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FCC ID: RK7USA-MMC-DC
IC: 4774A-USAMMCDC

850 / 1900 MHz DUAL BAND COMPENSER

MODEL USA-MMC-DC 205 0111 1

USER MANUAL

1 GENERAL

The 850 / 1900 MHz Dual Band Compenser model USA-MMC-DC 205 0111 1 is a bi-directional, dual band RF amplifier used in conjunction with either a dual band or a standard single band mobile phone. It's designed to compensate for signal attenuation in both transmit and receive paths due to cable losses employed in automotive OEM installations. This helps to improve call quality in weak coverage areas and reduce dropped calls in between cell sites. The Compenser is designed for digital (GSM/GPRS, W-CDMA, EDGE and CDMA) modes.

WARNING

The Compenser must **NOT** be used for TDMA and/or the analog (AMPS) mode!

STATEMENT according to FCC rules CFR, Title 47, Part 15, Section 15.19:

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

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

2 INSTALLATION

To meet the FCC's and IC's RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user or nearby persons and the antenna. The antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

WARNING

All installations are done at the OEM factory. No end-user installation or accessible part is involved. Any unauthorized changes or modifications not expressly approved by the party responsible for compliance could void user's authority to operate this equipment.

3 I/O CONNECTION

Mobile port:	FAKRA RF type connector, cod. D, female
Antenna port:	FAKRA RF type connector, cod. D, male
DC input and On/Off control:	4-pin automotive connector

4 SPECIFICATIONS

FCC ID		RK7USA-MMC-DC
FCC Rule Parts		22H & 24E
IC Certification Number		4774A-USAMMCDC
IC Radio Standards Specification		RSS-129 for 850MHz CDMA
		RSS-132 for 850MHz GSM/GPRS, EDGE and W-CDMA
		RSS-133 for 1900MHz GSM/GPRS, EDGE, W-CDMA and CDMA
Operating Frequency	Uplink (Tx)	824 … 849 MHz
	&	1850 … 1910 MHz
	Downlink (Rx)	869 … 894 MHz
	&	1930 … 1990 MHz

Mode of Transmission	Digital
Data Source	External
Type of Modulation	GSM/GPRS, W-CDMA, EDGE, CDMA (digital)
Type of Information	Telephony & Data
Input and Output Impedance	50 Ohms
Harmonics & Spurious	according to FCC and IC specifications
Stability	Any RF load condition
DC Supply Voltage	10.8 … 15.6 V
Current Draw (switched off)	$I_{OFF} \leq 0.1\,\text{mA}$
Current Draw (quiescent)	$140\,\text{mA} \leq I_Q \leq 220\,\text{mA}$
Current Draw (peak)	$I_p \leq 2.0\,\text{A}$
Operating Temperature:	-20 … 55 C (-4 … 131 °F)
Storage Temperature:	-40 … 90 C (-40 … 194 °F)

Maximum Output Power:

Modulation Type	Frequency Range /MHz	Emission Designator	max. Output Power /Watts	max. Output Power /dBm
GSM/GPRS	824.2 … 848.8	244KGXW	1.384	31.41
	1850.2 … 1909.8	245KGXW	0.908	29.58
W-CDMA	826.6 … 846.4	4M18F9W	0.428	26.31
	1852.6 … 1907.4	4M15F9W	0.590	27.71
EDGE	824.2 … 848.8	245KG7W	1.820	32.6
	1850.2 … 1909.8	245KG7W	0.951	29.78
CDMA	824.7 … 848.31	1M27F9W	0.855	29.32
	1851.25 … 1908.75	1M29F9W	0.769	28.86

Table 1: Maximum Output Power

Power Output listed in Table 1 is conducted.

The antenna installation and operating configurations of this Compenser, including antenna gain and cable loss must satisfy MPE categorical Exclusion Requirements of FCC Rules CFR (Code of Federal Regulations) Title 47, Part 2, §2.1091. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.