

# Professor Technology Co., Ltd.

Sirius/XM Satellite Radio Car antennas

CPX-412

CPX-413



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## SPECIFICATION FOR SDARS ANTENNA WITH LOW NOISE AMPLIFIER

### CAUTIONS

CPX-412 & CPX413 series are applied for satellite Digital Audio application .Those are using for Sirius and XM satellite radio as a Antenna device.

1. The application products are such as cars for Sirius ans XM radio,.
2. The CPX-412 & CPX413 is magnetic mounting & water proof antenna, and the antennas application for most cars.

### 1.0 SYSTEM

This antenna system consists of two functional blocks, the LNA portion and the antenna element.

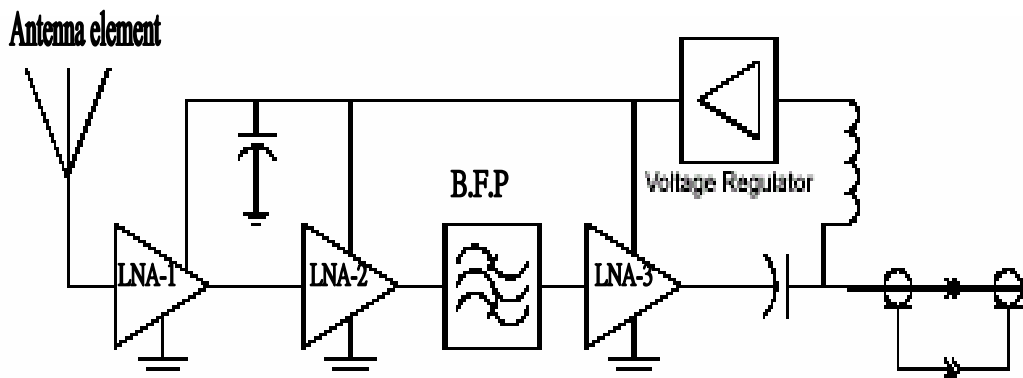


Fig. 1

## 2.0 ENVIRONMENTAL CONDITIONS

2.1	Operation Temperature	-30°C to + 80°C
2.2	Storage Temperature	-40°C to + 100°C
2.3	Relative Humidity	40% to 95%

## 3.0 ELECTRICAL SPECIFICATIONS

3.1	Operation Voltage	Min: 3.6V	Typ: 4.75V	Max: 5.5V
3.2	Power Consumption	@ 4.75V	Typ: 49 – 58 mA	Max: 62 mA

## 4.0 MECHANICAL SPECIFICATIONS

4.1	Shock	10msec. Half sine wave.
4.2	Vibration	10~200Hz Log. Sweep 3.0G sweep time: 15 Minutes, 3 Axes.
4.3	Weight	20g Max.
4.4	Dimension	See Fig. 2

## 5.0 ANTENNA ELEMENT

5.1	Frequency Range	2326.5 ± 6.25 MHz.(Sirius)
		2338.8± 6.25 MHz. (XM)
5.2	Polarization	LHCP
5.3	Bandwidth	50MHz min ( Return Loss ≤ -10 dB )
5.4	Gain at Zenith	+5.0 dBic typ (Sirius)
		+3.0 dBic typ (XM)
5.5	Axial Ration (at Zenith)	3.0dB max

Condition: With 50mm square ground plane

## 6.0 LNA

6.1	Frequency Range	2326.5 ± 6.25 MHz.(Sirius)
		2338.8± 6.25 MHz. (XM)
6.2	Gain	Min: 33dB Typ: 36dB ( + 25 °C ± 5°C )
6.3	Noise Figure	1.0 dB Max. ( +25 °C ± 5°C )
		1.4 dB Max ( +85 °C )
6.4	Filter attenuation at 2332.75 ± 230MHz	> 25 dB
6.5	Interfering P1dB at 1850-1990MHz	> - 10 dB

6.6	Interfering P1dB at 824~894MHz	> - 4 dB
6.7	Interfering P1dB at 450MHz	> 0 dB
6.8	ESD	Antenna surface $\pm 15KV$ / Connector pin $\pm 8KV$

**7.0 TOTAL SPECIFICATIONS (Through Antenna, LNA, Cable and Connector)**

7.1	RF Cable	RG174 / $\phi 2.7 \pm 0.1mm$ , Black
		Cable Length   6000mm $\pm 10mm$
7.2	RF Connector	SMB/M R/A
7.3	Frequency Range	2326.5 $\pm 6.25$ MHz (Sirius)
		2338.5 $\pm 6.25$ MHz (XM)
7.4	Active Gain at Zenith	<b>38 dBic Typ (Sirius)</b>
		<b>36 dBic Typ (XM)</b>
7.5	Output Impedance	50 $\Omega$
7.6	VSWR	2.0 Max

Note 1: Mounted On the 100cm \* 100cm round ground plan

