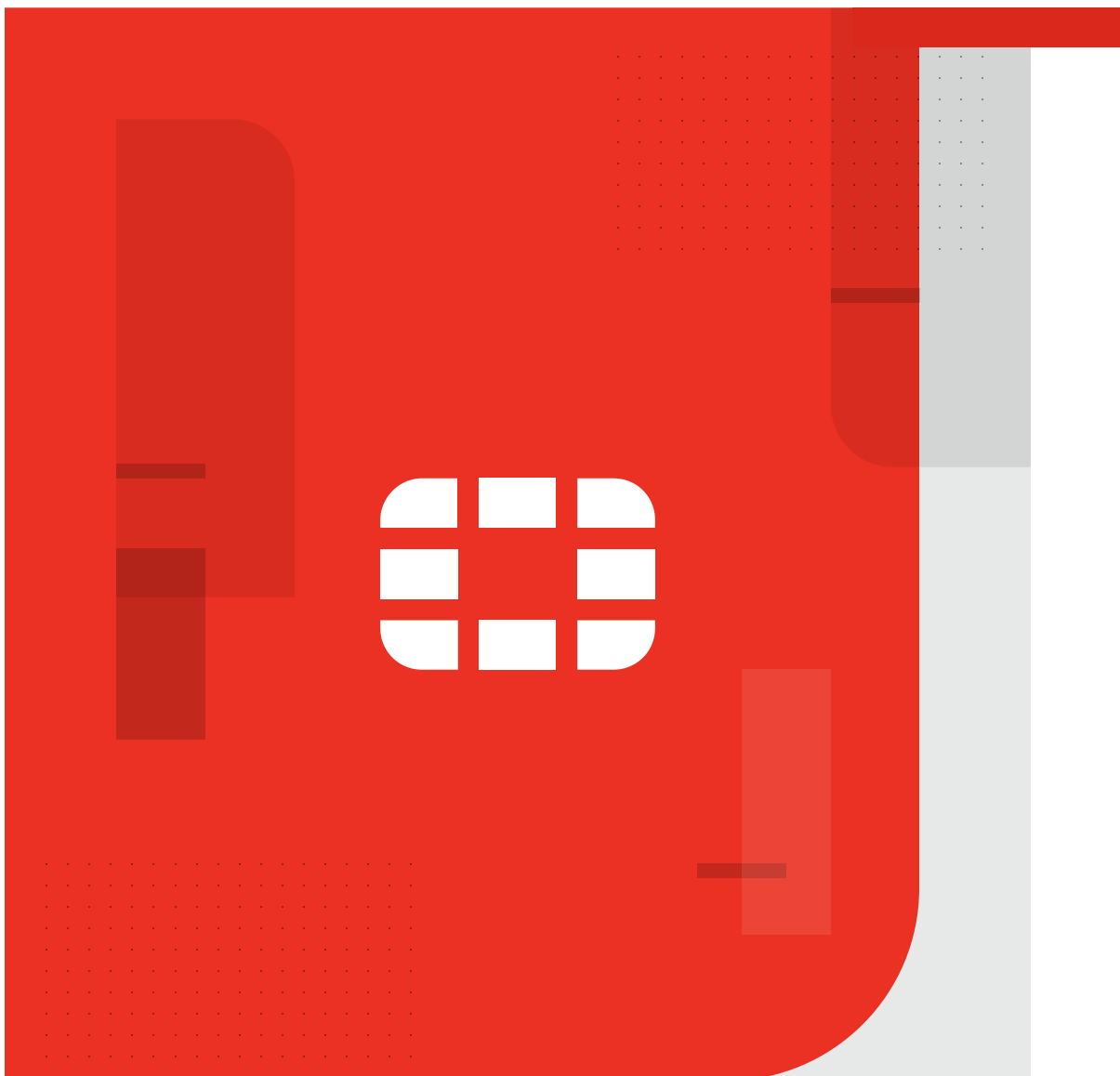


Fortinet Rugged Accessories

Features

Ruggedized External Antennas

Ruggedized External Power Supply Units



Contents

Ruggedized External Antennas 3

Ruggedized External Power Supply Units 32

PRODUCT COMPATIBILITY FOR ANTENNAS							
Model	FANT-3IN1-RND-5M	FANT-5IN1-RND-5M	FANT-7IN1-RND-5M	FANT-5IN1-RCT-5M	FANT-7IN1-RCT-5M	FANT-9IN1-RCT-5M	FANT-11IN1-RCT-5M
FortiGate							
FortiGate 40F-3G4G	✓						
FortiGate 50G-5G/51G-5G		✓		✓			
FortiWifi							
FortiWifi 50G-5G		✓ ¹		✓ ¹			
FortiGate Rugged							
FortiGateRugged 60F-3G4G	✓						
FortiGateRugged 70F-3G4G	✓						
FortiGateRugged 50G-5G		✓		✓			
FortiGateRugged 60G-5G		✓ ²		✓ ²			
FortiGateRugged 70G-5G		✓		✓			
FortiGateRugged 70G-5G-DUAL		✓ (x2 ³)		✓ (x2 ³)		✓	
FortiExtender							
FortiExtender 101G	✓						
FortiExtender 201F	✓						
FortiExtender 202F	✓ (x2)	✓ ⁴		✓ ⁵			
FortiExtender 211G	✓						
FortiExtender 511G		✓ ²		✓ ²			
FortiExtender 511G-WIFI			✓ ²		✓ ²		
FortiExtenderWAN 50G-AM				N/A (internal antennas)			
FortiExtenderWAN 50G-EA							
FortiExtender Rugged							
FortiExtender Rugged 511G				N/A (internal antennas)			
FortiExtender Vehicle							
FortiExtender Vehicle 211F	✓ ¹		✓ ⁵		✓ ⁵		
FortiExtender Vehicle 212F		✓ ¹	✓	✓ ¹	✓		
FortiExtender Vehicle 511G		✓ ¹	✓	✓ ¹	✓		

Note: Separation of at least 46 cm / 18 in is recommended when using dual round antennas.

1. Additional Wi-Fi antenna(s) required (paddle or SMA cable).
2. GPS element will be unused.
3. If using dual 5IN1 antennas, one GPS element will be unused.
4. Additional GNSS antenna required (paddle or SMA).
5. Two 5G/4G elements will be unused.

PRODUCT COMPATIBILITY FOR POWER SUPPLY UNITS		
Product	SP-RGDIN-240-PS	SP-RGDIN-480-PS
FGR-60F / FGR-60F-3G4G	✓	✓
FGR-70F / FGR-70F-3G4G	✓	✓
FGR-50G-5G	✓	✓
FGR-70G / FGR-70G-5G-DUAL	✓	✓
FSR-108F	✓	✓
FSR-112F-POE	Without PoE	With PoE
FSR-216F-POE	Without PoE	With PoE
FSR-424F-POE	Without PoE	Without PoE
FEV-511G	✓	✓

Ruggedized External Antennas



Features

IP67 Rated Waterproof Enclosure

RoHS and REACH Compliant

Optimize wireless coverage and performance

These antennas can help to optimize coverage and overall wireless performance in a range of installation settings. Antennas come in a variety of patterns and with various numbers of antenna elements to help installers find the best match for their equipment.

SKU	5G/ LTE	WI- FI	GNSS	PATTERN	APPLICATION	Form Factor	IP Rating	Cable	Connectors
FANT-3IN1-RND-5M	2	—	1	Omni	Vehicle/Outdoor	Round	IP67	5m	SMA
FANT-5IN1-RND-5M	4	—	1	Omni	Vehicle/Outdoor	Round	IP67	5m	SMA
FANT-7IN1-RND-5M	4	2	1	Omni	Vehicle/Outdoor	Round	IP67	5m	SMA (WI-FI: RP-SMA)
FANT-5IN1-RCT-5M	4	—	1	Omni	Vehicle/Outdoor	Rectangular	IP69K IK10	5m	SMA
FANT-7IN1-RCT-5M	4	2	1	Omni	Vehicle/Outdoor	Rectangular	IP69K IK10	5m	SMA (WI-FI: RP-SMA)
FANT-9IN1-RCT-5M	8	—	1	Omni	Vehicle/Outdoor	Rectangular	IP67 IK08	5m	SMA
FANT-11IN1-RCT-5M	8	2	1	Omni	Vehicle/Outdoor	Rectangular	IP67 IK08	5m	SMA (WiFi: RP-SMA)



FANT-3IN1-RND-5M (Round Antenna)

Vehicle Rooftop or Outdoor Install Antenna

The FANT-3IN1-RND-5M is a three-in-one 5G/LTE/GNSS permanent mount antenna with 5m long low loss antenna cable for vehicle roof or fixed outdoor applications. It has a fully IP67 rated waterproof and weather robust Polycarbonate (PC) enclosure and base. The three antennas inside support 5G/4G LTE and GPS/GLONASS/BeiDou/Galileo. The FANT-3IN1-RND-5M delivers powerful MIMO antenna technology for 5G/4G LTE and an optimized patch antenna of GPS/GLONASS/BeiDou/Galileo for location positioning.

Features

- 2× 5G/4G LTE (600 MHz - 6 GHz) MIMO Antenna
- 1x active GNSS antenna of GPS/ GLONASS/ BeiDou/ Galileo with front end SAW filter and low-noise amplifier
- 5m long low loss and high efficiency/ peak gain outdoor antenna cable (300 mm RG-174 cable + 4700 mm TGC-200 cable) with SMA male connectors
- IP67 Rated Waterproof Enclosure
- RoHS and REACH Compliant



FANT-3IN1-RND-5M (Round Antenna) 5G/LTE Antenna Performance

5G/4G ANTENNA											
Frequency (MHz)		5G NR Band 71	LTE700	GSM 850/900	5G NR Band	DCS	PCS	UMTS1	LTE2600	5G NR Band 77, 78, 79	LTE5200 Wi-Fi 5800
		617 ~698	698 ~824	824 ~960	1427 ~1518	1710 ~1880	1850 ~1990	1920 ~2170	2300 ~2690	3300 ~3800	5150 ~5925
Efficiency (%)											
MIMO 1	5m	21.5	22.7	40.5	33.8	37.2	26.1	23.7	29.5	37.0	33.8
MIMO 2	5m	18.5	23.2	38.6	34.2	35.9	25.6	23.4	28.4	37.1	32.8
Average Gain (dB)											
MIMO 1	5m	-6.67	-6.45	-3.92	-4.71	-4.30	-5.83	-6.26	-5.30	-4.32	-4.71
MIMO 2	5m	-7.32	-6.35	-4.13	-4.66	-4.45	-5.92	-6.31	-5.46	-4.30	-4.84
Peak Gain (dBi)											
MIMO 1	5m	-1.92	-0.37	2.96	2.22	2.72	0.23	0.03	2.24	4.28	3.33
MIMO 2	5m	-2.48	-0.56	2.44	2.08	3.07	0.38	0.03	2.28	4.26	3.20
Impedance		50 Ω									
Polarization		Linear									
Radiation Pattern		Omni									
Max. input power		10W									



FANT-3IN1-RND-5M (Round Antenna) GNSS Antenna Performance

GNSS NAME	GPS	GLONASS	BeiDou	Galileo
COVERED BANDS	L1 (1575.42 MHz)	L1CR (1575.42 MHz) L1PT (1602 MHz)	B1 (1561 MHz)	E2 (1561 MHz) L1 (1575.42 MHz)
PASSIVE GNSS ELECTRICAL				
Frequency (MHz)	1561	1575.42	1602	
VSWR (max.)	2.5	2.5	2.5	
Passive Antenna Efficiency (%) (without cable loss)	40.02	48.39	44.29	
Passive Antenna Gain at Zenith (dBic) (without cable loss)	3.75	4.44	4.54	
Axial Ratio (dB)	20	11	15	
Polarization		RHCP		
Impedance		50 Ω		
Cable		RG-174		
Connector		SMA (M)		
LNA AND FILTER ELECTRICAL PROPERTIES				
Frequency (MHz)	1561	1575.42	1602	
VSWR (max.)	2.0:1	2.0:1	2.0:1	
Gain@1.8V (dBic)	28.8 dB	28.8 dB	28 dB	
Gain@3.0V (dBic)	29 dB	29 dB	28.3 dB	
Gain@5.5V (dBic)	29.6 dB	29.4 dB	28.7 dB	
Noise@1.8V (dB)	2.8 dB	2.3 dB	2.8 dB	
Noise@3.0V (dB)	2.8 dB	2.2 dB	2.8 dB	
Noise@5.5V (dB)	2.9 dB	2.3 dB	2.8 dB	
Power consumption@1.8V (mA)		8.7 mA		
Power consumption@3.0V (mA)		9.0 mA		
Power consumption@5.5V (mA)		11 mA		
TOTAL SPECIFICATION (THROUGH ANTENNA, SAW FILTER, AND LNA)				
Frequency (MHz)	1561	1575.42	1602	
Gain@3V (dBic)	31.7 ±3	32.4 ±3	32.4 ±3	
Output Impedance		50 Ω		



