

Series: Panther

PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R





All dimensions are in mm / inches

Features:

- Supports MIMO Cellular LTE 698-960/1695-2170/2300-2700/2900-3600MHz
- Supports WiFi and DSRC 2400-2500MHz/4900-5925MHz
- Supports Beidou, GPS, Galileo, GLONASS
- Direct Mount and optional Magnetic Mount features
- See GPSMBMM for magnetic mount details
 Applications:
 - Telematics
 - Location based services
 - First Responders(Police, Ambulance, Fire)
 - Government
 - Energy(Utility Vehicles)
 - Fleet Management
 - Railroad



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This document covers all product variants of the following product family

Model No.	Color	Remark
GPSMB401	Black	
GPSMB402	White	
GPSMB401R	Black	Compliant with EN 50155, EN 61373, EN45545-2, railroad application.
GPSMB402R	White	Compliant with EN 50155, EN 61373, EN45545-2, railroad application.

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ELECTRICAL SPECIFICATIONS

Frequency (LTE)

Frequency (WiFi & DSRC) Frequency (Beidou,GPS,Galileo,Glonass)

Nominal Impedance VSWR** (LTE) VSWR** (WiFi & DSRC) Gain* (LTE antenna, <2170MHz) Gain* (LTE antenna, >2170MHz) Gain* (WiFi antenna, <2500MHz) Gain* (WiFi antenna, >4900MHz) Isolation LTE to LTE**

GNSS antenna RHCP gain LNA gain Noise Figure Current Vdc LNA and filter attenuation 2700/2900-3600 MHz 2400-2500/4900-5925 MHz 1561.098±2.046/ 1575.42±1.023/ 1602.5625±4MHz

698-960/1695-2170/2300-

<1.5 <1.4 4 dBi ± 2.5 dB 5 dBi ± 2 dB 4.5 dBi ± 1.5 dB 5 dBi ± 2 dB 15 dB or better

50 Ω

1 dBic ± 2 dB 30 dB ± 2 dB 2.5 (cascade) dB 9 mA ± 2 mA 3-5Vdc

ion @ 824 MHz 70 dB @ 960 MHz 65 dB @ 1710 MHz 60 dB @ 2170 MHz 65 dB

*Measured on 2ft GND plane and with 4 inch cables

**In free space with 17ft cables

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ELECTRICAL SPECIFICATIONS

Connector type(s) Cable type(s) Length SMA (LTE and GPS) /SMA-RP (WiFi) RG-58 (LTE and WiFi) / RG-174 (GPS) 17 Feet

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MECHANICAL SPECIFICATIONS

Plastic radome for GPSMB401/GPSMB402

for GPSMB401R/GPSMB402R

Color

Ingress Protection

Weight

Fixing system

ABS/PC Material UV Stabilized, UL-94HB

PC material, EN45545 R6 HL3 compliant

Black, White

IP67

~1340 g

Roof mounting (Also Magnet mounting accessory available, GPSMBMM) Recommended fastening torque 1518ft-lb (20-25Nm).

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	MIL-STD 810G -40/+85° C		
Humidity	95%RH @ +25°C for 12h and 55°C for 12h		
Vibration	MIL-STD 810G, section 514.6 , 5-500 Hz, 60min/axis		
Thermal Shocks	MIL-STD 810G, section 503.5, -40 to +85°C, 3 cycles		
Drop Test	Minimum of one drop per axis – 4, 1 meter drops		

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Tests for railroad certification per EN50155, EN61373, EN45545-2

