

## A multi purpose shark fin antenna for LTE450 UHF, GNSS, GPS, 2G/3G/4G and dual WiFi 2.4 + 5.0 GHz

### DESCRIPTION

- Can be configured as 3in1, 4in1, and 5in1
- In-built UHF antenna available.
- In-built 4G antenna (698 - 960 MHz and 1710 - 2700 MHz).
- GNSS antenna for GPS L1, Glonass, Beidou and Galileo.
- Model available with optional antenna for GPS L1.
- Dual WiFi 2.4 and 5.0 GHz.
- Supports external whip.
- No duplexer needed.
- The ProFin provides antennas for multiple technologies.
- The ProFin covers UHF, GNSS, GPS L1, 2G/3G/4G cellular bands, dual WiFi 2.4 and 5.0 GHz and an optional whip.
- The ProFin can support antenna whip in the range 66 - 520 MHz.
- All ProFin configurations are prepared for external whip.
- Easily removable whip for car wash.
- Full hemispherical coverage for the GNSS and GPS.
- Built-in high gain, low noise amplifier.
- Preselector filter ensures high GNSS/GPS amplifier blocking level for out-of-band signals.
- Right-Hand Circular Polarization (RHCP).
- 3 - 15 V DC for GNSS/GPS supply.
- DC supply via GNSS or GPS RF-connector.
- ECE R118.02 approved cable.



SHOWN WITH OPTIONAL EXTERNAL WHIP.



### SPECIFICATIONS

Electrical	
Model	ProFin
Frequency	UHF : 380 - 470 MHz (in three models) WIFI : 2300 - 2500 MHz, 5000 - 6000 MHz 4G : 698 - 960 MHz, 1710 - 2700 MHz
Antenna Type	Mobile Shark Fin Style Antenna
Max. Input Power	10 W for built-in UHF 25 W for 4G Antenna 100 W for whip
Polarisation	Vertical
Pattern Type	Omnidirectional
Impedance	50 Ω
VSWR	< 2.0:1 (< 2.5:1 for 698 - 960 MHz)
Gain (EIA RS-329-1)	Varies over frequency (see gain table and plots)
Mechanical	
Compliance	ECE R118.02 approved cable
Antenna Colour	Black (RAL 9005)
Connection(s)	SMA(m) (all antennas)
Materials	Reinforced PA, Zamak 5
Installation Torque	4 ± 0.5 Nm
Dimensions	Approx. 76 x 142.5 mm / 2.99 x 5.61 in.
Max. Roof Thickness	3 mm / 0.12 in.
Whip Connection	M5
Height	Approx. 66 mm / 2.6 in.
Weight	Approx. 0.26 kg / 0.57 lb.
Mounting	18.5 mm / 0.8 in. dia. hole Max roof curvature : 2.0 mm / 0.08 in. (on 142 mm)
Environmental	
Operating temperature range	-50 °C to +75 °C
Ingress Protection	IP67

GPS Antenna	
Noise Figure (GPS Amplifier)	< 1.5 dB (typ. 1.1 dB)
Gain (GPS Amplifier)	22 dB ± 2 dB
Frequency (GPS)	1575 MHz
Power Supply (GPS)	3 - 15 V DC
Current Consumption (GPS Amplifier)	< 12 mA
Impedance (GPS)	50 Ω
GNSS Antenna	
Noise Figure (GNSS Amplifier)	1.6 dB (typ.)
Cross Polar Discrimination (GNSS)	> 10 dB (typ.)
Gain (GNSS Amplifier)	26 dB (typ.)
Selectivity (GNSS Amplifier)	> 25 dB down @ 0 - 1540 MHz > 27 dB down @ 1625 - 3000 MHz
VSWR (GNSS Amplifier)	< 2.0:1
Frequency (GNSS)	1559 - 1609 MHz (GPS L1, Glonass, Beidou and Galileo)
Power Supply (GNSS)	3 - 15 V DC
Current Consumption (GNSS Amplifier)	Approx. 20 mA
Polarisation (GNSS)	RH Circular
Impedance (GNSS)	50 Ω