FANT-3IN1-RND-5M (Round Antenna) Antenna 5G/LTE/3G Bands

5G/4G BANDS			
5G NR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA			
Band Number	Uplink	Downlink	Covered
1	UL: 1920 to 1980	DL: 2110 to 2170	✓
2	UL: 1850 to 1910	DL: 1930 to 1990	✓
3	UL: 1710 to 1785	DL: 1805 to 1880	✓
4	UL: 1710 to 1755	DL: 2110 to 2155	✓
5	UL: 824 to 849	DL: 869 to 894	✓
7	UL: 2500 to 2570	DL: 2620 to 2690	✓
8	UL: 880 to 915	DL: 925 to 960	✓
9	UL: 1749.9 to 1784.9	DL: 1844.9 to 1879.9	✓
11	UL: 1427.9 to 1447.9	DL: 1475.9 to 1495.9	✓
12	UL: 699 to 716	DL: 729 to 746	✓
13	UL: 777 to 787	DL: 746 to 756	✓
14	UL: 788 to 798	DL: 758 to 768	✓
17	UL: 704 to 716	DL: 734 to 746	✓
18	UL: 815 to 830	DL: 860 to 875	✓
19	UL: 830 to 845	DL: 875 to 890	✓
20	UL: 832 to 862	DL: 791 to 821	✓
21	UL: 1447.9 to 1462.9	DL: 1495.9 to 1510.9	✓
22	UL: 3410 to 3490	DL: 3510 to 3590	✓
23	UL: 2000 to 2020	DL: 2180 to 2200	✓
24	UL: 1625.5 to 1660.5	DL: 1525 to 1559	✓
25	UL: 1850 to 1915	DL: 1930 to 1995	✓
26	UL: 814 to 849	DL: 859 to 894	✓
27	UL: 807 to 824	DL: 852 to 869	✓
28	UL: 703 to 748	DL: 758 to 803	✓
29	UL: to	DL: 717 to 728	✓
30	UL: 2305 to 2315	DL: 2350 to 2360	✓
31	UL: 452.5 to 457.5	DL: 462.5 to 467.5	✗
32	UL: to	DL: 1452 to 1496	✓
35		1850 to 1910	✓
38		2570 to 2620	✓
39		1880 to 1920	✓
40		2300 to 2400	✓
41		2496 to 2690	✓
42		3400 to 3600	✓
43		3600 to 3800	✓
48		3550 to 3700	✓
66	UL: 1710 to 1780	DL: 2110 to 2200	✓
71		617 to 698	✓
74/75/76		1427 to 1518	✓
78		3300 to 3800	✓
79		4400 to 5000	✓

* Covered Bands represent greater than 20% efficiency.



FANT-5IN1-RND-5M (Round Antenna)

Vehicle Rooftop or Outdoor Install Antenna

The FANT-5IN1-RND-5M (Round Antenna) is a 5-in-1 5G/4G-LTE/GNSS permanent mount antenna with 5m long low loss antenna cable for vehicle roof or fixed outdoor applications. It has a fully IP67 rated waterproof and weather robust Polycarbonate (PC) enclosure and base. The five antennas inside support 5G/4G LTE and GPS/GLONASS/BeiDou/Galileo. The FANT-5IN1-RND-5M (Round Antenna) delivers powerful MIMO antenna technology for 5G/4G LTE and an optimized patch antenna of GPS/GLONASS/BeiDou/Galileo for location positioning.

Features

- 4 × 5G/4G LTE (600MHz - 6GHz) MIMO Antenna
- 1 x active GNSS antenna of GPS/GLONASS/BeiDou/Galileo with front end SAW filter and low-noise amplifier.
- 5m long low loss and high efficiency/peak gain outdoor antenna cable (300mm RG-174LL cable + 4700mm TGC-200 cable) with SMA male connectors
- IP67 Rated Waterproof Enclosure
- RoHS and REACH Compliant



FANT-5IN1-RND-5M (Round Antenna) 5G/LTE Antenna Performance

5G/4G ANTENNA											
Frequency (MHz)		5G NR Band 71	LTE700	GSM 850/900	5G NR Band	DCS	PCS	UMTS1	LTE2600	5G NR Band 77, 78, 79	LTE5200 Wi-Fi 5800
		617 ~698	698 ~824	824 ~960	1427 ~1518	1710 ~1880	1850 ~1990	1920 ~2170	2300 ~2690	3300 ~3800	5150 ~5925
Efficiency (%)											
MIMO 1	5m	21.5	22.7	40.5	33.8	37.2	26.1	23.7	29.5	37.0	33.8
MIMO 2	5m	18.5	23.2	38.6	34.2	35.9	25.6	23.4	28.4	37.1	32.8
MIMO 3	5m	18.3	24.2	26.9	35.4	37.9	32.3	29.9	37.1	23.4	30.7
MIMO 4	5m	20.1	23.6	25.8	36.7	37.0	32.9	30.9	36.4	22.3	33.1
Average Gain (dB)											
MIMO 1	5m	-6.67	-6.45	-3.92	-4.71	-4.30	-5.83	-6.26	-5.30	-4.32	-4.71
MIMO 2	5m	-7.32	-6.35	-4.13	-4.66	-4.45	-5.92	-6.31	-5.46	-4.30	-4.84
MIMO 3	5m	-7.37	-6.16	-5.70	-4.51	-4.22	-4.91	-5.24	-4.31	-6.31	-5.13
MIMO 4	5m	-6.96	-6.26	-5.88	-4.36	-4.31	-4.83	-5.10	-4.39	-6.51	-4.81
Peak Gain (dBi)											
MIMO 1	5m	-1.92	-0.37	2.96	2.22	2.72	0.23	0.03	2.24	4.28	3.33
MIMO 2	5m	-2.48	-0.56	2.44	2.08	3.07	0.38	0.03	2.28	4.26	3.20
MIMO 3	5m	-2.19	-1.41	0.47	2.04	3.29	1.64	1.69	3.19	1.61	2.87
MIMO 4	5m	-2.14	-1.54	0.05	2.13	2.97	1.62	1.25	3.40	1.03	3.57
Impedance		50 Ω									
Polarization		Linear									
Radiation Pattern		Omni									
Max. input power		10W									



FANT-5IN1-RND-5M (Round Antenna) GNSS Antenna Performance

GNSS Name	GPS	GLONASS	BeiDou	Galileo	Compass	SBAS
COVERED BANDS	L1 (1575.42MHz)	L1CR (1575.42MHz) L1PT (1602MHz)	B1 (1561MHz)	E2 (1561MHz) L1 (1575.42MHz)	E2 (B1) 1561MHz	WAAS/EGN OS 1575.42MHz

PASSIVE GNSS ELECTRICAL			
Frequency (MHz)	1561	1575.42	1602
VSWR (max.)	2.5	2.5	2.5
Passive Antenna Efficiency (%) (without cable loss)	40.02	48.39	44.29
Passive Antenna Gain at Zenith (dBic) (without cable loss)	3.75	4.44	4.54
Axial Ratio (dB)	20	11	15
Polarization		RHCP	
Impedance		50 Ω	
Cable		RG-174	
Connector		SMA (M)	

LNA AND FILTER ELECTRICAL PROPERTIES			
Frequency (MHz)	1561	1575.42	1602
VSWR (max.)	2.0:1	2.0:1	2.0:1
Gain@1.8V (dBic)	28.8 dB	28.8 dB	28 dB
Gain@3.0V (dBic)	29 dB	29 dB	28.3 dB
Gain@5.5V (dBic)	29.6 dB	29.4 dB	28.7 dB
Noise@1.8V (dB)	2.8 dB	2.3 dB	2.8 dB
Noise@3.0V (dB)	2.8 dB	2.2 dB	2.8 dB
Noise@5.5V (dB)	2.9 dB	2.3 dB	2.8 dB
Power consumption@1.8V (mA)		8.7 mA	
Power consumption@3.0V (mA)		9.0 mA	
Power consumption@5.5V (mA)		11 mA	

TOTAL SPECIFICATION (THROUGH ANTENNA, SAW FILTER, AND LNA)			
Frequency (MHz)	1561	1575.42	1602
Gain@3V (dBic)	31.7 ±3	32.4 ±3	32.4 ±3
Output Impedance		50 Ω	



FANT-5IN1-RND-5M (Round Antenna) Antenna 5G/4G Bands

5G/4G BANDS			
Band Number	5GNR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA		Covered
	Uplink	Downlink	
1	UL: 1920 to 1980	DL: 2110 to 2170	✓
2	UL: 1850 to 1910	DL: 1930 to 1990	✓
3	UL: 1710 to 1785	DL: 1805 to 1880	✓
4	UL: 1710 to 1755	DL: 2110 to 2155	✓
5	UL: 824 to 849	DL: 869 to 894	✓
7	UL: 2500 to 2570	DL: 2620 to 2690	✓
8	UL: 880 to 915	DL: 925 to 960	✓
9	UL: 1749.9 to 1784.9	DL: 1844.9 to 1879.9	✓
11	UL: 1427.9 to 1447.9	DL: 1475.9 to 1495.9	✓
12	UL: 699 to 716	DL: 729 to 746	✓
13	UL: 777 to 787	DL: 746 to 756	✓
14	UL: 788 to 798	DL: 758 to 768	✓
17	UL: 704 to 716	DL: 734 to 746	✓
18	UL: 815 to 830	DL: 860 to 875	✓
19	UL: 830 to 845	DL: 875 to 890	✓
20	UL: 832 to 862	DL: 791 to 821	✓
21	UL: 1447.9 to 1462.9	DL: 1495.9 to 1510.9	✓
22	UL: 3410 to 3490	DL: 3510 to 3590	✓
23	UL: 2000 to 2020	DL: 2180 to 2200	✓
24	UL: 1625.5 to 1660.5	DL: 1525 to 1559	✓
25	UL: 1850 to 1915	DL: 1930 to 1995	✓
26	UL: 814 to 849	DL: 859 to 894	✓
27	UL: 807 to 824	DL: 852 to 869	✓
28	UL: 703 to 748	DL: 758 to 803	✓
29	UL: -	DL: 717 to 728	✓
30	UL: 2305 to 2315	DL: 2350 to 2360	✓
31	UL: 452.5 to 457.5	DL: 462.5 to 467.5	✗
32	UL: -	DL: 1452 - 1496	✓
35		1850 to 1910	✓
38		2570 to 2620	✓
39		1880 to 1920	✓
40		2300 to 2400	✓
41		2496 to 2690	✓
42		3400 to 3600	✓
43		3600 to 3800	✓
48		3550 to 3700	✓
66	UL: 1710 to 1780	DL: 2110 to 2200	✓
71		617 to 698	✓
74/75/76		1427 to 1518	✓
78		3300 to 3800	✓
79		4400 to 5000	✓

* Covered Bands represent greater than 20% efficiency.



FANT-7IN1-RND-5M (Round Antenna)

Vehicle Rooftop or Outdoor Install Antenna

The FANT-7IN1-RND-5M (Round Antenna) is a 7-in-1 5G/4G-LTE/Wi-Fi/GNSS permanent mount antenna with 5m long low loss antenna cable for vehicle roof or fixed outdoor applications. It has a fully IP67 rated waterproof and weather robust Polycarbonate (PC) enclosure and base. The 7 antennas inside support 5G/4G LTE, Wi-Fi and GPS/GLONASS/BeiDou/Galileo. The FANT-7IN1-RND-5M (Round Antenna) delivers powerful MIMO antenna technology for 5G/4G LTE, an optimized patch antenna of GPS/GLONASS/BeiDou/Galileo for location positioning and Wi-Fi Client connectivity.

Features

- 4× 5G/4G LTE (600MHz - 6GHz) MIMO Antenna
- 2x Wi-Fi 2.4GHz/5.8GHz MIMO Antenna
- 1x active GNSS antenna of GPS/GLONASS/BeiDou/Galileo with front end SAW filter and low-noise amplifier.
- 5m long low loss and high efficiency/peak gain outdoor antenna cable (RG-174 for GNSS and TGC-200 for 5G/LTE and Wi-Fi) with SMA male connectors and Wi-Fi with male RP-SMA
- IP67 Rated Waterproof Enclosure
- RoHS and REACH Compliant



FANT-7IN1-RND-5M (Round Antenna) 5G/LTE Antenna Performance

5G/4G ANTENNA											
Frequency (MHz)		5G NR Band 71	LTE700	GSM 850/900	5G NR Band	DCS	PCS	UMTS1	LTE2600	5G NR Band 77, 78, 79	LTE5200 Wi-Fi 5800
		617 ~698	698 ~824	824 ~960	1427 ~1518	1710 ~1880	1850 ~1990	1920 ~2170	2300 ~2690	3300 ~3800	5150 ~5925
Efficiency (%)											
MIMO 1	5m	30.79	30.39	34.96	39.48	46.48	32.68	32.15	43.45	49.25	49.39
MIMO 2	5m	18.62	31.96	30.24	43.80	42.07	37.06	38.94	44.95	31.36	44.49
MIMO 3	5m	30.07	30.40	32.11	47.07	42.70	34.09	33.14	41.63	49.49	20.60
MIMO 4	5m	21.05	30.90	32.56	38.32	42.80	39.73	38.88	43.70	29.88	48.09
Average Gain (dB)											
MIMO 1	5m	-5.12	-5.17	-4.56	-4.04	-3.33	-4.86	-4.93	-3.62	-3.08	-3.06
MIMO 2	5m	-7.30	-4.95	-5.19	-3.59	-3.76	-4.31	-4.10	-3.47	-5.04	-3.52
MIMO 3	5m	-5.22	-5.17	-4.93	-3.27	-3.70	-4.67	-4.80	-3.81	-3.06	-6.86
MIMO 4	5m	-6.77	-5.10	-4.87	-4.17	-3.69	-4.01	-4.10	-3.59	-5.25	-3.18
Peak Gain (dBi)											
MIMO 1	5m	-0.08	1.04	2.03	2.94	4.55	2.93	3.20	4.96	5.82	5.90
MIMO 2	5m	-0.58	0.49	1.42	3.76	3.31	2.32	3.75	4.84	3.77	5.89
MIMO 3	5m	0.25	1.44	1.63	3.47	3.77	2.45	3.00	5.06	5.99	5.57
MIMO 4	5m	-0.20	1.13	2.93	2.52	3.61	2.79	3.97	4.76	2.91	6.28
Impedance		50 Ω									
Polarization		Linear									
Radiation Pattern		Omni									
Max. input power		2W									



