

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

### DESCRIPTION

- 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 diplexer 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.

### 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



SHOWN WITH OPTIONAL EXTERNAL WHIP.



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

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

## 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	

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  $\leq 345$  MHz or  $\geq 445$  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

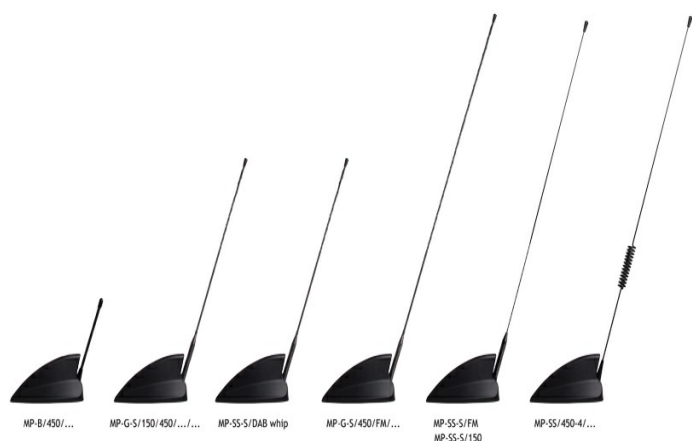
TYPE	FREQUENCY (MHz)	PEAK GAIN (dBi)	AVERAGE GAIN H-PLANE (dBi)	AVERAGE GAIN H-PLANE (dBq) *
UHF element	400	-3.0	-7.0	-6.5
2G/3G/4G element	700	4.0	-1.5	-1.0
	900	4.0	-1.0	-0.5
	1800	5.0	-1.0	0.0
	2500	9.0	1.0	1.5
WIFI element	2400	5.0	-2.0	-2.0
	5500	6.0	-2.0	-3.0

\* According to TIA-329.2-C

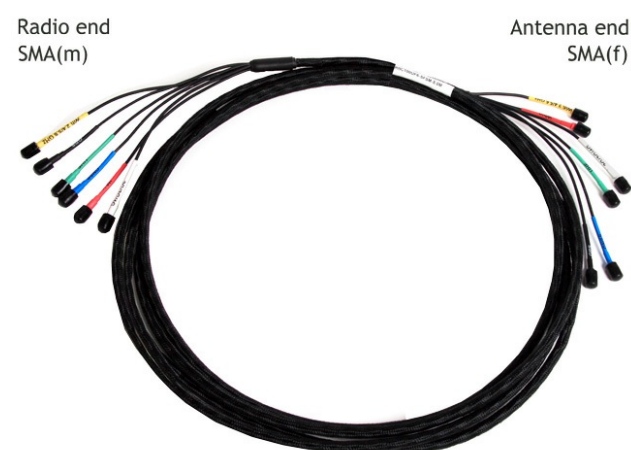
## ORDERING DESIGNATIONS - MOUNT MATRIX

TYPE	PRODUCT NO.	DESCRIPTION	2G/3G/4G 698 - 960 1710 - 2700 MHz	WIFI 2300 - 2500 5000 - 6000 MHz	GNSS	GPS L1	IN-BUILT ANTENNA		
							380 - 410 MHz	410 - 450 MHz	430 - 470 MHz
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	◆	◆	◆	◆			◆

