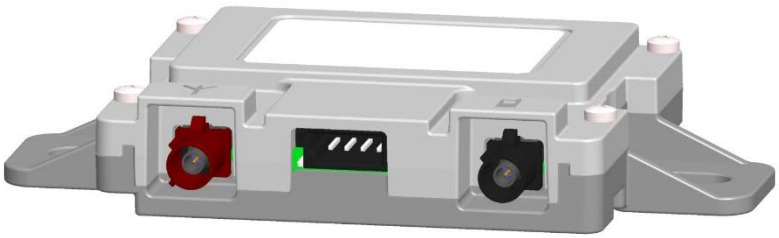
KATHREIN
Automotive

Cellular Signal Booster

(Compensator)

LTECOMPB0



BMW Part Number + Index: **6803145-II**

Kathrein Part Number: **50110260**

Contents

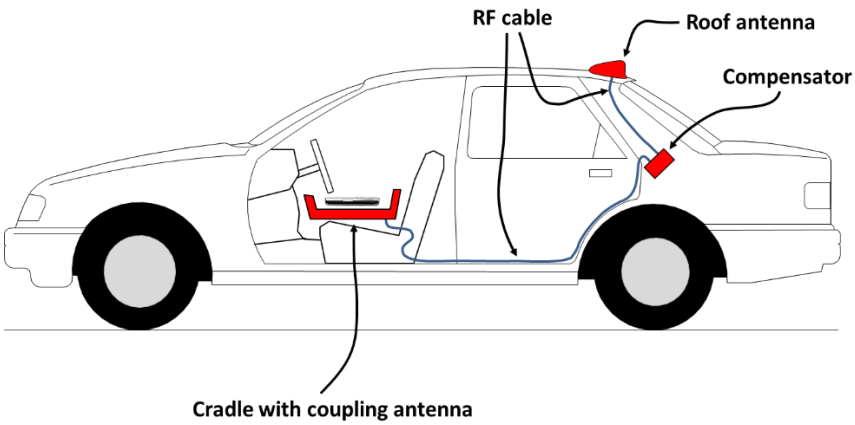
1. Introduction

The Compensator is a mobile consumer Signal Booster which operates on the frequencies and in the market areas of multiple licenses and 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.

The Compensator is connected with the car antenna (e.g. roof top antenna) and the coupling tray (Cradle) in series. While the cradle is located for example in the center console of the car, the Compensator itself is installed for example in the C-pillar or under the back seat.

The Compensator is a powerful and effective way to improve link quality and coverage for mobile phones when used within a car. This is basically by means of compensating losses and providing a connection to a permanent optimal positioned external car antenna. The Compensator ensures the conformance with mobile network standards as well as the compliance with country regulations.

2. Installation Options



Example for a principle setup in a car.

The Compensator unit is designed for in-car use only. It MUST be well integrated into the automotive environment ($T_{ambient}$ max. 85 °C) and should be installed by the OEM (car-manufacturer) or in case of replacement by a professional garage. Only the antennas listed at the Antenna Kitting section are allowed to be used along with the Compensator.

3. Antenna Kitting

Cradle Options:

1. WCH-173
   WCH-187
2. WCH-184
3. WCA Small BMW

Outside Antenna Options:		**BMW PART No.**
Ant 1:	DA GSS/TEL/TEL/SDARS LTE	9659898
Ant 2:	Telefonantenne1 Frontend Folie	9273669
Ant 3:	ECU-01 R1-US-3G + ANT 3G TEL GPS SDARS	9395306-01 + 9303036-03

4. Compensator Specifications

General Specifications

Model Number	LTECOMPB0
Antenna/Cradle Connectors	FAKRA (male) DIN 72594-1/ISO 20860-1
DC Connector	MQS-Type
Impedance	50 Ohm
Power Requirements	DC 9 V - 16 V; 500 mA; 2,5 A peak max.