FANT-7IN1-RND-5M (Round Antenna) Wi-Fi Antenna Performance

WI-FI MIMO			
Frequency (MHz)		2400~2500	5150~5850
Efficiency (%)			
MIMO 1	5m	33.16	42.72
MIMO 2	5m	47.59	47.92
Average Gain (dB)			
MIMO 1	5m	-4.79	-3.69
MIMO 2	5m	-3.22	-3.19
Peak Gain (dBi)			
MIMO 1	5m	2.11	5.78
MIMO 2	5m	3.12	7.03
Impedance		50 Ω	
Polarization		Linear	
Radiation Pattern		Omni	
Max. input power		2W	

FANT-7IN1-RND-5M (Round Antenna) GNSS Antenna Performance

GNSS Name	GPS	GLONASS	BeiDou	Galileo	QZSS (Regional)	SBAS
COVERED BANDS	L1 (1575.42MHz)	G1 1602 MHz	B1C (1575.42 MHz) B1I (1561 MHz)	E1 (1575.42MHz)	L1 1575.42 MHz	L1/E1/B1 1575.42 MHz G1 1602 MHz

PASSIVE GNSS ELECTRICAL			
Frequency (MHz)	1561	1575.42	1602
VSWR (max.)	2.5	2.5	2.5
Passive Antenna Efficiency (%) (without cable loss)	40.02	48.39	44.29
Passive Antenna Gain at Zenith (dBic) (without cable loss)	3.75	4.44	4.54
Axial Ratio (dB)	20	11	15
Polarization	RHCP		
Impedance	50 Ω		



LNA AND FILTER ELECTRICAL PROPERTIES

Frequency (MHz)	1561	1575.42	1602
VSWR (max.)	2.0:1	2.0:1	2.0:1
Gain@1.8V (dBic)	28.8 dB	28.8 dB	28 dB
Gain@3.0V (dBic)	29 dB	29 dB	28.3 dB
Gain@5.5V (dBic)	29.6 dB	29.4 dB	28.7 dB
Noise@1.8V (dB)	2.8 dB	2.3 dB	2.8 dB
Noise@3.0V (dB)	2.8 dB	2.2 dB	2.8 dB
Noise@5.5V (dB)	2.9 dB	2.3 dB	2.8 dB
Power consumption@1.8V (mA)		8.7 mA	
Power consumption@3.0V (mA)		9.0 mA	
Power consumption@5.5V (mA)		11 mA	

TOTAL SPECIFICATION (THROUGH ANTENNA, SAW FILTER, AND LNA)

Frequency (MHz)	1561	1575.42	1602
Gain@3V (dBic)	31.7 ±3	32.4 ±3	32.4 ±3
Output Impedance		50 Ω	



FANT-7IN1-RND-5M (Round Antenna) Antenna 5G/4G Bands

5G/4G BANDS			
Band Number	5GNR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA		Covered
	Uplink	Downlink	
1	UL: 1920 to 1980	DL: 2110 to 2170	✓
2	UL: 1850 to 1910	DL: 1930 to 1990	✓
3	UL: 1710 to 1785	DL: 1805 to 1880	✓
4	UL: 1710 to 1755	DL: 2110 to 2155	✓
5	UL: 824 to 849	DL: 869 to 894	✓
7	UL: 2500 to 2570	DL: 2620 to 2690	✓
8	UL: 880 to 915	DL: 925 to 960	✓
9	UL: 1749.9 to 1784.9	DL: 1844.9 to 1879.9	✓
11	UL: 1427.9 to 1447.9	DL: 1475.9 to 1495.9	✓
12	UL: 699 to 716	DL: 729 to 746	✓
13	UL: 777 to 787	DL: 746 to 756	✓
14	UL: 788 to 798	DL: 758 to 768	✓
17	UL: 704 to 716	DL: 734 to 746 (LTE only)	✓
18	UL: 815 to 830	DL: 860 to 875 (LTE only)	✓
19	UL: 830 to 845	DL: 875 to 890	✓
20	UL: 832 to 862	DL: 791 to 821	✓
21	UL: 1447.9 to 1462.9	DL: 1495.9 to 1510.9	✓
22	UL: 3410 to 3490	DL: 3510 to 3590	✓
23	UL: 2000 to 2020	DL: 2180 to 2200 (LTE only)	✓
24	UL: 1625.5 to 1660.5	DL: 1525 to 1559 (LTE only)	✓
25	UL: 1850 to 1915	DL: 1930 to 1995	✓
26	UL: 814 to 849	DL: 859 to 894	✓
27	UL: 807 to 824	DL: 852 to 869 (LTE only)	✓
28	UL: 703 to 748	DL: 758 to 803 (LTE only)	✓
29	UL: -	DL: 717 to 728 (LTE only)	✓
30	UL: 2305 to 2315	DL: 2350 to 2360 (LTE only)	✓
31	UL: 452.5 to 457.5	DL: 462.5 to 467.5 (LTE only)	✗
32	UL: -	DL: 1452 - 1496	✓
35		1850 to 1910	✓
38		2570 to 2620	✓
39		1880 to 1920	✓
40		2300 to 2400	✓
41		2496 to 2690	✓
42		3400 to 3600	✓
43		3600 to 3800	✓
48		3550 to 3700	✓
66	UL: 1710 to 1780	DL: 2110 to 2200	✓
71		617 to 698	✓
74/75/76		1427 to 1518	✓
78		3300 to 3800	✓
79		4400 to 5000	✓

* Covered Bands represent greater than 20% efficiency.



Specifications

	FANT-3IN1-RND-5M (ROUND ANTENNA)	FANT-5IN1-RND-5M (ROUND ANTENNA)	FANT-7IN1-RND-5M (ROUND ANTENNA)
Mechanical			
Height	57.47 mm	57.47mm	57.47mm
Planner Dimension	Ø160mm	Ø160mm	Ø160mm
Casing	PC	PC	PC
Cable	0.3 m RG-174LL with 4.7 m TGC-200 for 5G/4G	0.3m RG-174LL with 4.7m TGC-200 for 5G/4G	5m TGC-200 for 5G/4G
	0.3 m RG-174LL with 4.7 m TGC-200 for GNSS	0.3m RG174LL with 4.7m TGC-200 for GNSS	5m TGC-200 for Wi-Fi 5m RG174 for GNSS
Connector	5G/4G: SMA (M)	5G/4G: SMA (M)	5G/4G: SMA (M)
	GNSS: SMA (M)	GNSS: SMA (M)	GNSS: SMA (M) Wi-Fi: RP-SMA (M)
Thread	18.23 mm	18.23mm	18.23mm
Thread Diameter	M22	M22	M22
Waterproof	IP67	IP67	IP67
Sealant	Rubber Stopper and O-Ring	Rubber Stopper and O-Ring	Rubber Stopper and O-Ring
Weight	2.7 kg	2.7 kg	2.5 kg
Environmental			
Ingress Protection	IP67	IP67	IP67
Temperature Range	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH	Non-condensing 65°C 95% RH	Non-condensing 65°C 95% RH
Cable Pull	RG-174: 4 kg	RG-174: 4 kg	RG-174: 4 kg
Mounting			
Vehicle	Roof mount	Roof mount	Roof mount
Outdoor	Wall/pole mount (mounting bracket is needed, purchasable accessory)	Wall/pole mount (mounting bracket is needed, purchasable accessory)	Wall/pole mount (mounting bracket is needed, purchasable accessory)



FANT-5IN1-RCT-5M

Vehicle Rooftop or Outdoor Install Antenna

Rugged 5-in-1 outdoor IP69K and IK10 waterproof antenna supporting 4× 5G/LTE and 1x active GNSS connections, with an integrated 5-meter braided cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.

Features

- 4× 5G/4G LTE (600MHz - 6GHz) MIMO Antenna
- 1x active GNSS antenna of GPS/GLONASS/BeiDou/Galileo with front end SAW filter and lownoise amplifier
- 5m long low loss and high efficiency/peak gain outdoor antenna cable with SMA male connectors
- IP69K and IK10 Rated Waterproof Enclosure
- RoHS and REACH Compliant



FANT-5IN1-RCT-5M 5G/LTE Antenna Performance

5G/4G ANTENNA											
		5G NR Band 71	5G/4G 700	GSM800 / 900	5G NR Band 1500	5G NR N66	5G/4G 2600	5G NR N77	5G NR N78	5G NR N79	5G/4G 5200
Frequency (MHz)		617-698	698-824	824-960	1427-1518	1710-2200	2300-2690	3300-4200	3300-3800	4400-5000	5150-5925
Efficiency (%)											
MIMO 1	5m	49.8	49.7	50.8	27.9	47.7	45.2	63.8	64.2	49.9	48.9
MIMO 2	5m	36.6	39.5	43.7	27.8	53.7	56.8	63.1	63.5	51.2	41.2
MIMO 3	5m	36.4	35.4	37.5	24.5	51.2	52.6	59.7	60.3	52.9	43.5
MIMO 4	5m	44.5	50.3	48.0	26.7	42.5	47.0	61.2	61.7	45.4	40.1
Average Gain (dB)											
MIMO 1	5m	-3.03	-3.04	-2.94	-5.54	-3.21	-3.45	-1.95	-1.92	-3.02	-3.11
MIMO 2	5m	-4.37	-4.03	-3.6	-5.56	-2.7	-2.45	-2	-1.97	-2.91	-3.86
MIMO 3	5m	-4.38	-4.51	-4.26	-6.1	-2.91	-2.79	-2.24	-2.2	-2.76	-3.62
MIMO 4	5m	-3.52	-2.99	-3.19	-5.74	-3.72	-3.28	-2.13	-2.1	-3.43	-3.97
Peak Gain (dB)											
MIMO 1	5m	0.87	2.94	2.64	1.01	5.15	6.16	6.23	6.23	5.49	5.76
MIMO 2	5m	0.91	2.11	2.18	1.21	5.44	6.97	6.78	6.78	6.77	4.93
MIMO 3	5m	1.03	1.97	2.17	1.11	5.63	6.72	7.74	7.74	5.8	6.48
MIMO 4	5m	2.25	2.25	2.25	0.99	4.65	6.15	5.97	5.97	5.96	4.44
Impedance		50 Ω									
Polarization		Linear									
Radiation Pattern		Omni-directional									

FANT-5IN1-RCT-5M GNSS Antenna Performance

GNSS Name	GPS	GLONASS	BeiDou	Galileo	QZSS (Regional)	IRNSS (Regional)	SBAS
COVERED BANDS	L5 (1176.45 MHz)	G1 (1602 MHz)	B2A (1176.45 MHz)	E5a (1176.45 MHz)	L5 (1176.45 MHz)	L5 (1176.45 MHz)	L5 (1176.45 MHz)
	L1 (1575.42 MHz)		B1I (1561.10 MHz)	E1 (1575.42 MHz)	L1 (1575.42 MHz)		L1 (1575.42 MHz)
			B1C (1575.42 MHz)				G1 (1602MHz)

PASSIVE GNSS ELECTRICAL				
	GPS L5	BeiDou B1	GPS L1	GLONASS G1
Frequency (MHz)	1164-1189	1559-1592	1565-1586	1596-1610
Average Gain (dB)	-2.95	-2	-1.77	-2.62
Efficiency (%)	50.7	63	66.5	54.7
Peak Gain (dBi)	2.49	3.93	3.93	3.38
Axial Ratio at Zenith	5	4.8	11.7	13.1
Impedance	50 Ω			
Polarization	RHCP			

LNA AND FILTER ELECTRICAL PROPERTIES (3.3V TYP.)		
Frequency	Low-Band	High-Band
LNA Gain (dB)	26.3	32.3
Current Consumption (mA)		16.8
Outer Band Attenuation at 500~1000 MHz		60 dB
Outer Band Attenuation at 2000~2690 MHz		60 dB
Outer Band Attenuation at 3300~6000 MHz		60 dB
Output Impedance		50 ohm
Input Voltage (V)		+1.8 to 5.5



FANT-7IN1-RCT-5M

Vehicle Rooftop or Outdoor Install Antenna

Rugged 7-in-1 outdoor IP69K and IK10 waterproof antenna supporting 4× 5G/LTE, 2× 2.4G/5G Wi-Fi, and 1x active GNSS connections, with an integrated 5-meter braided cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.