## WHIP MODELS



## ACCESSORIES - CABLES



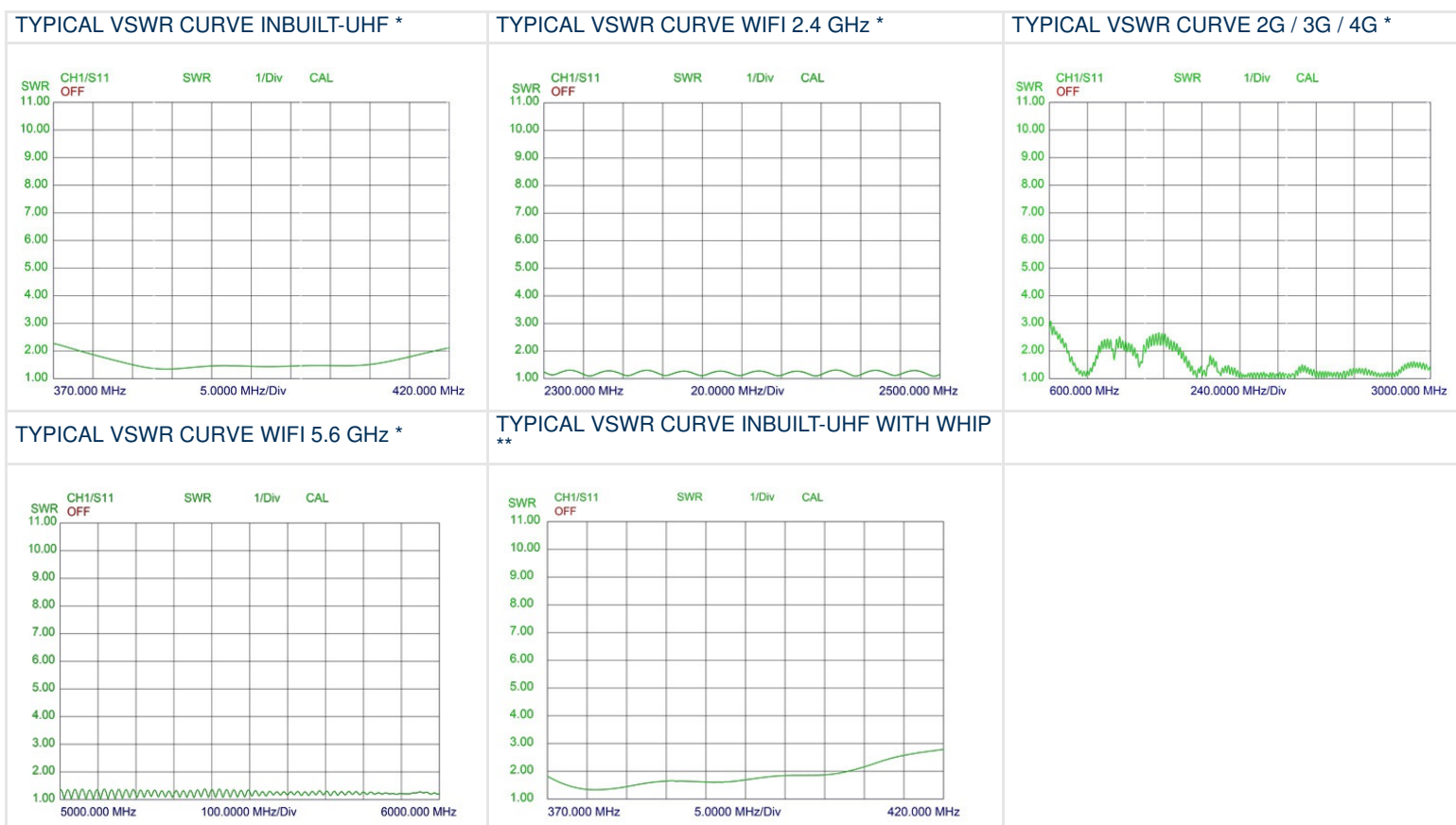
5 m ProFin Cable Kit.  
6 pcs. RG 174 cables in one cable bundle (ø9 mm).  
Provides ease of installation.

## 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.

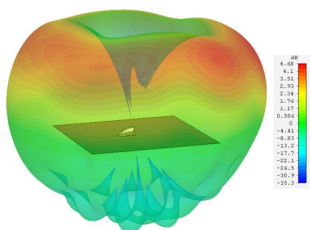
## EU AND UK DECLARATION OF CONFORMITY

Hereby Amphenol Procom declare that the product type ProFin is in compliance with EU Directive 2014/53/EU and the UK Radio Equipment Regulations 2017 (S.I. 2017 No. 1206).  
The full text of the Declaration of Conformity is available at

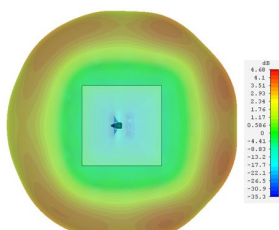
<https://amphenolprocom.com/images/shop/catalog/pdf-for-catalogues/Declaration-of-Conformity-ProFin.pdf>