NO	T SN IN STAND	TEST DESCRIPTION	REFER STANDARD	TEST REPORT NO	RESULT(PASS/FAIL)
1	12.2.3	Cooling test			
2	12.2.4	Dry heat test	EN 50155	DD20170919002	PASS
3	12.2.5	Damp heat test, cyclic			
4	12.2.6	Supply overvoltages	EN 50155	W01714200900E	PASS
5	12.2.7	Surges, electrostatic discharge and transient burst susceptibility tests	EN 50155	E1710056-01E	PASS
6	12.2.8	Radio interference			
7	12.2.9	Insulation test	EN 50155	E17110014-01E	PASS
8	12.2.10	Salt mist test	EN 50155	DD20170919002	PASS
9	0 40.044	Vibration	EN 61373		
9 12.2.11	12.2.11	Shock, and bump test	EN 61373		
10	12.2.12	Watertightness test	EN 50155		
11	12.2.14	Low temperature storge test	EN 50155		
12 /	/	fire & smoke	EN 45545-2 R15&R16	TC 18 02 000528	HL1&HL2
	,		EN 45545-2 R15&R16	TC.18.04.001633	HL1&HL2&HL3

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MECHANICAL DRAWING





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TEST SETUP



For VSWR, test in free space with 17ft cables

For radiation performance, test on 2ft GND plane with 4inch cables

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CHARTS

Return Loss and isolation in free space, LTE antennas**



Return Loss in free space, WiFi antenna**



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CHARTS

Return Loss and isolation, LTE antennas*



Return Loss, WiFi antenna*



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ROHS 10



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CHARTS



GPS isolation to LTE 1 and LTE 2 antenna*

GPS isolation to WiFi antenna*



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CHARTS

Isolation characteristics, WiFi to LTE 1 and LTE 2*



Isolation characteristics, WiFi to LTE 1 and LTE 2**



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CHARTS



GNSS LNA performance

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CHARTS

LTE antenna total efficiency with 2ft metal plate and 4inch cables



Maximum 3D gain, LTE antenna with 2ft metal plate and 4inch cables



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Series: Panther

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CHARTS

WiFi antenna total efficiency with 2ft metal plate and 4inch cables



Maximum 3D gain, WiFi antenna with 2ft metal plate and 4inch cables



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PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R

CHARTS

LTE antenna radiation pattern at 850MHz with 2ft metal plate and 4inch cables



Vertical plot front view

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CHARTS

LTE antenna radiation pattern at 850MHz with 2ft metal plate and



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Series: Panther

PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R

CHARTS

LTE antenna radiation pattern at 1900MHz with 2ft metal plate and 4inch cables



Vertical plot front view

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Series: Panther

PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R

CHARTS

LTE antenna radiation pattern at 1900MHz with 2ft metal plate and 4inch cables



Vertical plot side view

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Series: Panther

PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R

CHARTS

LTE antenna radiation pattern at 2500MHz with 2ft metal plate and 4inch cables



Vertical plot front view

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PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R

CHARTS

LTE antenna radiation pattern at 2500MHz with 2ft metal plate and 4inch cables



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Series: Panther

PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R

CHARTS

LTE antenna radiation pattern at 3250MHz with 2ft metal plate and 4inch cables



Vertical plot front view

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Series: Panther

PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R

CHARTS

LTE antenna radiation pattern at 3250MHz with 2ft metal plate and 4inch cables



Vertical plot side view

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Series: Panther

PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R

CHARTS

WiFi antenna radiation pattern at 2440MHz with 2ft metal plate and 4inch cables



Vertical plot front view

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Series: Panther

PART NUMBER: GPSMB401, GPSMB402, GPSMB401R, GPSMB402R

CHARTS

WiFi antenna radiation pattern at 2440MHz with 2ft metal plate and 4inch cables



Vertical plot side view

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CHARTS

WiFi antenna radiation pattern at 5500MHz with 2ft metal plate and 4inch cables



Vertical plot front view

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CHARTS

WiFi antenna radiation pattern at 5500MHz with 2ft metal plate and 4inch cables



Vertical plot side view

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CHARTS

BD2 RHCP patterns, measured with 4inch cables in free space



GPS & Galileo RHCP patterns, measured with 4inch cables in free space



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CHARTS

GLONASS RHCP patterns, measured with 4inch cables in free space



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CHARTS

Envelope correlation coefficient - LTE 1 to LTE 2



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PACKAGING

One antenna pack in one PE bag, 6 pcs antennas in one box

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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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