Features

- 4× 5G/4G LTE (600MHz - 6GHz) MIMO Antenna
- 2x Wi-Fi 2.4GHz/5.8GHz MIMO Antenna
- 1x active GNSS antenna of GPS/GLONASS/BeiDou/Galileo with front end SAW filter and lownoise amplifier
- 5m long low loss and high efficiency/peak gain outdoor antenna cable with SMA male connectors and Wi-Fi with male RP-SMA
- IP69K and IK10 Rated Waterproof Enclosure
- RoHS and REACH Compliant



FANT-7IN1-RCT-5M 5G/LTE Antenna Performance

5G/4G ANTENNA									
		5G NR Band 71	5G/4G 700	GSM800 / 900	5G NR Band 1500	5G-4G band 1, 2, 3, 4, 9, 23, 25, 35, 9, 66	5G/4G 2600	5GNR/4G band 22,42,48,77,78,79	5G/4G 5200
Frequency (MHz)		617-698	698-824	824-960	1427-1518	1710-2200	2300-2690	3300-5000	5150-5925
Efficiency (%)									
MIMO 1	5m	49.8	49.7	50.8	27.9	47.7	45.2	58.9	48.9
MIMO 2	5m	36.6	39.5	43.7	27.8	53.7	56.8	58.9	41.2
MIMO 3	5m	36.4	35.4	37.5	24.5	51.2	52.6	57.3	43.5
MIMO 4	5m	44.5	50.3	48.0	26.7	42.5	47.0	55.6	40.1
Average Gain (dB)									
MIMO 1	5m	-3.03	-3.04	-2.94	-5.54	-3.21	-3.45	-2.30	-3.11
MIMO 2	5m	-4.37	-4.03	-3.60	-5.56	-2.70	-2.45	-2.30	-3.86
MIMO 3	5m	-4.38	-4.51	-4.26	-6.10	-2.91	-2.79	-2.42	-3.62
MIMO 4	5m	-3.52	-2.99	-3.19	-5.74	-3.72	-3.28	-2.44	-3.97
Peak Gain (dB)									
MIMO 1	5m	0.87	2.94	2.64	1.01	5.15	6.16	6.23	5.76
MIMO 2	5m	0.91	2.11	2.18	1.21	5.44	6.97	6.78	4.93
MIMO 3	5m	1.03	1.97	2.17	1.11	5.63	6.72	7.74	6.48
MIMO 4	5m	2.25	2.25	2.25	0.99	4.65	6.15	5.97	4.44
Impedance		50 Ω							
Polarization		Linear							
Radiation Pattern		Omni-directional							

FANT-7IN1-RCT-5M Wi-Fi Antenna Performance

WI-FI MIMO			
Frequency (MHz)		2400-2500	5150-5850
Efficiency (%)			
MIMO1	5m	53.7	44.3
MIMO2	5m	50.0	46.8
Average Gain (dB)			
MIMO1	5m	-2.70	-3.54
MIMO2	5m	-3.01	-3.30
Peak Gain (dB)			
MIMO1	5m	6.71	6.82
MIMO2	5m	6.09	5.42



FANT-7IN1-RCT-5M GNSS Antenna Performance

GNSS Name	GPS	GLONASS	BeiDou	Galileo	QZSS (Regional)	IRNSS (Regional)	SBAS
COVERED BANDS	L5 (1176.45 MHz)	G1 (1602 MHz)	B2A (1176.45 MHz)	E5a (1176.45 MHz)	L5 (1176.45 MHz)	L5 (1176.45 MHz)	L5 (1176.45 MHz)
	L1 (1575.42 MHz)		B1I (1561.10 MHz)	E1 (1575.42 MHz)	L1 (1575.42 MHz)		L1 (1575.42 MHz)
			B1C (1575.42 MHz)				G1 (1602MHz)

PASSIVE GNSS ELECTRICAL				
	GPS L5	BeiDou B1	GPS L1	GLONASS G1
Frequency (MHz)	1164-1189	1559-1592	1565-1586	1596-1610
Average Gain (dB)	-2.95	-2.00	-1.77	-2.62
Efficiency (%)	50.7	63.0	66.5	54.7
Peak Gain (dBi)	2.5	3.9	3.9	3.4
Axial Ratio at Zenith	5.0	4.8	11.7	13.1
Impedance	50 Ω			
Polarization	RHCP			

LNA AND FILTER ELECTRICAL PROPERTIES (3.3V TYP.)		
Frequency	Low-Band	High-Band
LNA Gain (dB)	26.3	32.3
Current Consumption (mA)		16.8
Outer Band Attenuation at 500~1000 MHz		60 dB
Outer Band Attenuation at 2000~2690 MHz		60 dB
Outer Band Attenuation at 3300~6000 MHz		60 dB
Output Impedance		50 ohm
Input Voltage (V)		+1.8 to 5.5



FANT-9IN1-RCT-5M

Vehicle Rooftop or Outdoor Install Antenna

Rugged 9-in-1 outdoor IP67 and IK08 waterproof antenna supporting 8× 5G/LTE and 1x active GNSS connections, with an integrated 5-meter braided cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.

Features

- 8× 5G/4G LTE (600MHz - 6GHz) MIMO Antenna
- 1x active GNSS antenna of GPS/GLONASS/BeiDou/Galileo with front end SAW filter and lownoise amplifier
- 5m long low loss and high efficiency/peak gain outdoor antenna cable with SMA male connectors
- IP67 and IK08 Rated Waterproof Enclosure
- RoHS and REACH Compliant



FANT-9IN1-RCT-5M 5G/LTE Antenna Performance

5G/4G ANTENNA									
		5G NR Band 71	5G/4G 700	GSM800 / 900	5G NR Band 1500	5G-4G band 1, 2, 3, 4, 9, 23, 25, 35, 9, 66	5G/4G 2600	5G NR/4G band 22, 42, 48, 77, 78, 79	5G/4G 5200
Frequency (MHz)		617-698	698-824	824-960	1427-1518	1710-2200	2300-2690	3300-5000	5150-5925
Efficiency (%)									
MIMO 1	5m	27.0	34.1	38.3	37.4	46.4	49.9	51.4	43.2
MIMO 2	5m	20.4	32.0	36.0	41.9	47.2	48.3	44.9	42.7
MIMO 3	5m	25.6	35.7	28.3	33.1	51.5	48.2	47.4	43.4
MIMO 4	5m	44.1	42.9	35.5	32.9	48.7	38.8	48.2	46.5
MIMO 5	5m	24.9	32.0	29.9	31.2	51.5	39.2	42.5	42.7
MIMO 6	5m	24.5	26.4	28.7	31.5	49.3	49.2	46.2	43.6
MIMO 7	5m	25.1	32.9	36.3	39.7	29.8	39.7	43.1	40.1
MIMO 8	5m	29.9	36.4	40.1	25.7	31.3	43.1	46.1	44.6
Average Gain (dB)									
MIMO 1	5m	-5.69	-4.67	-4.16	-4.27	-3.34	-3.02	-2.89	-3.65
MIMO 2	5m	-6.91	-4.95	-4.44	-3.78	-3.26	-3.16	-3.48	-3.69
MIMO 3	5m	-5.92	-4.48	-5.48	-4.81	-2.88	-3.17	-3.24	-3.63
MIMO 4	5m	-3.56	-3.67	-4.49	-4.82	-3.13	-4.12	-3.17	-3.33
MIMO 5	5m	-6.04	-4.95	-5.24	-5.06	-2.88	-4.07	-3.72	-3.70
MIMO 6	5m	-6.11	-5.79	-5.43	-5.01	-3.07	-3.08	-3.35	-3.61
MIMO 7	5m	-6.00	-4.83	-4.40	-4.02	-5.26	-4.01	-3.65	-3.97
MIMO 8	5m	-5.24	-4.39	-3.97	-5.91	-5.04	-3.65	-3.36	-3.50
Peak Gain (dB)									
MIMO 1	5m	2.03	2.63	1.52	2.73	4.93	5.47	6.13	7.96
MIMO 2	5m	-1.50	1.92	1.50	3.32	4.61	4.39	7.46	7.82
MIMO 3	5m	0.17	2.67	1.20	2.78	5.48	6.12	5.75	5.67
MIMO 4	5m	3.54	2.75	2.45	2.33	5.34	6.69	6.88	5.73
MIMO 5	5m	2.68	1.77	1.53	2.10	6.07	5.96	5.24	5.26
MIMO 6	5m	-0.41	-0.11	-0.35	1.43	6.07	6.79	5.90	5.84
MIMO 7	5m	-1.18	1.97	2.66	2.25	4.22	5.28	5.37	6.03
MIMO 8	5m	0.85	2.24	2.58	0.94	2.93	6.09	6.02	6.14
Impedance		50 Ω							
Polarization		Linear							
Radiation Pattern		Omni-directional							



FANT-9IN1-RCT-5M GNSS Antenna Performance

GNSS Name	GPS	BeiDou	Galileo	QZSS (Regional)	IRNSS (Regional)	SBAS
COVERED BANDS	L5 (1176.45 MHz)	B2A (1176.45 MHz)	E5a (1176.45 MHz)	L5 (1176.45 MHz)	L5 (1176.45 MHz)	L5 / B2a / E5a (1176.45 MHz)
	L1 (1575.42 MHz)	B1 (1561.10 MHz)	E1 (1575.42 MHz)	L1 (1575.42 MHz)		L1 / E1 / B1 (1575.42 MHz)
		B1C (1575.42 MHz)				

PASSIVE GNSS ELECTRICAL				
Frequency (MHz)	1176.45	1561	1575.42	
VSWR (max.)	3.0	3.0	3.0	
Antenna Efficiency (%)	37.77	33.44	40.65	
Antenna Gain at Zenith (dBi)	1.75	3.59	4.51	
Impedance		50		

LNA AND FILTER ELECTRICAL PROPERTIES				
Frequency (MHz)	1176.45	1561	1575.42	1602
Gain (dB)	29.7	28.1	28.8	28.6
Noise Figure (dB)	2.9	2.9	2.8	2.3
Input Voltage Min (V)			1.8	
Input Voltage Max (V)			5.5	
Current Consumption (mA)			5	
ESD Air Discharge (kV)			30	
ESD Contact Discharge (kV)			20	



FANT-11IN1-RCT-5M

Vehicle Rooftop or Outdoor Install Antenna

Rugged 11-in-1 outdoor IP67 and IK08 waterproof antenna supporting 8× 5G/LTE, 2× 2.4G/5G Wi-Fi, and 1x active GNSS connections, with an integrated 5-meter braided cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.

Features

- 8× 5G/4G LTE (600MHz - 6GHz) MIMO Antenna
- 2x Wi-Fi 2.4GHz/5.8GHz/6GHz MIMO Antenna
- 1x active GNSS antenna of GPS/GLONASS/BeiDou/Galileo with front end SAW filter and lownoise amplifier
- 5m long low loss and high efficiency/peak gain outdoor antenna cable with SMA male connectors and Wi-Fi with male RP-SMA
- IP67 and IK08 Rated Waterproof Enclosure
- RoHS and REACH Compliant



FANT-11IN1-RCT-5M 5G/LTE Antenna Performance

5G/4G ANTENNA									
		5G NR Band 71	5G/4G 700	GSM800 / 900	5G NR Band 1500	5G-4G band 1, 2, 3, 4, 9, 23, 25, 35, 9, 66	5G/4G 2600	5G NR/4G band 22, 42, 48, 77, 78, 79	5G/4G 5200
Frequency (MHz)		617-698	698-824	824-960	1427-1518	1710-2200	2300-2690	3300-5000	5150-5925
Efficiency (%)									
MIMO 1	5m	27.0	34.1	38.3	37.4	46.4	49.9	51.4	43.2
MIMO 2	5m	20.4	32.0	36.0	41.9	47.2	48.3	44.9	42.7
MIMO 3	5m	25.6	35.7	28.3	33.1	51.5	48.2	47.4	43.4
MIMO 4	5m	44.1	42.9	35.5	32.9	48.7	38.8	48.2	46.5
MIMO 5	5m	24.9	32.0	29.9	31.2	51.5	39.2	42.5	42.7
MIMO 6	5m	24.5	26.4	28.7	31.5	49.3	49.2	46.2	43.6
MIMO 7	5m	25.1	32.9	36.3	39.7	29.8	39.7	43.1	40.1
MIMO 8	5m	29.9	36.4	40.1	25.7	31.3	43.1	46.1	44.6
Average Gain (dB)									
MIMO 1	5m	-5.69	-4.67	-4.16	-4.27	-3.34	-3.02	-2.89	-3.65
MIMO 2	5m	-6.91	-4.95	-4.44	-3.78	-3.26	-3.16	-3.48	-3.69
MIMO 3	5m	-5.92	-4.48	-5.48	-4.81	-2.88	-3.17	-3.24	-3.63
MIMO 4	5m	-3.56	-3.67	-4.49	-4.82	-3.13	-4.12	-3.17	-3.33
MIMO 5	5m	-6.04	-4.95	-5.24	-5.06	-2.88	-4.07	-3.72	-3.70
MIMO 6	5m	-6.11	-5.79	-5.43	-5.01	-3.07	-3.08	-3.35	-3.61
MIMO 7	5m	-6.00	-4.83	-4.40	-4.02	-5.26	-4.01	-3.65	-3.97
MIMO 8	5m	-5.24	-4.39	-3.97	-5.91	-5.04	-3.65	-3.36	-3.50
Peak Gain (dB)									
MIMO 1	5m	2.03	2.63	1.52	2.73	4.93	5.47	6.13	7.96
MIMO 2	5m	-1.50	1.92	1.50	3.32	4.61	4.39	7.46	7.82
MIMO 3	5m	0.17	2.67	1.20	2.78	5.48	6.12	5.75	5.67
MIMO 4	5m	3.54	2.75	2.45	2.33	5.34	6.69	6.88	5.73
MIMO 5	5m	2.68	1.77	1.53	2.10	6.07	5.96	5.24	5.26
MIMO 6	5m	-0.41	-0.11	-0.35	1.43	6.07	6.79	5.90	5.84
MIMO 7	5m	-1.18	1.97	2.66	2.25	4.22	5.28	5.37	6.03
MIMO 8	5m	0.85	2.24	2.58	0.94	2.93	6.09	6.02	6.14
Impedance		50 Ω							
Polarization		Linear							
Radiation Pattern		Omni-directional							