## RADIATION PATTERNS

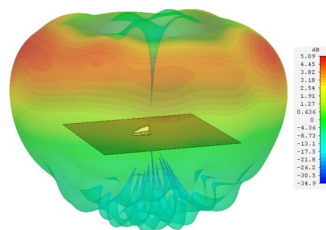
4G-element 700 MHz, side view



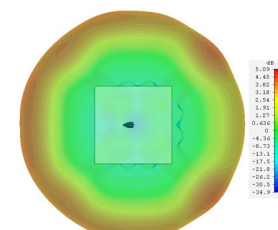
4G-element 700 MHz, top view



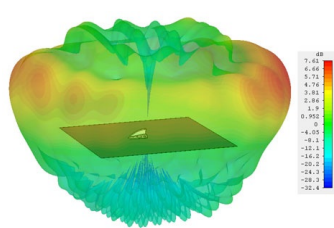
4G-element 900 MHz, side view



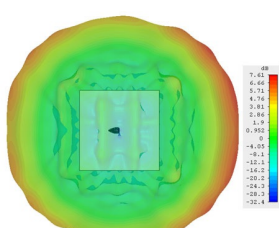
4G-element 900 MHz, top view



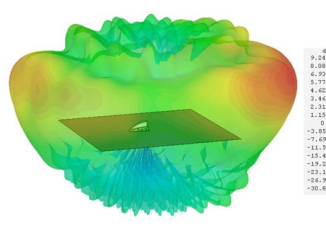
4G-element 1800 MHz, side view



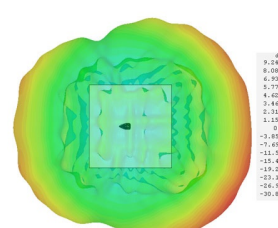
4G-element 1800 MHz, top view



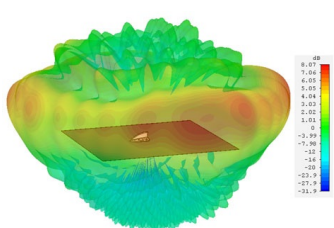
4G-element 2100 MHz, side view



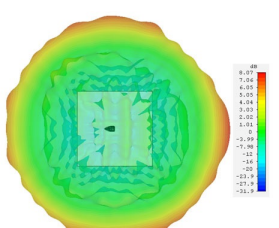
4G-element 2100 MHz, top view



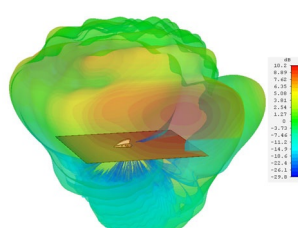
4G-element 2600 MHz, side view



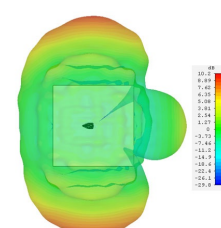
4G-element 2600 MHz, top view



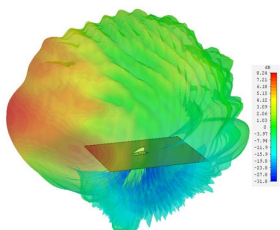
