



- **FAL-ANT-7**

- *GSM 850/900/1800/1900 MHz and*

- *active GPS (1575,42 MHz) antenna*

- *with double side adhesive pad*

- ***USER'S GUIDE***



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**VERSION HISTORY:**

Version	Author	Changes	Changed date
1.0.0	F. Beqiri	- Initial release	27/11/2007

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Please, read carefully the safety precautions.

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# 1 INTRODUCTION

## 1.1 General

This manual describes the electrical, mechanical and environmental specifications of the FALCOM device FAL-ANT-7. This antenna is the replacement for FAL-ANT-5 and it is recommended for use with STEPPIII devices. FAL-ANT-7 remains the same form factor but compared to FAL-ANT 5 it has an improved performance.

The FAL-ANT-7 represents combined active GPS and Quad Band GSM 850/900/1800/1900 MHz antenna. The unit is designed for in-vehicle (windows plane) mounting. The antenna is delivered with 2.5 m cable set with two FAKRA-SMB-female connectors. The device can be connected directly to the FALCOM STEPPIII GSM/GPS terminal, but it can be used with any other equipment that provides the proper electrical and mechanical antenna interfaces.

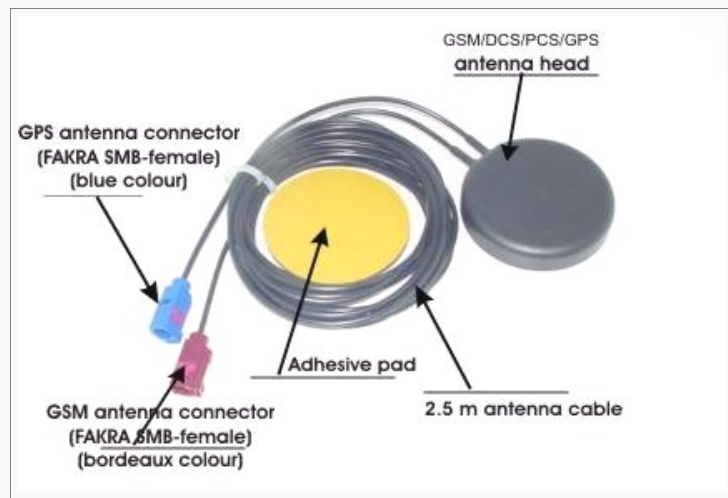
The compact form-factor, the sample installation and the excellent price/performance are making out of the FAL-ANT-7 perfect accessory for vehicle tracking systems as well as related applications.

## 2 INSTALLATION INSTRUCTIONS

1. With a cleaning-cloth (not included) clean the inner side of the car windshield, where the antenna is supposed to be installed.
2. There is a stucked adhesive pad at the bottom side of the antenna head. Remove the protecting sheet (yellow sticker) from the adhesive pad. (On the figure below the adhesive pad is separated, but in the delivery packing it will be stucked at the bottom side of the antenna head).
3. Place the adhesive pad of the FAL-ANT-7 on to cleaned area of the windshield and press the other side of the antenna head to avoid air bubbles.
4. The FAL-ANT-7 antenna with FAKRA-SMB-female connectors has two different colours, the blue colour has to be connected to the GPS SMB-male antenna interface of the equipment and the bordeaux colour has to be connected to the SMB-male antenna interface of the equipment.

### Hints

- [1] The transmitting/receiving side is on the bottom side of the antenna head.
- [2] Proper functionality requires on-glass-mounting
- [3] Do not install the device on metalized or coated windows
- [4] To be installed inside the vehicle on the immovable windshields.
- [5] Do not impair the sight of the driver !
- [6] FAL-ANT-7 is not water resistant. Do not contact it to water.



## 3 ANTENNA SPECIFICATIONS

### 3.1 Electrical specification of GPS antenna

Parameter	Specification
Frequency	1575 ± 3MHz
VSWR	< 1.4
Bandwidth	10 MHz min.
Impedance	50 Ω
Patch	25 mm X 25 mm X 2 mm
Gain Coverage	≥- 4 dBic at -90° ≤ 0 ≤ 90° (over 75% volume)
Polarization	RHCP
Amplifier	Gain without cable 18 dB typical
Noise Figure	0.7 dB typical
DC Voltage	2.5 V to 3.6 VDC
DC Current	3 mA max.

Table 1: Electrical specification for GPS antenna

### 3.2 Electrical specification of GSM/DCS/PCS antenna

Parameter	Specification	
Frequency range	GSM 900	880 - 960 MHz
	GSM 850	825 – 894 MHz
	DCS 1800	1710 - 1880 MHz
	GSM 1900	1850 – 1990 MHz
Peak Gain	GSM 900	0 ~ 0.5 dBi
	GSM 850	0 ~ 0.5 dBi
	DCS 1800	0.5 ~ 1 dBi
	GSM 1900	0.5 ~ 1 dBi
VSWR	GSM 900	< 4
	GSM 850	< 4
	DCS 1800	< 3
	GSM 1900	< 3
Polarization	Linear	
Impedance	50 Ω	

Table 2: Electrical specification for GSM/DCS antenna

## 4 MECHANICAL SPECIFICATION

Parameter	Specification
Weight	≤ 99 gr.
Size	70 x 13 mm (diameter x high)
Cable	2.5 m RG174 standard
GSM/DCS connector	FAKRA SMB-female (bordeaux colour)
GPS connector	FAKRA SMB-female (blue colour)
Mounting	Adhesive pad base
Housing Color	Black

**Table 3:** Mechanical specification of FAL-ANT-7

### 4.1 Environmental Specification

Parameter	Specification
Operating Temperature	-40 °C < T < +85 °C
Storage Temperature	-40 °C < T < +85 °C
Vibration	Sine Sweep, 1 G(0-P), 10-150-10 MHz each axis
Humidity	95% ~ 100% RH

**Table 4:** Environmental specification of FAL-ANT-7