FANT-11IN1-RCT-5M Wi-Fi Antenna Performance

WI-FI MIMO			
Frequency (MHz)		2400-2500	5150-5850
Efficiency (%)			
MIMO1	5m	56.5	49.2
MIMO2	5m	58.2	49.5
Average Gain (dB)			
MIMO1	5m	-2.48	-3.07
MIMO2	5m	-2.35	-3.05
Peak Gain (dB)			
MIMO1	5m	4.36	5.71
MIMO2	5m	6.55	7.47



FANT-11IN1-RCT-5M GNSS Antenna Performance

GNSS Name	GPS	BeiDou	Galileo	QZSS (Regional)	IRNSS (Regional)	SBAS
COVERED BANDS	L5 (1176.45 MHz)	B2A (1176.45 MHz)	E5a (1176.45 MHz)	L5 (1176.45 MHz)	L5 (1176.45 MHz)	L5 / B2a / E5a (1176.45 MHz)
	L1 (1575.42 MHz)	B1 (1561.10 MHz)	E1 (1575.42 MHz)	L1 (1575.42 MHz)		L1 / E1 / B1 (1575.42 MHz)
		B1C (1575.42 MHz)				

PASSIVE GNSS ELECTRICAL				
Frequency (MHz)	1176.45	1561	1575.42	
VSWR (max.)	3.0	3.0	3.0	
Antenna Efficiency (%)	37.77	33.44	40.65	
Antenna Gain at Zenith (dBi)	1.75	3.59	4.51	
Impedance		50		

LNA AND FILTER ELECTRICAL PROPERTIES				
Frequency (MHz)	1176.45	1561	1575.42	1602
Gain (dB)	29.7	28.1	28.8	28.6
Noise Figure (dB)	2.9	2.9	2.8	2.3
Input Voltage Min (V)			1.8	
Input Voltage Max (V)			5.5	
Current Consumption (mA)			5	
ESD Air Discharge (kV)			30	
ESD Contact Discharge (kV)			20	



Specifications

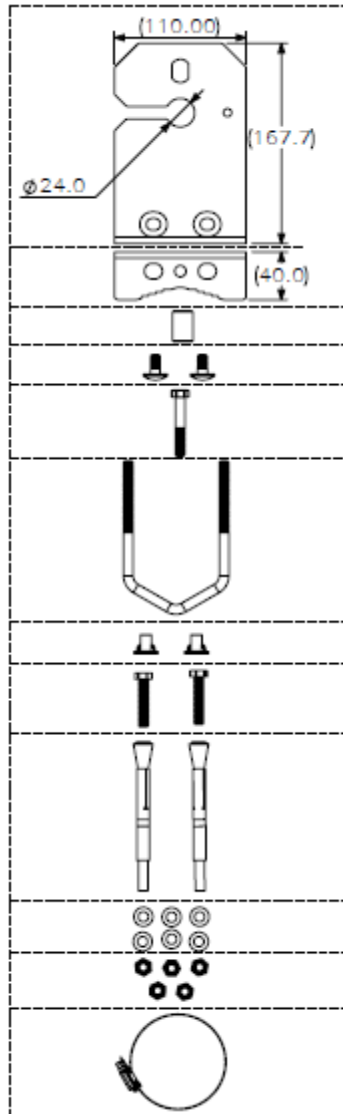
	FANT-5IN1-RCT-5M	FANT-7IN1-RCT-5M	FANT-9IN1-RCT-5M	FANT-11IN1-RCT-5M
Mechanical				
Dimensions	350 × 70 × 39 mm	350 × 70 × 39 mm	330 × 75.5 × 45.2 mm	330 × 75.5 × 45.2 mm
Casing	PC	PC	PC	PC
Cable	0.15 m TGC-302LL with 4.85 m TGC-200 for 5G/4G	0.15 m TGC-302LL with 4.85 m TGC-200 for 5G/4G	0.15 m TGC-1.5DS with 4.85 m TGC-200 for 5G/4G	0.15 m TGC-1.5DS with 4.85 m TGC-200 for 5G/4G
	5m RGC-174 for GNSS	5m RGC-174 for GNSS 0.15 m TGC-302 LL with 4.85 m TGC-200 for Wi-Fi	5m RGC-174 for GNSS	5m RGC-174 for GNSS 0.15 m TGC-1.5DS with 4.85 m TGC-200 for Wi-Fi
Connector	5G/4G: SMA (M)	5G/4G: SMA (M)	5G/4G: SMA (M)	5G/4G: SMA (M)
	GNSS: SMA (M)	GNSS: SMA (M) Wi-Fi: RP-SMA (M)	GNSS: SMA (M)	GNSS: SMA (M) Wi-Fi: RP-SMA (M)
Thread Diameter	M22 × 1.5P	M22 × 1.5P	M27 × 2.0P	M27 × 2.0P
Waterproof	IP69K	IP69K	IP67	IP67
Impact	IK10	IK10	IK08	IK08
Weight	1.44 kg	1.78 kg	2.2 kg	2.52 kg
Environmental				
Ingress Protection	IP69K	IP69K	IP67	IP67
Temperature Range	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH	Non-condensing 65°C 95% RH	Non-condensing 65°C 95% RH	Non-condensing 65°C 95% RH
Mounting				
Vehicle	Roof mount	Roof mount	Roof mount	Roof mount
Outdoor	Surface	Surface	Surface	Surface

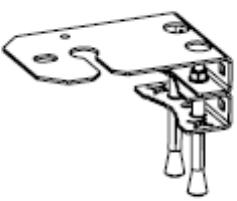


FANT-MNT-2BRKT

Mounting Bracket

Wall/pole mounting bracket kit used to mount Fortinet vehicle/outdoor antenna (such as FANT-3IN1-RND-5M (Round Antenna), FANT-5IN1-RND-5M (Round Antenna), and FANT-7IN1-RND-5M (Round Antenna)) for fixed outdoor application. Each package has two bracket sets inside (two sets per pack).



CONFIGURATIONS
 HOSE CLAMP POLE MOUNT $\varnothing 49\text{mm}$ (1.93") min., $\varnothing 79\text{mm}$ (3.11") max.
 V-BOLT POLE MOUNT $\varnothing 30\text{mm}$ (1.25") min., $\varnothing 70\text{mm}$ (2.75") max.
 T-NUT BEAM MOUNT $t = 4\text{mm}$ (0.16") min., 24mm (0.94") max.
 ANCHOR BOLT WALL MOUNT Hole pattern; $\varnothing 9\text{mm}$ X 80.5mm center to center
 ANCHOR BOLT BASE MOUNT Hole pattern; $\varnothing 13\text{mm}$ X 47.0mm center to center

Ordering Information

Product	SKU	Description
Round Antenna	FANT-3IN1-RND-5M	Rugged 3-in-1 outdoor waterproof antenna supporting 2× 5G/LTE and 1x active GNSS connections, with an integrated 5-meter cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.
	FANT-5IN1-RND-5M	Rugged 5-in-1 outdoor waterproof antenna supporting 4× 5G/LTE and 1x active GNSS connections, with an integrated 5-meter cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.
	FANT-7IN1-RND-5M	Rugged 7-in-1 outdoor waterproof antenna supporting 4× 5G/LTE, 2× 2.4G/5G Wi-Fi, and 1x active GNSS connections, with an integrated 5-meter cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.
Rectangular Antennas	FANT-5IN1-RCT-5M	Rugged 5-in-1 outdoor IP69K and IK10 waterproof antenna supporting 4× 5G/LTE and 1x active GNSS connections, with an integrated 5-meter braided cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.
	FANT-7IN1-RCT-5M	Rugged 7-in-1 outdoor IP69K and IK10 waterproof antenna supporting 4× 5G/LTE, 2× 2.4G/5G Wi-Fi, and 1x active GNSS connections, with an integrated 5-meter braided cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.
	FANT-9IN1-RCT-5M	Rugged 9-in-1 outdoor IP67 and IK08 waterproof antenna supporting 8× 5G/LTE and 1x active GNSS connections, with an integrated 5-meter braided cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.
	FANT-11IN1-RCT-5M	Rugged 11-in-1 outdoor IP67 and IK08 waterproof antenna supporting 8× 5G/LTE, 2× 2.4G/5G Wi-Fi, and 1x active GNSS connections, with an integrated 5-meter braided cable with SMA male connectors. Compatible with FG, FGR, FEX, and FEV models with cellular capability.
Mounting Kit	FANT-MNT-2BRKT	Wall/Pole mounting bracket kit for fixed applications, providing secure mounting of Rugged/Outdoor antennas (such as FANT-3IN1-RND-5M) for the following devices: FEV, FEX, FG, and FGR with cellular capabilities. Each package contains a set of two brackets inside (two sets per pack).



Ruggedized External Power Supply Units



Highlights

Ruggedized power supply units in a ultra-slim convection cooling design with conformal coating to protect against dust and pollutants

Universal AC Input Voltage Range with full load operating temperature up to 60°C and cold start at -40°C

Safety Compliant CB scheme, TUV Bauart, UL/cUL, EAC, BSMI, CCC, UKCA and CE

Electrical Protection with overvoltage, overload, overcurrent, overtemperature, short circuit, shock and T4A / 250VAC internal fuse

Industrial Strength DIN Rail Rugged Power Supply

Designed to power FortiGate Rugged and FortiSwitch Rugged series in harsh environments. Certified with CB certification for worldwide use and industry-leading Safety Standards.

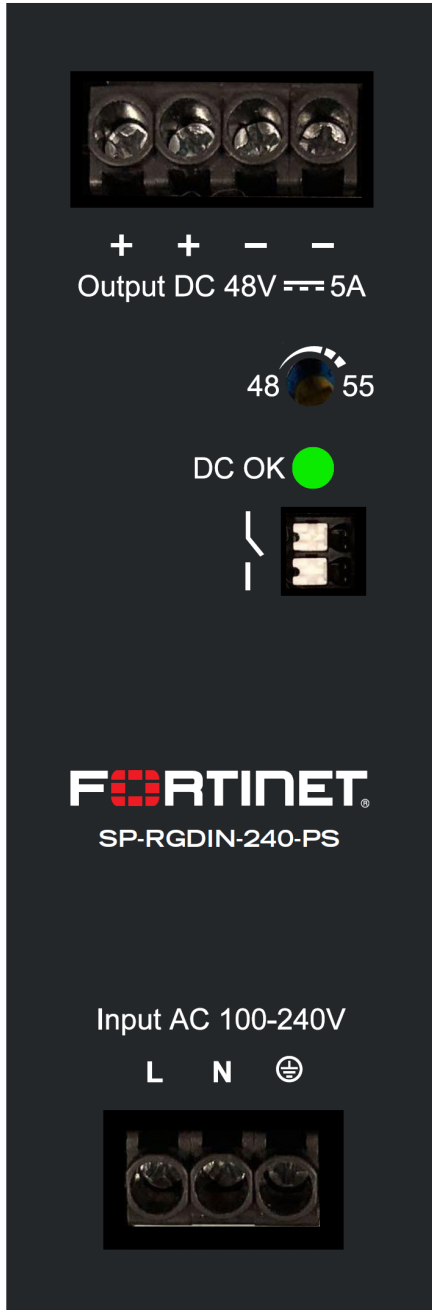


Model	Output	Input	Power	Current	Mounting Rail
SP-RGDIN-240-PS	240W/54V	90-264VAC/106V-300VDC	240W	5A	*DIN Rail
SP-RGDIN-480-PS	480W/54V	90-264VAC/106V-300VDC	480W	10A	*DIN Rail

* Standard TS35 DIN Rail in accordance with EN 60715.