WIFI-element 2400 MHz, side view



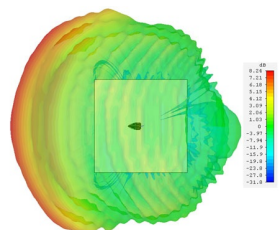
WIFI-element 2400 MHz, top view



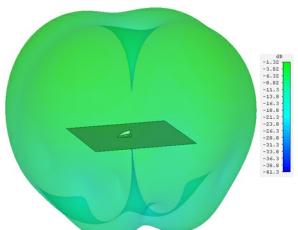
WIFI-element 5600 MHz, side view



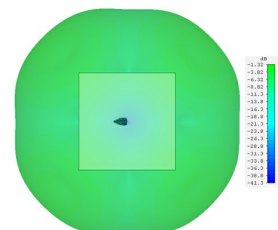
WIFI-element 5600 MHz, top view



UHF-element 380 MHz, side view

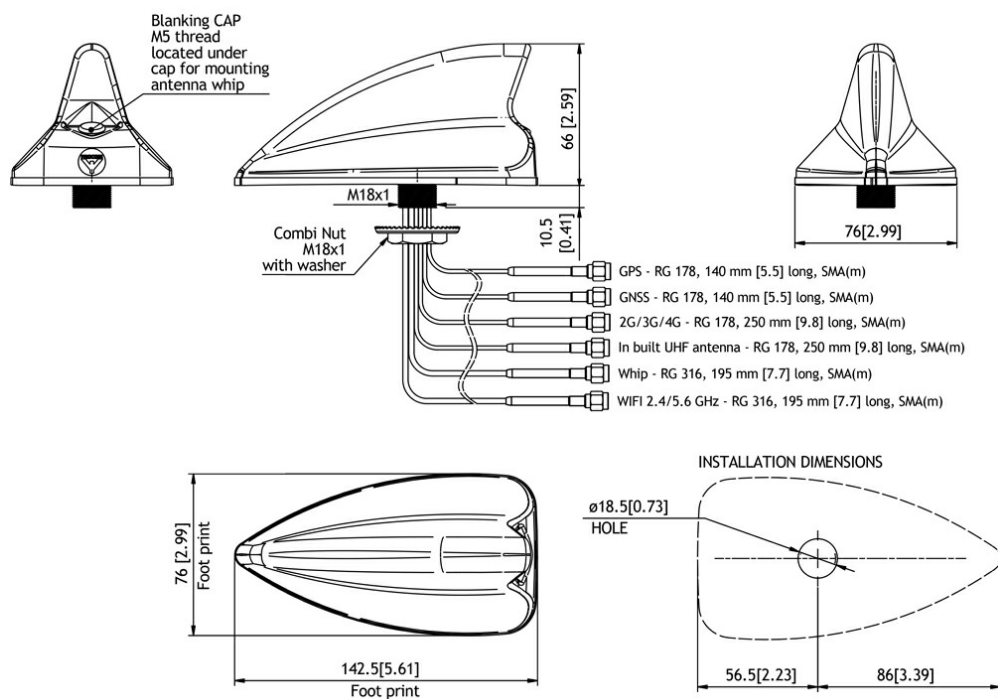


UHF-element 380 MHz, top view



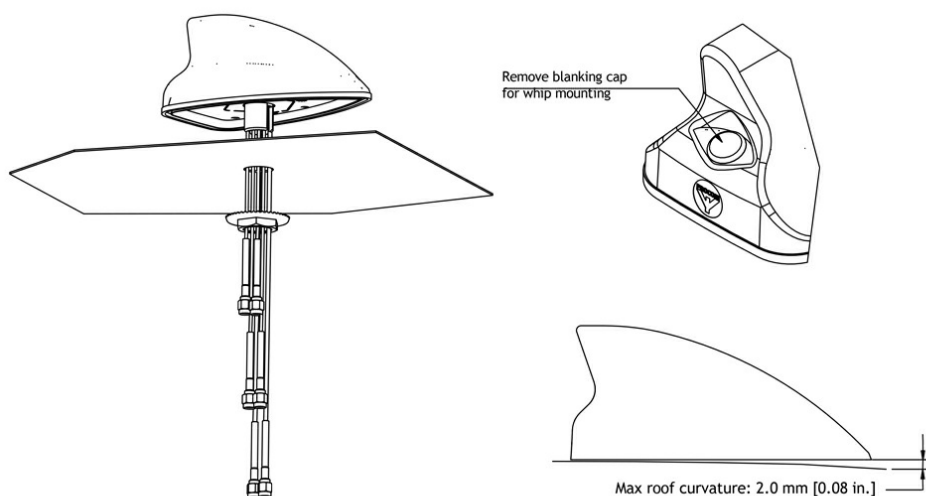


## MOUNTING DETAILS



## Mounting Instructions:

- Drill a 18.5-19 mm hole in the car roof
  - Max roof curvature: 2.0 mm [0.08 in.] (on 142 mm [5.59 in.] )
  - Pull the cables through the hole.
  - Tighten the combi nut with 24 mm spanner wrench
- Recommended torque: 5 Nm



All dimensions are given in mm[in.]

Important: The whip should always be dismantled during car wash.