ORDERING

Model	Product No.	Description
ProFin G1	132000230	4G, WIFI,GNSS
ProFin G2	132000231	4G, WIFI,GNSS,GPS
ProFin G1-395	132000232	4G, WIFI,GNSS,UHF 380 - 410 MHz
ProFin G1-430	132000233	4G, WIFI,GNSS,UHF 410 - 450 MHz
ProFin G1-450	132000234	4G, WIFI,GNSS,UHF 430 - 470 MHz
ProFin G2-395	132000236	4G, WIFI,GNSS,GPS,UHF 380 - 410 MHz
ProFin G2-430	132000237	4G, WIFI,GNSS,GPS,UHF 410 - 450 MHz
ProFin G2-450	132000238	4G, WIFI,GNSS,GPS,UHF 430 - 470 MHz
<b>Accessories - Whips</b>		
MP-SS-S/FM whip	132000244	Stainless steel whip with shock spring.
MP-SS-S/150 whip	132000245	Stainless steel whip with shock spring. (adjustable by customer)
MP_SS_S/DAB whip	132000260	Stainless steel whip with shock spring.
MP-B/450/405 MHz whip	132000247	Flexible whip (0 dB acc. to TIA-329.2-C)
MP-B/450/445 MHz whip	132000248	Flexible whip (0 dB acc. to TIA-329.2-C)
MP-SS/450-4/395 MHz whip	132000249	Stainless steel collinear whip (4 dB acc. to TIA-329.2-C)
MP-SS/450-4/425 MHz whip	132000250	Stainless steel collinear whip (4 dB acc. to TIA-329.2-C)
MP-SS/450-4/455 MHz whip	132000251	Stainless steel collinear whip (4 dB acc. to TIA-329.2-C)
MP-G-S/150/450/.../...whip	132000224	Flexible whip with shock spring (factory adjusted)
MP-G-S/450/FM/395 whip	132000256	Flexible whip with shock spring (factory adjusted)
<b>Accessories - Cables</b>		
5m ProFin Cable Kit	132000243	"6 pcs. RG174 cables in one cable bundle. Provides ease of installation"
3m SMA(f)-BNC(m)	130002416	RG 58 A/U-L cable
4m SMA(f)-BNC(m)	130002417	RG 58 A/U-L cable
5m SMA(f)-BNC(m)	130002418	RG 58 A/U-L cable
3m SMA(f)-TNC(m)	130002421	RG 58 A/U-L cable
4m SMA(f)-TNC(m)	130002422	RG 58 A/U-L cable
5m SMA(f)-TNC(m)	130002423	RG 58 A/U-L cable
3m SMA(f)-SMA(m)	130002426	RG 58 A/U-L cable
4m SMA(f)-SMA(m)	130002427	RG 58 A/U-L cable
5m SMA(f)-SMA(m)	130002428	RG 58 A/U-L cable
<b>Accessories - Adaptor</b>		
SMA(f)-N(m)	130002429	
SMA(f)-BNC(m)	130002430	
SMA(f)-TNC(m)	130002431	
SMA(f)-SMB(m)	130002432	
SMA(f)-QMA(m)	130002522	

NOMENCLATURE

Use the guide below to configure the ProFin you would like to order.

Model Name	No. of GNSS	Internal UHF antenna	Cable length(m)	Connectors on LTE	Connectors on WIFI	Connectors on GNSS	Connectors on internal UHF antenna	Connectors on external whip antenna
ProFin	G1 G2	-Blank when no internal UHF -395 -430 -450	Blank (approx. 0.3 m / 1 ft cable length) -P5 (5 m / 16.4 ft cable length)	-S (SMA-M) -FAKRA (on request)	/S (SMA-M) /RP-S (Reverse Polarity SMA-M) /FAKRA (on request)	/S (SMA-M) /FAKRA (on request)	/S (SMA-M) /FAKRA (on request)	/S (SMA-M) /FAKRA (on request)
<b>Naming Example</b>								
ProFin	G1	-395	-P5	-S (SMA-M)	/RP-S (Reverse Polarity SMA-M)	/S (SMA-M)	/S (SMA-M)	/S (SMA-M)

