

**Car roof top Antenna with integrated Bluetooth
transceiver**

(DDA)

DDA01 / DDAECE01



AUDI Part Numbers: 4N0 035 503 N, 4N0 035 503 P,

4N0 035 503 J, 4N0 035 503 Q

(With different color codes for each number.)

**Kathrein Part Numbers: 52510940, 52511567, 52510941,
52510690, 52511155, 52511156, 52511157, 52511158,
52511159, 52511160, 52511161, 52511162, 52511163,
52511164, 52511165, 52511166, 52511238, 52511378,
52511461, 52511466, 52511471, 52511541, 52511546,
52511551, 52511556, 52511561, 52511647, 52511652,
52511657, 52511662, 52511667, 52511672, 52511677,
52511682, 52511687, 52511757, 52511844, 52511849,
52511854, 52511859, 52511864, 52511070, 52511522,
52511570, 52511523, 52511291, 52511521, 52511524,
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52511535, 52511536, 52511537, 52511538, 52511540,
52511545, 52511550, 52511555, 52511560, 52511646,
52511651, 52511656, 52511661, 52511666, 52511671,
52511676, 52511681, 52511686, 52511755, 52511843,
52511848, 52511853, 52511858, 52511863, 52511564,**

(list may be enlarged depending on color code)

Contents

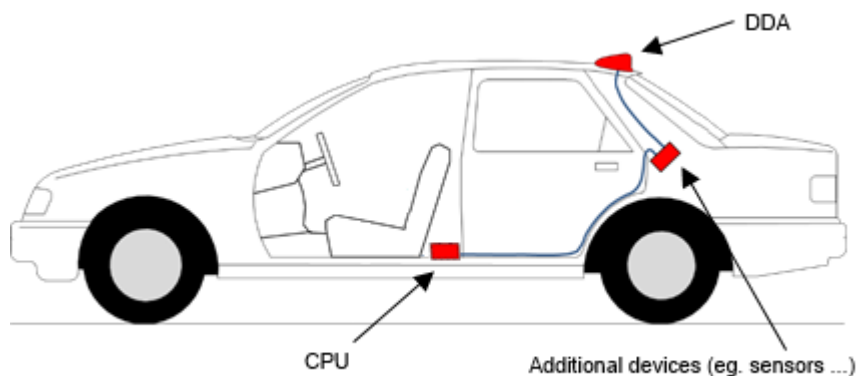
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1. Introduction

The DDA is an automotive roof top antenna module with integrated Bluetooth transceiver for special usage. The Bluetooth circuit and electronics is designed to tunnel a not public described data stream via Bluetooth generic protocol. The device rejects any communication requests from Bluetooth devices not supporting the nonpublic payload format. The device is fully integrated to the electronics of the car. The device will be integrated in the car only by the car-manufacturer or in case of replacement by a professional garage. The end-user does not have to do any installations or adjustments. There will be no aftermarket modules available since the device needs to have a full range of ECUs available to communicate with.

The DDA is connected with the CAN-Bus of the car to communicate with the rest of the ECUs. Additionally it has an antenna with integrated LNA circuits for reception of GNSS (GPS, GALILEO, GLONASS, BEIDOU) and SDARS as well as an antenna for cell phone communication (2G, 3G and 4G) with frequency diplexer for 868 MHz ISM-Band. The availability of the separate ISM path is given for versions without SDARS only. The Bluetooth transmitter is the only system with digital IO. The other functions are analog circuits like in well known roof top car antennas.

2. Installation Options



Example for a principle setup in a car.

The DDA is designed for in-car use only. It is designed according the detailed specification of the OEM (car-manufacturer). It MUST be well integrated into the automotive environment (T_{ambient} max. 95 °C) and needs to be installed by the OEM or in case of replacement by a professional garage.

3. Specification

3.1.General Specification

Model Number	DDA01 / DDAECE01
Antenna/Cradle Connectors	FAKRA (male) DIN 72594-1/ISO 20860-1
DC Connector	MQS-Type
Impedance	50 Ohm
Power Requirements	Digital part :DC 9 V - 16 V; 100 mA SDARS: 5V ±10 %; 150 mA phantom feed GNSS: 5V ±10 %; 30 mA phantom feed Phone/ISM: no DC feed

3.2.Cell phone

Radiator terrestrial omnidirectional

Band	Frequency	Service Supported
	[MHz]	
Band 5, 8, 12, 13, 14, 17, 19, 20,	698 – 960	GSM/WCDMA/LTE
Band 1, 2, 3, 4, 10,33, 34, 35, 36, 37, 39	1710 – 2170	GSM/WCDMA/LTE
Band 7, 38, 40	2496 – 2690	GSM/WCDMA/LTE

Supported Bands

Max Peak Gain 6 dBi

3.3.Remote heating

Radiator terrestrial omnidirectional

Band	Frequency	Service Supported
	[MHz]	
ISM Band	867.5 – 869,5	Remote Heating

Supported Bands

Max Peak Gain -6 dBi

3.4.Navigation

Radiator satellite pointing omnidirectional

Band	Frequency	Service Supported
	[MHz]	
L1	1559,052 – 1605,375	GNSS

Supported Bands

Max Gain of LNA 33 dB

3.5.Satellite Radio

Radiator satellite pointing omnidirectional

Band	Frequency	Service Supported
	[MHz]	
S band	2320 – 2345	SDARS

Supported Bands

Max Gain of LNA 31 dB

3.6.Bluetooth LE

4. Radiator terrestrial omnidirectional

Band	Frequency	Service Supported
	[MHz]	
ISM-Band	2402 – 2480	BTLE

Supported Bands

Max Gain of antenna -6 dBi

Max output power 1 mW (cable)

Each DDA is individually tested and factory set to ensure FCC compliance and cannot be adjusted without factory reprogramming or disabling the hardware.

5. Safety and Recommendations



WARNING: The DDA unit is designed for in-car use only. It MUST be well integrated into the automotive environment (T_{ambient} max. 95 °C) and needs to be installed by the OEM (car-manufacturer) or in case of replacement by a professional garage.



RF SAFETY WARNING: This device must be located at least 8 inches (20,3 cm) from all persons. The car mounted cell phone module attached needs to fulfill the FCC requirements.



WARNING: The Device must be installed no higher than 10 meters above ground.

This device complies with Part 15 of FCC rules. Operation is subject to two conditions:

- 1) This device may not cause harmful interference.
- 2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by KATHREIN Automotive could void the authority to operate this equipment.