Overview

SP-RGDIN-240-PS



Output Rating 48-55 Vdc, 0-5A, 240W Max, 18 to 12 AWG

Pin 1: Output 48VDC 5A 5A (V-)

Pin 2: Output 48VDC 5A 5A (V-)

Pin 3: Output 48VDC 5A 5A (V+)

Pin 4: Output 48VDC 5A 5A (V+)

DC Voltage Adjustment 48-55 Vdc

DC OK Relay Contact 22 to 16 AWG

Status	DC OK (Green LED)	DC OK Relay Contact
Normal Operation	ON	Closed
Overload (Hiccup Mode)	Intermittent	Open
Output Short Circuit	Intermittent	Open
Over Temperature	OFF	Open
No Input Power	OFF	Open

Input Rating 100-240 Vac, 18 to 12 AWG

Pin 1: L connect to Phase/Live/Line

Pin 2: N connect to Neutral

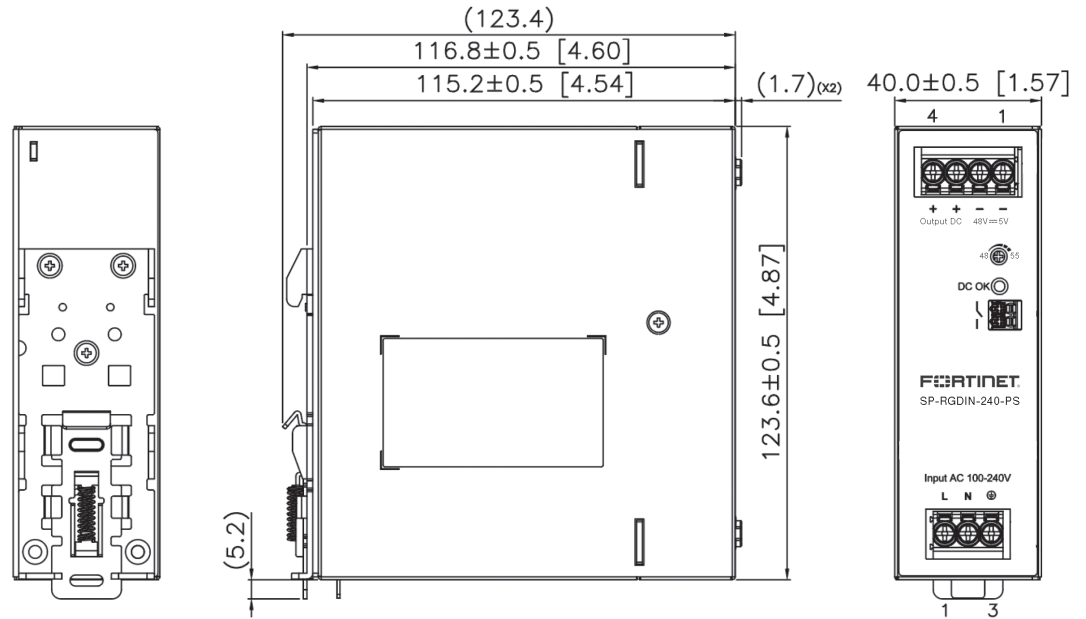
Pin 3: PE connect to Protective Earth (Ground)



Rugged Appliance

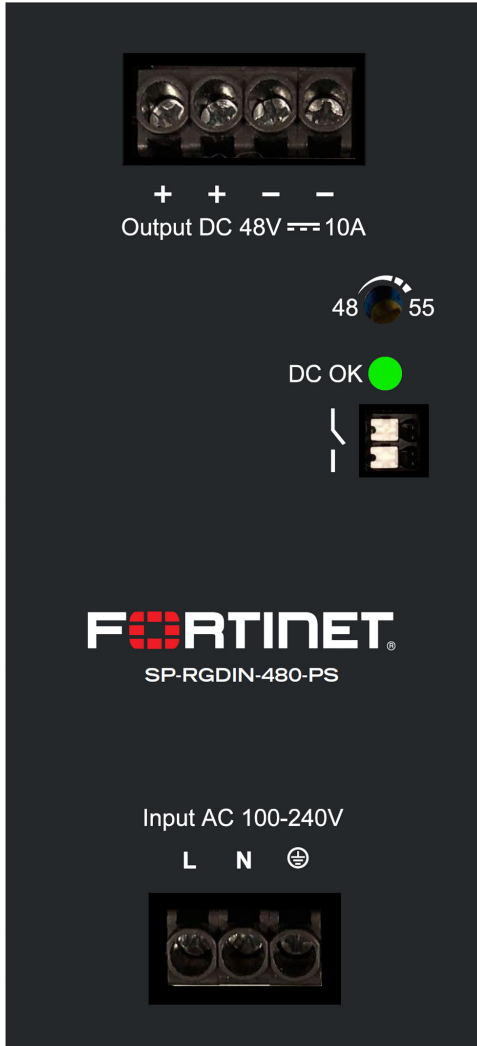
Dimensions

SP-RGDIN-240-PS



Overview

SP-RGDIN-480-PS



Output Rating 48-55 Vdc, 0-10A, 480W Max, 14 to 12 AWG

Pin 1: Output 48VDC 10A (V-)

Pin 2: Output 48VDC 10A (V-)

Pin 3: Output 48VDC 10A (V+)

Pin 4: Output 48VDC 10A (V+)

DC Voltage Adjustment 48-55 Vdc

DC OK Relay Contact 22 to 16 AWG

Status	DC OK (Green LED)	DC OK Relay Contact
Normal Operation	ON	Closed
Overload (Hiccup Mode)	Intermittent	Open
Output Short Circuit	Intermittent	Open
Over Temperature	OFF	Open
No Input Power	OFF	Open

Input Rating 100-240 Vac, 14 to 12 AWG

Pin 1: L connect to Phase/Live/Line

Pin 2: N connect to Neutral

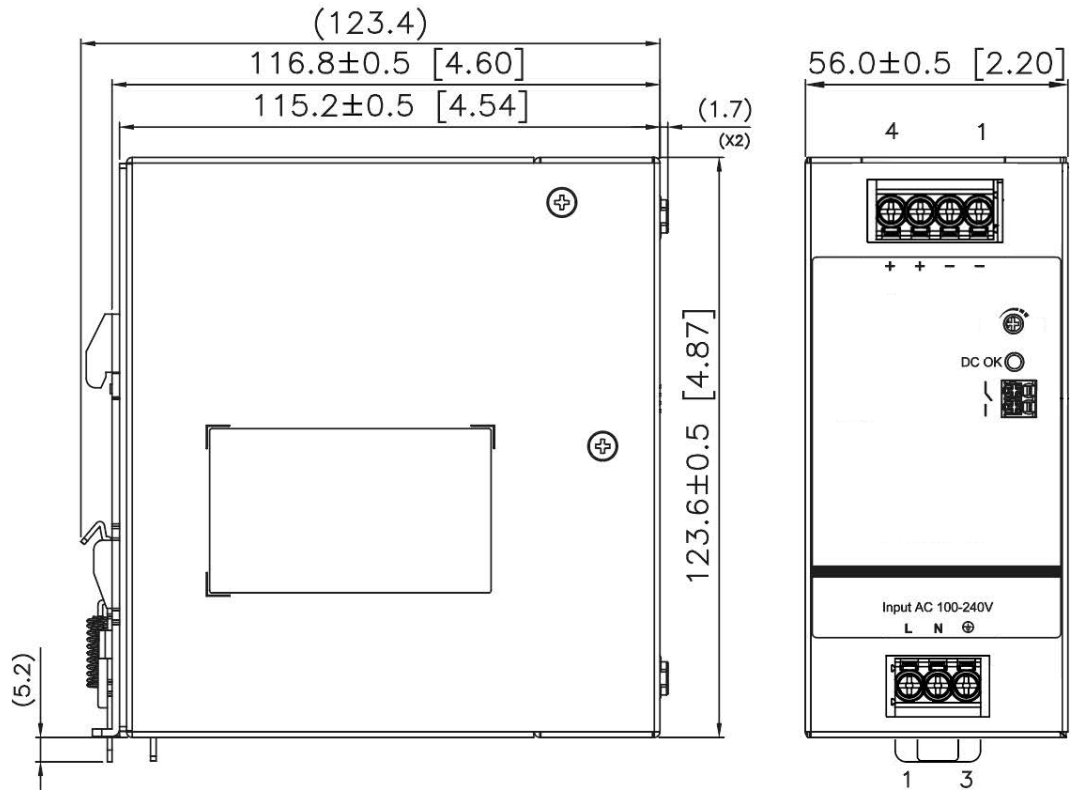
Pin 3: PE connect to Protective Earth (Ground)



Rugged Appliance

Dimensions

SP-RGDIN-480-PS



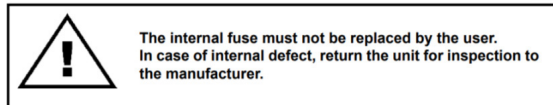
SP RGDIN Series Installation

DIN Rail

The PSU can be mounted on 35 mm DIN rails in accordance with EN 60715. The device should be installed with input terminal block at the bottom.

Safety Instructions

- Output stabilization will not exceed 5s when ambient temperature is at or above -30°C
- Operating the unit at full capacity above 60°C will cause the unit to overheat and activate Over Temperature Protection. The output will be disabled until the unit has cooled and input power has been cycled
- The maximum output power of the unit should be reduced for Surrounding Air Temperatures above > 60°C by 2.5%/°C according to Figure 1
- The maximum output power of the unit should be reduced for Input Voltages below 100 Vac according to Figure 2
- The device has an internal fuse. The unit is tested and approved with branch circuit protective device up to 20A. Power circuit-breaker characteristic B



- The device output is not designed for serial or parallel connection with a second power supply. Only one power supply should be connected to an individual load circuit
- The device should be installed in the vertical position with the input terminals oriented down
- The external enclosure where the unit will be installed shall meet the requirements for mechanical, electrical, and fire
- The mains power must be turned off before connecting or disconnecting wires to the terminals
- If the unit is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired
- Maintain 40 mm (1.57 inch) above, 20 mm (0.79 inch) below the device, and a lateral distance of 5 mm (0.2 inch) to other units to ensure sufficient cooling. The lateral distance may be reduced to 0mm if both units are operated below 50% capacity. The lateral distance must be at least 15 mm (0.6 inch) to an adjacent heat source operated at 230 Vac input
- Note that the enclosure of the device can become very hot depending on the surrounding air temperature and load of the power supply. Risk of burns!



- The main power must be turned off before connecting or disconnecting wires to the terminals
- DO NOT insert any objects into the unit
- Hazardous voltages may be present for up to five minutes after the input mains voltage is disconnected. Do not touch the unit during this time
- CAUTION: For use in a controlled environment
- The power supplies are built in units and must be installed in a cabinet or room (condensation free environment and indoor location) that is relatively free of conductive contaminants

SP RGDIN Series Installation

Airflow Distances

Refer to the Cautions and Warning on Product [Quick Start Guide](#) for more information.

SP-RGDIN-240-PS and SP-RGDIN-480-PS

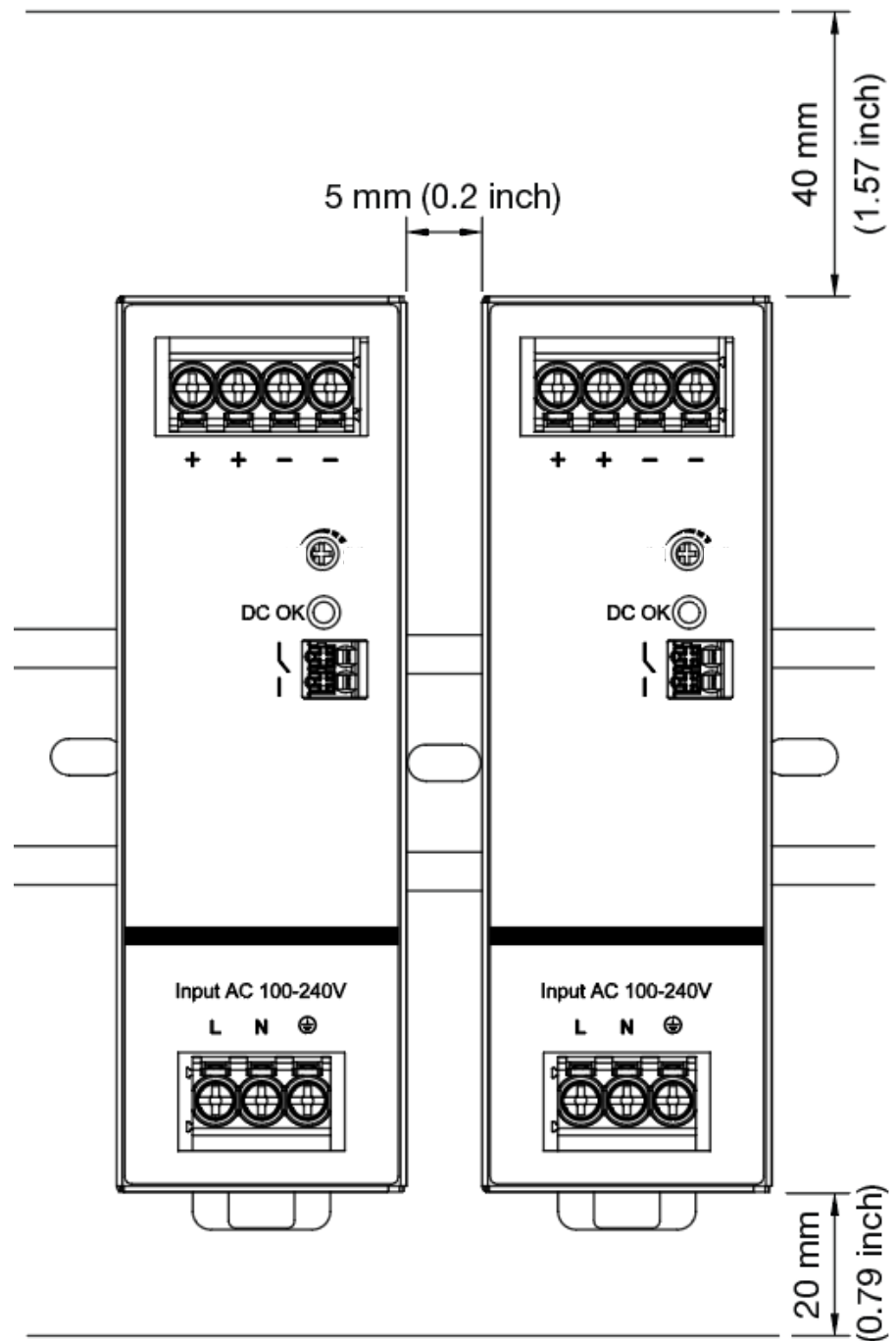
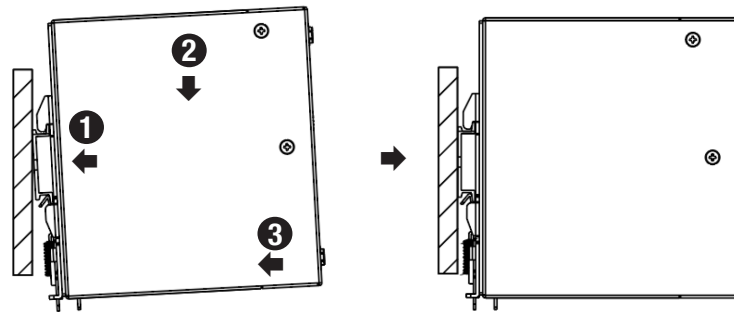


