH & Co. KG
 Postfach 1255
 71071 Herrenberg
 Germany
 Tel. +49 (0) 7032 7806 0
 Fax + 49 (0) 7032 7806 12

