

APPLICANT:
Ericsson Radio System AB

FCC ID NO.
B5KKRC12103-31

EXHIBIT 12 - COVER SHEET

Table of Contents

General Information	12.1
Frequency Stabilizing Circuit	12.2
Spurious and harmonic suppression	12.3
Limiting Power	12.4
Digital Modulation	12.5

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DESCRIPTION

2.1033 (c)(2) FCC Identifier: B5KKRC12103-31

This transmitter is designed for use in Personal Communications systems Subpart E of Part 24.

The frequencies are generated using a phase-locked synthesizer. The synthesizer is locked to the in-coming sync signal from the PCM-link used for the system.

- (4) Type of Emission: 30KODXW
- (5) Frequency range: 1930.08 to 1989.96 MHz
- (6) Range of Operating Power: This transmitter is designated to supply 28 Watts of power at the antenna connector of the radio channel unit (TRX). 100 power levels are provided in 0.2 dB steps down to 280 milliwatts.
- (7) Maximum Power Rating: The maximum power rating under environmental supply voltage variations is equal to 28 watts plus the power level tolerance of + 1 dB. Therefore the maximum output power is 35.2 watts.
- (8) Final Amplifier Voltage and Current in normal operation (Rated power is for 1 device in the output stage).

<u>0.28 Watts</u>	<u>28 Watts</u>
24.5 V DC	24.5 V DC
0.15 A DC	2.5 A DC

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DESCRIPTION

2.1033 (c)(10) Frequency Stabilizing Circuit Description

The transmitter uses a phase-locked UHF VCO Operating between 1787.06 MHz to 1847.06 MHz. This signal is phase-locked to an internal 3.24 MHz reference oscillator frequency (RAREF) which in turn is divided down 6 times from the 19.44 MHz VCO in the digital block. The VCO is phase-locked to the incoming T-Link sync frequency of 2.048 MHz. The T-link is converted from a C-link in the DCON-board in the TCB-cabinet where the TRX:s are mounted. The C-link is phase-locked to the local PCM-link sync frequency of 1.544 MHz (or 2.048 MHz for non-US markets) in the CRI in the RBS884-1900 Macro base station.

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DESCRIPTION

2.1033 (c)(10) Spurious and Harmonic Suppression

Spurious and harmonic suppression is achieved by using a bandpass filter (N403 LX-stage) in the exciter amplifier and a passive bandpass filter connected to the TRX output. The output from the bandpass filter is connected to the applicable combiner system in the base station. The combiner system will connect all the TRX units in the RBS884 base station family to the same antenna output.

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2.1033 (c)(10) Limiting Power

The EMRPS function allows the RF power output to be set from 0 dB to - 20 dB attenuation in 0.2 dB steps from the MSC (Mobile Switching Center). The power levels can be in the range from a minimum of 280 milliwatts to a maximum Of 28 watts at the output of the TRX.

The EMRPS supervises the feedback loop (RFF) from the Coupler stage to Linearization by checking the baseband signals. If the power output changes, the EMRPS will adjust the gain in the exciter amplifier.

If some fault happens in the output power circuits, the EMRPS will compare the fault with prestored values and report the fault to the Switch via alarm codes in different levels. The highest alarm level is a serious fault and this alarm will get the EMRPS to shut down the output power stages without confirmation from the Switch.

The EMRPS function will also control the RF power output according to the environment temperature. The power amplifier will not be able to get the supply current it need above 50 degrees C and below -5 degrees C. Then will the EMPRS shut down the power output since the unit is not able give a power output above -3 dB below set power level.

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DESCRIPTION

2.1033 (c)(10) Digital Modulation

The TRX is used both as voice channel and control channel in the RBS884 System. The DIGITAL modulation is limited in the waveform generator. The burst data from each time slot is formatted with syncwords and coded with a digital verification color code and user channel data. The formatted burst data are then converted to digital I and Q signals. These digital I and Q signals are then filtered in a square root raised cosine filter to form the correct modulation. The filtered signals are ten times oversampled and converted to analogue signals in a D/A-Converter. The modulation form is $\pi/4$ -DQPSK for control and voice channel.