Figure 1

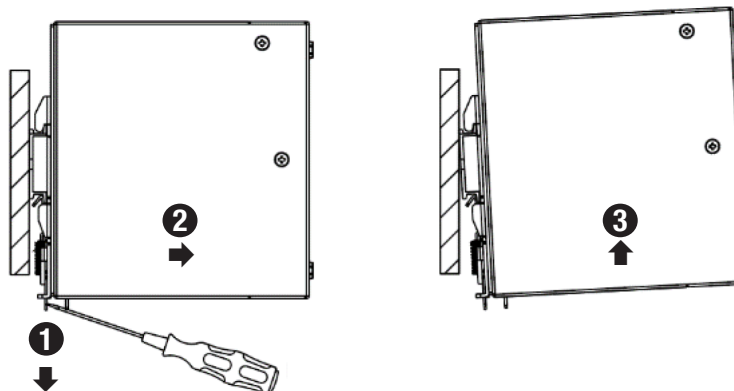
SP RGDIN Series Installation

Mounting



- 1** Tilt upwards and insert the PSU onto the DIN rail
- 2** Push downwards into the rail
- 3** Lock the device by pressing against the bottom front side

Dismounting



- 1** Slide down the latch with a screw driver
- 2** Pull the PSU from the bottom away from the DIN rail
- 3** Release the latch and pull out the PSU

Figure 2

Engineering Data

Output Load De-rating VS Surrounding Air Temperature

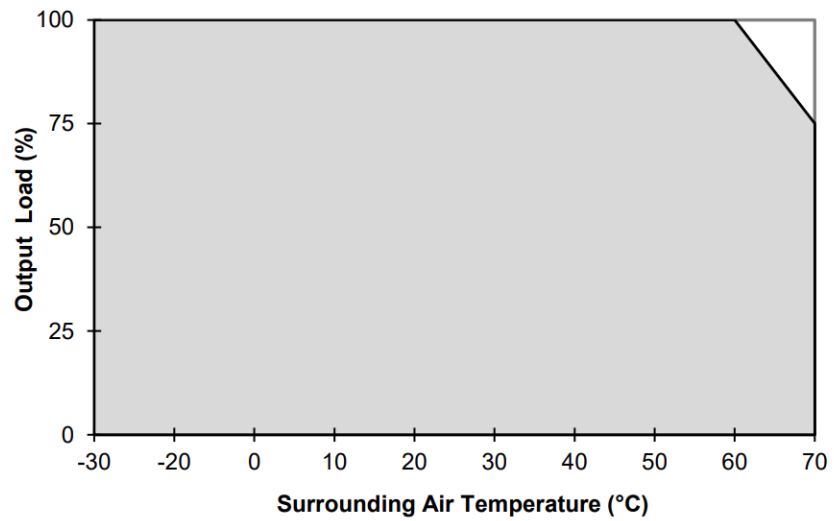


Fig. 1 De-rating for Vertical Mounting Orientation
> 60°C de-rate power by 2.5% / °C

Output Load De-rating VS Input Voltage

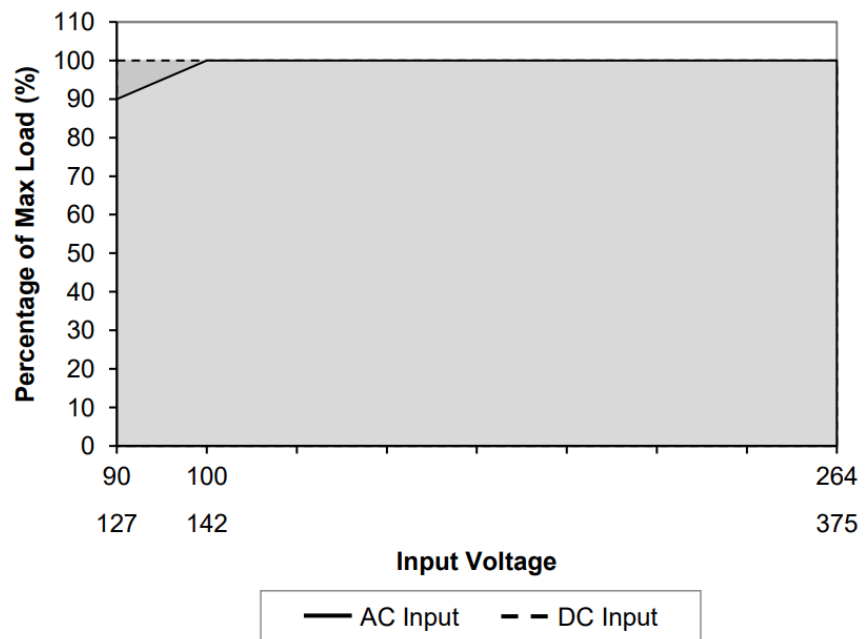
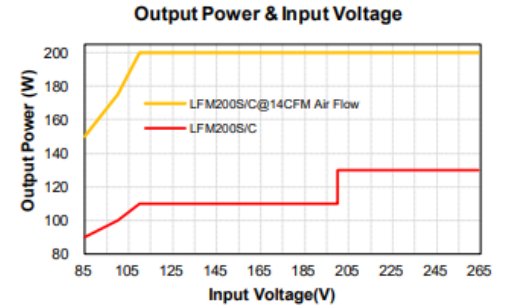
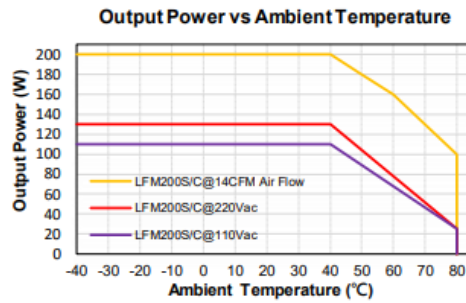


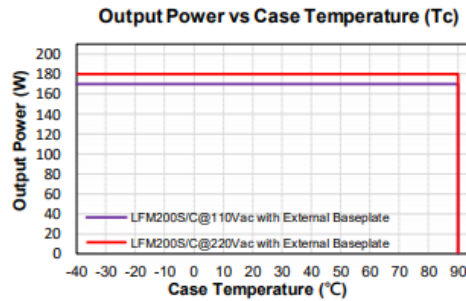
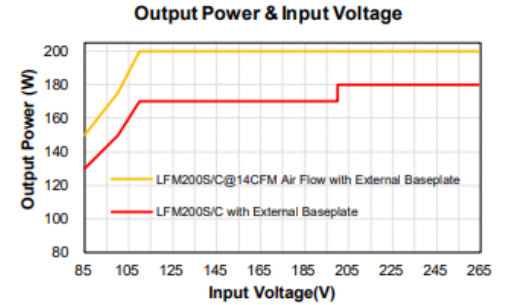
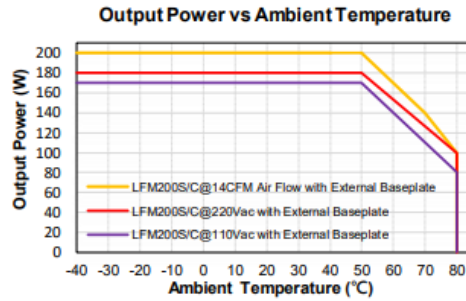
Fig. 2 De-rating for AC Input Voltage
< 100Vac de-rate power by 1% / Vac
No de-rating power for DC input

Engineering Data

Power Derating Curve



Conduction Convection with External Baseplate (17.78cmx17.78cmx0.2cm)



Specifications

	SP-RGDIN-240-PS	RGDIN-480-PS
Input Ratings / Characteristics		
AC Nominal Input Voltage	100-240 Vac	100-240 Vac
AC Input Voltage Range	90-264 Vac	90-264 Vac
AC Nominal Input Frequency	50-60Hz	50-60Hz
AC Input Frequency Range	47-63Hz	47-63Hz
DC Input Voltage Range ¹	127-375Vdc	127-375 Vdc
Input Current	2.5 A typ. @ 115 Vac, 1.3 A typ. @ 230 Vac	4.7 A typ. @ 115 Vac, 2.4 A typ. @ 230 Vac
Efficiency at 100% Load	94.0% typ. @ 230 Vac	95.0% typ. @ 230 Vac
Average Efficiency (25%, 50%, 75%, 100%)	91.5% typ. @ 115 Vac	91.5% typ. @ 115 Vac
No Load Power Consumption	< 0.8W typ. @ 115 Vac and 230 Vac	1 W typ. @ 115 Vac & 230 Vac
Max Inrush Current (Cold Start)	40 A typ. @ 230 Vac	40 A typ. @ 230 Vac
Power Factor at 100% Load	> 0.96 @ 115 Vac and > 0.93 @ 230 Vac	> 0.96 @ 115 Vac & > 0.93 @ 230 Vac
Leakage Current	< 0.5 mA @ 240 Vac	< 1.5 mA @ 240 Vac
Output Ratings / Characteristics		
Nominal Output Voltage	48Vdc	48 Vdc
Factory Set Point Tolerance	48Vdc $\pm$ 1%	48 Vdc $\pm$ 1%
Output Voltage Adjustment Range	48-55Vdc	48-55 Vdc
Output Current	0-5.0A	0-10.0 A
Output Power	240W Max.	480 W max
Line Regulation	$\pm$ 0.5% @ 115 Vac and 230 Vac	$\pm$ 0.5% @ 115 Vac & 230 Vac
Load Regulation	$\pm$ 0.5%	$\pm$ 0.5%
PARD ² (20MHz)	< 150mVpp @ 0°C to 70°C	150 mVpp typ. @ 0°C to +70°C
	< 360mVpp typ. @ -30°C to 0°C	450 mVpp typ. @ -30°C to 0°C
Rise Time	30ms typ. @ 115Vac and 230Vac	30 ms typ. @ 115 Vac & 230Vac
Start-up Time	800ms typ. @ 115Vac and 230Vac	800 ms typ. @ 115 Vac & 230 Vac
Hold-up Time	30ms typ. @ 115Vac and 230Vac (100% load)	25 ms typ. @ 115 Vac & 230 Vac (100% load)
Dynamic Response (Overshoot and Undershoot O/P Voltage)	$\pm$ 10% @ 115 and 230Vac input, 10-100% load (Slew Rate: 2.5A/ μ S, 50% duty cycle @ 5Hz and 10KHz)	$\pm$ 10% @ 115 Vac & 230 Vac input, 10-100% load (Slew Rate: 2.5 A/ μ S, 50% duty cycle @ 5 Hz & 10 kHz)
Start-up with Capacitive Loads	5000 μ F Max	5000 μ F Max
Functional (DC OK Relay Contact)	30 V / 1 A The relay contact are normally "ON" (closed) when the output (Vout) is greater than 90% typ. of its rated value.	30 V / 1 A The relay contact are normally "ON" (closed) when the output (Vout) is greater than 90% typ. of its rated value.

1 Power Supply can operate at DC Input voltage, please connect +pole to L, -pole to N and PE terminal to an earth wire or to the machine ground

2 PARD is measured with an AC coupling mode, and in parallel to end terminal with 0.1 μ F ceramic capacitor and 47 μ F electrolytic capacitor. PSU need to burn in > 5 minutes when AMB $\leq$ 0°C



Specifications

	SP-RGDIN-240-PS	RGDIN-480-PS
Mechanical		
Case Chassis / Cover	Metal	Metal
Dimensions (H x W x D)	4.87 × 1.57 × 4.60 in. 123.6 × 40 × 116.8 mm	4.87 × 2.20 × 4.60 inch 123.6 × 56 × 116.8 mm
Unit Weight	0.64 kg (1.41 lb)	0.88 kg (1.94 lb)
Indicator	Green LED (DC OK)	Green LED (DC OK)
Cooling System	Convection	Convection
Terminal ³		
Input	3 Pins (Rated 600 V / 30 A)	3 Pins (Rated 300 V / 30 A)
Output	4 Pins (Rated 600 V / 30 A)	4 Pins (Rated 300 V / 30 A)
DC OK	2 Pins (Rated 300 V / 6 A)	2 Pins (Rated 300 V / 6 A)
Wire		
Input	AWG 18-12	AWG 14-12 (Current rating can refer to "AWG Wire Table")
Output	AWG 18-12	AWG 14-12 (Current rating can refer to "AWG Wire Table")
DC OK	AWG 22-16	AWG 22-16 (Current rating can refer to "AWG Wire Table")
Mounting Rail		Standard TS35 DIN Rail in accordance with EN 60715
Noise (1 meter from power supply)		Sound Pressure Level (SPL) < 25 dBA
Environment		
Surrounding Air		
Operating	-30°C to +70°C (-40°C Cold Start)	-30°C to +70°C (-40°C Cold Start)
Temperature		
Storage	-40°C to +85°C	-40°C to +85°C
Power De-rating		
Temperature	> 60°C de-rate power by 2.5 % / °C	> 60°C de-rate power by 2.5 % / °C
Input Voltage	< 100 Vac de-rate power by 1% / Vac	< 100Vac de-rate power by 1% / Vac
Operating Humidity	5 to 90% RH (Non-Condensing)	5 to 90% RH (Non-Condensing)
Operating Altitude	0 to 5000 Meters (0 to 16400 ft)	0 to 5,000 Meters (16,400 ft.)
Shock Test		
Non-Operating	IEC 60068-2-27, Half Sine Wave: 50G for a duration of 11ms, Three shocks for each axis X, Y, Z	IEC 60068-2-27, Half Sine Wave: 50 G for duration of 11 ms; three times per direction
Operating	IEC60068-2-27, Half Sine Wave: 10G for a duration of 11ms; 100 shocks for each axis X, Y, Z	
Vibration		
Non-Operating	IEC 60068-2-64, Random: 5Hz to 500Hz, 2.09 Grms 20min for each axis X, Y, Z	
Operating	IEC 60068-2-6, Sine Wave: 10Hz to 500Hz, 2G, 20min for each axis X, Y, Z	IEC 60068-2-6, Sine Wave: 10 Hz to 500 Hz; 4 G peak; 60 min per axis for all X, Y, Z directions
Over Voltage Category	II (Compliance to EN 62477-1 OVC III with 2000 meters altitude)	II (Compliance to EN 62477-1 OVC III with 2000 meters altitude)
Pollution Degree	2	2

³ The torque at the screw terminal connectors shall not exceed 5.2 N-m (4.5 in-lb).