Examples

ProFin G1-395-P5-S/RP-S/S

ProFin G1-S/S/S/S

BY SELECTING THE PROPER PROFIN MODEL, FOLLOWING RECOMMENDATIONS MUST BE CONSIDERED:

- We recommend not to use an external whip on ProFin models with in-built UHF antenna, since performance of the UHF antenna will be degraded.
- If an external whip is used on a ProFin model with in-built UHF antenna, the tuning frequency/operating frequency of the external whip must be minimum 50 MHz apart from the center frequency of the in-built UHF antenna.  
Example: For ProFin G1-395 / ProFin G2-395, the tuning frequency/operating frequency of the external whip must be ≤ 345 MHz or ≥ 445 MHz.
- Max. recommended frequency of an external whip is 520 MHz.
- If more than 10 W is needed in the UHF band, we recommend using an external whip on a ProFin model without in-built UHF antenna or on a ProFin Plus model.

GAIN TABLE FOR IN-BUILT ANTENNAS

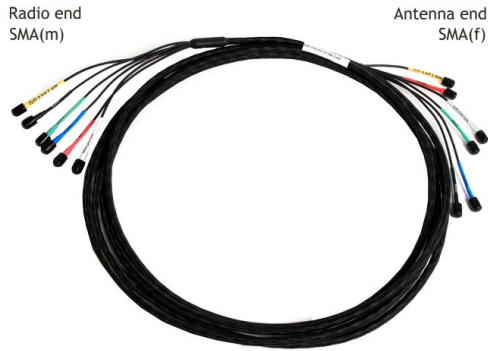
TYPE	FREQUENCY (MHz)	PEAK GAIN (dBi)	AVERAGE GAIN H-PLANE (dBi)	AVERAGE GAIN H-PLANE (dBq) *
UHF element	400	-3.0	-7.0	-6.5
	700	4.0	-1.5	-1.0
	900	4.0	-1.0	-0.5
	1800	5.0	-1.0	0.0
	2500	9.0	1.0	1.5
WIFI element	2400	5.0	-2.0	-2.0
	5500	6.0	-2.0	-3.0

\* According to TIA-329.2-C

WHIP MODELS



ACCESSORIES - CABLES



5 m ProFin Cable Kit.  
6 pcs. RG 174 cables in one cable bundle (ø9 mm).  
Provides ease of installation.

ORDERING DESIGNATIONS - WHIP MATRIX

TYPE	DESCRIPTION	FM 88-108 MHz	VHF 144..240 MHz	UHF 380..470 MHz	UHF (Gain) 380..470 MHz
MP-SS-S/FM whip	Stainless steel whip with shock spring.	◆			
MP-SS-S/150 whip	Stainless steel whip with shock spring.	◆	◆		
MP-SS-S/DAB whip	Stainless steel whip with shock spring.	◆	◆		
MP-B/450/...whip	Flexible whip (0 dB acc. to TIA-329.2-C)			◆	
MP-SS/450-4/...whip	Stainless steel collinear whip (4 dB acc. to TIA-329.2-C)				◆
MP-G-S/150/450/.../...whip	Flexible whip with shock spring (factory adjusted)		◆	◆	
MP-G-S/450/FM/... whip	Flexible whip with shock spring (factory adjusted)	◆		◆	

For more information we refer to the corresponding whip datasheets. The in-built antennas can be used without an external ground-plane, but with degraded electrical performance.

TYPICAL VSWR CURVES



\* VSWR measured with no whip and 5 m (197 in.) of RG58 cable on a 1000 x 1000 mm (39 x 39 in.) ground plane.  
 \*\* VSWR measured with collinear whip and 5 m (197 in.) of RG58 cable on a 1000 x 1000 mm (39 x 39 in.) ground plane.

RADIATION PATTERNS