Supported Bands

Band	**Frequency**		**Service Supported**
	UL (Tx) [MHz]	**DL (Rx) [MHz]**	
Band 2	1850 – 1910	1930 – 1990	GSM/WCDMA/LTE
Band 4	1710 – 1755	2110 - 2155	WCDMA/LTE
Band 5	824 – 849	869 – 894	GSM/WCDMA/LTE
Band 12/17	698 – 716	729 – 746	LTE
Band 13	777 – 787	746 – 756	LTE

Bypass State

Parameter	Condition	Min. Value	Typ. Value	Max. Value	Unit
Gain G (Bypass)	698 MHz – 1 GHz	-3.6	-2.6	-1.6	dB
	1 GHz – 2.2 GHz	-5.5	-4.5	-2.5	dB

Gain Uplink

Parameter	Condition	Min. Value	Max. Value	Unit
Gain G Uplink	Band 2	15	22.8	dB
	Band 4	15	22.8	dB
	Band 5	15	22.8	dB
	Band 12/17	15	22.8	dB
	Band 13	15	22.8	dB

Gain Downlink

Parameter	Condition	Min. Value	Max. Value	Unit
Gain G Downlink	Band 2	15	22.8	dB
	Band 4	15	22.8	dB
	Band 5	15	22.8	dB
	Band 12/17	15	22.8	dB
	Band 13	15	22.8	dB

Output Power Uplink

Parameter	Condition	Max. Value	Unit
Pout Uplink	Band 2	21	dBm
	Band 4	21	dBm
	Band 5	21	dBm
	Band 12/17	21	dBm
	Band 13	21	dBm

Output Power Downlink

Parameter	Condition	Max. Value	Unit
Pout Downlink	Band 2	-27	dBm
	Band 4	-27	dBm
	Band 5	-27	dBm
	Band 12/17	-27	dBm
	Band 13	-27	dBm

Each Compensator is individually tested and factory set to ensure FCC compliance and cannot be adjusted without factory reprogramming or disabling the hardware. The Compensator will amplify, but not alter incoming and outgoing signals in order to increase coverage of authorized frequency bands only.

The Compensator only transmits signals if a wake up signal is and a signal from a mobile phone is detected. The wake up signal is generated by the cradle only if a mobile phone resides in the coupling tray.

If the Compensator detects an oscillation, it will automatically stop the transmission. For a detected oscillation the Compensator will automatically resume normal operation after a minimum of 1 minute. After 5 such automatic restarts, the Compensator shuts off until a manually restart is initialized by taking the mobile phone off the cradle. Noise power, gain and linearity are maintained by the Compensator´s microcontroller.

5. Safety and Recommendations

WARNING: The Compensator unit is designed for in-car use only. It MUST be well integrated into the automotive environment ($T_{ambient}$ max. 85 °C) and should be installed by the OEM (car-manufacturer) or in case of replacement by a professional garage.

WARNING: Only the antennas listed at the Antenna Kitting section are allowed to be used along with the Compensator. The use of other antennas will cause the cease of the Compensator´s operating license.

RF SAFETY WARNING: Any antenna used with this device must be located at least 8 inches (20,3 cm) from all persons. The FCC requires that a cell phone with cradle attached may only be used with the in-car mounted cradle. It is not allowed to use a cell phone with an attached cradle near to the ear.

WARNING: The Outside Car-Antenna must be installed no higher than 10 meters above ground.

This is a CONSUMER device
BEFORE USE, you MUST REGISTER THIS DEVICE with your wireless provider and have your provicer´s consetn. Most wireless providers consent to the use of Compensators. Some providers may not consent to the use of this device on their network. If you are unsure, contact your provicder. You MUST operate this device with approved antennas and cables as specified by the manufacturer. Antennas MUST be installed at least 20 cm (8 inches) from any person. You MUST cease operating this device immediately if requested by the FCC or a licensed wireless service privider. WARNING E911 location information may not be provided or may be inaccurate for calls served by using this device.

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.