Specifications

	SP-RGDIN-240-PS	RGDIN-480-PS
Protections		
Overvoltage	< 68V, SELV Output, Latch Mode	<68.0 V, SELV Output, Latch Mode
Overload / Overcurrent	105 - 150% of rated load current, Auto-recovery. Continuous current limit Mode5 (Vo > 80%)	105 - 150% of rated load current, Auto-recovery Continuous current limit Mode*5 (Vo > 80%)
Over Temperature	Latch Mode	Latch Mode
Short Circuit	Hiccup Mode, Non-Latching (Auto-Recovery when the fault is removed)	Hiccup Mode, Non-Latching (Auto-Recovery when the fault is removed)
Internal Fust at L pin		T10 A / 250 V
Protection Against Shock	Class I with PE ⁶ connection	Class I with PE ⁶ connection
Reliability		
MTBF	> 700,000 hrs as per Telcordia SR-332. I/P: 115 and 230Vac, O/P: 100% Load, Ta: 25°C	> 700,000 hrs I/P: 115 Vac & 230 Vac, O/P: 100% load, Ta: 25°C
Expected Cap Life Time	10 years (230Vac, 50% load @ 50°C)	10 years (230 Vac, 50% load @ 50°C)
Safety Standards / Directives		
Safety Entry Low	SELV	
ITE Safety		
CB scheme	IEC 62368-1 2nd and 3rd Ed, IEC 61010-1/-2-201	IEC 62368-1, IEC 60950-1, IEC 61010-1/-2-201
TUV Bauart	EN/BS EN 62368-1 2nd and 3rd Ed, EN/BS EN 61010-1/-2-201	EN 62368-1, EN/BS 61010-1/-2-201
UL/cUL	UL 62368-1, UL 61010-1/-2-201	UL 62368-1, UL 61010-1/-2-201
CCC	GB 4943.1	GB4943.1
EAC		TP TC 004/2011
BSMI	CNS 15598-1	CNS14336-1
RCM	AS/NZS 62368-1	
KCC	KC 62368-1	
CE		In conformance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU
ITE	In conformance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU	
UKCA		In conformance with Electrical Equipment (Safety) Regulations 2016 and Electromagnetic Compatibility Regulations 2016
ITE	In conformance with Electromagnetic Compatibility Regulations 2016 and Electrical Equipment (Safety) Regulations 2016	
Safety		
EMC Emission		
Conducted Disturbance		
Radiated Disturbance		
Harmonic Current Emissions		
Voltage Fluctuations and Flicker		
EMC Immunity		
Electrostatic Discharge (ESD)		
Radio Frequency, Continuous Radiated Disturbance		
Electrical Fast Transient (EFT)		
Surge		
Conducted Disturbances, Induced by RF Fields		
Power Frequency Magnetic Field		
Voltage Dips		
Voltage Interruptions		
Galvanic Isolation		
Input to Output	4.0kVac	4.0 kVac
Input to Ground	2.0kVac	2.0 kVac
Output to Ground	1.5kVac	1.5 kVac
Output to DC OK	500 Vac	500 Vac



Specifications

	SP-RGDIN-240-PS	RGDIN-480-PS
EMC		
Emissions (CE & RE)	CISPR 32, EN/BS EN 55032, EN 61000-6-4 , EN/ BS EN 61204-3 KS C 9832 AS/NZS CISPR32 Compliance to FCC Title 47, EN 61000-6-3: Class B	CISPR 32, EN/BS 55032, EN/BS 61000-6-4, AS/NZS CISPR32, EN/BS EN 61204-3, KS C 9832 Compliance to FCC Title 47, EN/BS 61000-6-3: Class B
Component Power Supply for General Use		EN/BS EN 61204-3
Immunity	EN/BS EN 55035, KS C 9835, EN/BS EN 61000-6-2 Compliance to EN 61000-6-1	EN 55035, KS C 9835, EN/BS EN 61000-6-2 Compliance to EN/BS EN 61000-6-1
Electrostatic Discharge		
IEC 61000-4-2	Level 4 Criteria A ⁷ Air Discharge: 15kV Contact Discharge: 8kV	Level 4 Criteria A ¹⁾ Air Discharge: 15k V Contact Discharge: 8 kV
Radiated Field		
IEC 61000-4-3	Level 3 Criteria A ⁷ 80MHz-1GHz, 10V/M with 1kHz tone / 80% modulation	Criteria A ¹⁾ 80 MHz – 1 GHz, 10 V/M, 80% Modulation (1 kHz) 1.4 GHz – 2 GHz, 3 V/M, 80% Modulation (1 kHz) 2 GHz – 2.7 GHz, 1 V/M, 80% Modulation (1 kHz)
Electrical Fast Transient / Burst		
IEC 61000-4-4	Level 3 Criteria A ⁷ 2kV	Level 3 Criteria A ¹⁾ 2 kV
Surge		
IEC 61000-4-5	Level 4 Criteria A ⁷ Common Mode ¹⁰ : 4kV Differential Mode ¹¹ : 2kV	Level 4 Criteria A ¹⁾ Common Mode ⁴⁾ : 4 kV Differential Mode ⁵⁾ : 2 kV
Conducted		
IEC 61000-4-6	Level 3 Criteria A ⁷ 150kHz-80MHz, 10Vrms	Level 3 Criteria A ¹⁾ 150 kHz – 80 MHz, 10 Vrms
Power Frequency Magnetic Fields		
IEC 61000-4-8	Level 4 Criteria A ⁷ 30A/Meter	Level 4 Criteria A ¹⁾ 30 A/m
Voltage Dips and Interruptions		
IEC 61000-4-11	0% residual; 1 cycle, Criteria B ⁸ 40% residual; 10 cycle, Criteria C ⁹ 70% residual; 25 cycle, Criteria C ⁹	0% residual; 1 cycle, Criteria B ²⁾ 40% residual; 10 cycle, Criteria C ³⁾ 70% residual; 25 cycle, Criteria C ³⁾
Harmonic Current Emission		IEC/EN/BS EN 61000-3-2, Class A & Class D
IEC/EN 61000-3-2	Class A & D	
Voltage Fluctuation and Flicker		IEC/EN/BS EN 61000-3-3
IEC/EN 61000-3-3	✓	
Voltage Sag Immunity		
SEMI F47-0706		
80% of 200 Vac	160 Vac, 1000 ms, A ⁷	160 Vac, 1000 ms, A ⁷
70% of 200 Vac	140 Vac, 500 ms, A ⁷	140 Vac, 500 ms, A ⁷
50% of 200 Vac	100 Vac, 200 ms, A ⁷	100 Vac, 200 ms, A ⁷

⁷ Criteria A: Normal performance within the specification limits

⁸ Criteria B: Output out of regulation, or shuts down during test. Automatically restored to normal operation after test.

⁹ Criteria C: Output out of regulation, shuts down during test (Need to recycle AC power cord to normal operation after test)

¹⁰ Asymmetrical: Common mode (Line to earth)

¹¹ Symmetrical: Differential mode (Line to line)

Ordering Information

Product	SKU	Description
DIN Rail Rugged Power Supply Unit	SP-RGDIN-240-PS	Pack of 2 units - DIN Rail Rugged PSU 90-264VAC/106V-300VDC Input, 240W/54V Nominal Output, -30C to 70C
DIN Rail Rugged Power Supply Unit	SP-RGDIN-480-PS	Pack of 2 units - DIN Rail Rugged PSU 90-264VAC/106V-300VDC Input, 480W/54V Nominal Output, -30C to 70C

OT Ordering Guide

Fortinet's OT ordering guide offers high-level mapping of solutions aligned with the Purdue Model based deployment architecture, allowing end-users and partners to select suitable solutions for their OT cybersecurity requirements. It contains a non-exhaustive list of the best-selling Fortinet products suited for OT cybersecurity use-cases and requirements.

Click [here](#) to access the ordering guide.

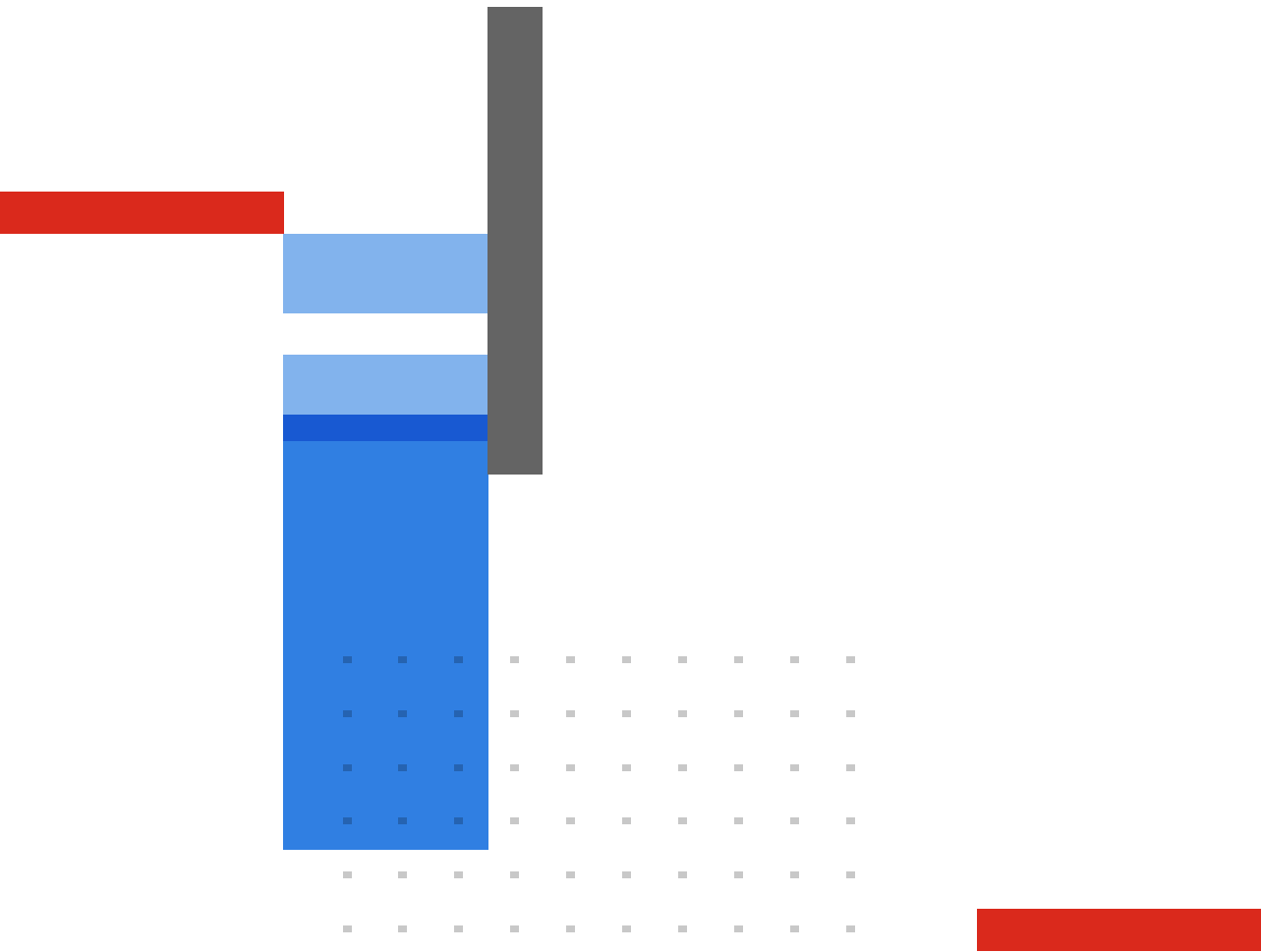
OT Security Solutions Hub

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