

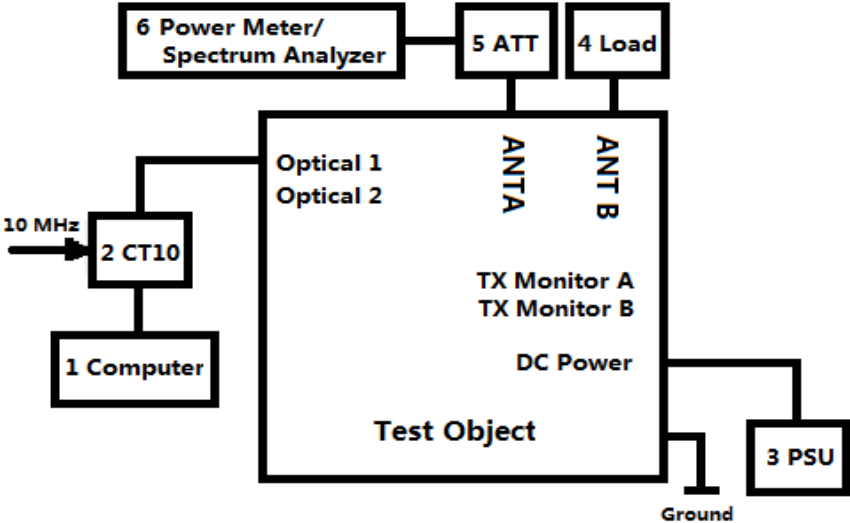
## Product Information

<b>MANUFACTURING DESCRIPTION</b>	Remote Radio Unit
<b>MANUFACTURER</b>	Ericsson AB
<b>PRODUCT NAME</b>	Radio 2203 B5
<b>PRODUCT NUMBER</b>	KRC 161 508/1
<b>HVIN</b>	AS1615081
<b>TRANSMITTER OPERATING RANGE</b>	TX: 869 MHz - 894 MHz RX: 824 MHz - 849 MHz
<b>MODULATIONS</b>	WCDMA: QPSK, 16QAM, 64QAM LTE: QPSK, 16QAM, 64QAM, 256QAM
<b>DESIGNATION OF EMISSION</b>	WCDMA: 5M00F9W LTE: 1M40F9W, 3M00F9W, 5M00F9W, 10M0F9W
<b>NUMBER OF CARRIERS</b>	WCDMA: Maximum 4 carriers LTE: Maximum 3 carriers WCDMA&LTE MSR: Maximum 5 carriers
<b>SUPPORTED CHANNEL BANDWIDTH CONFIGURATION</b>	WCDMA: 4.2MHz to 5MHz (configurable in steps of 100/200kHz) LTE: 1.4MHz, 3MHz, 5MHz, 10MHz
<b>OUTPUT POWER (RMS) (W or dBm)</b>	Maximum 37dBm (5W) per port for all modes
<b>OUTPUT POWER TOLERANCE</b>	-2.0dB ~ +0.6dB
<b>INSTANTANEOUS BANDWIDTH</b>	25MHz
<b>NUMBER OF ANTENNA PORTS</b>	2 TX/RX ports
<b>FCC ID</b>	TA8AKRC161508-1
<b>IC</b>	287AB-AS1615081
<b>Power source</b>	36V DC
<b>TECHNICAL DESCRIPTION (a brief description of the intended use and operation)</b>	The equipment is the Remote Radio Part of WCDMA / LTE / WCDMA & LTE MSR Base Station.
<b>Test Specification</b>	FCC CFR 47 Part 22: 2015 FCC CFR 47 Part 2: 2015 ANSI C63.4: 2014 ANSI/TIA-603-C-2004 KDB 971168 D01 v02r02 KDB 662911 D01 v02r01 RSS-GEN Issue 4: 2014 RSS-132 Issue 3: 2013

**In this test plan, the abbreviations are defined as below:**

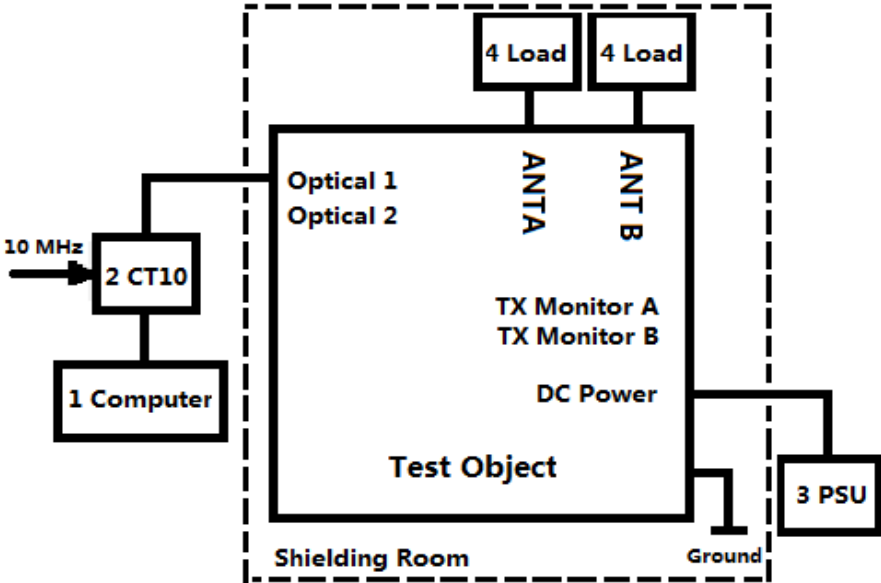
16Q	16QAM
64Q	64QAM
B	Bottom Channel
BE	Band Edge
BW	Bandwidth
C	Carrier(s)
C1	Carrier 1
C2	Carrier 2
C3	Carrier 3
C4	Carrier 4
CA	Carrier Aggregation
CBW	Carrier Bandwidth
CN	Carrier Number
CSE	Conducted Spurious Emissions
FS	Frequency Stability
IBW	Instantaneous Bandwidth
L	LTE
L1	LTE Carrier 1
L2	LTE Carrier 2
M	Middle Channel
Max	Maximum
MC	Multi-Carriers
MIMO	Multiple Input Multiple Output
Mod	Modulation
MSR	Multi-Standard Radio
OBW	Occupied Bandwidth
PAR	Peak to Average Power Ratio
Port A1	Antenna Port 1
Port A2	Antenna Port 2
QP	QPSK
RAT	Radio Access Technology
RSE	Radiated Spurious Emissions
SC	Single Carrier
T	Top Channel
W	WCDMA
W+L	WCDMA and LTE
W1	WCDMA Carrier 1
W2	WCDMA Carrier 2
W3	WCDMA Carrier 3

**Test Setup for Conducted Measurements:**



Note:  
 ATT: Attenuator  
 PSU: Power Supply

**Test Setup for Radiated Measurements:**



Note:  
 ATT: Attenuator  
 PSU: Power Supply

**A brief summary shows the limits and test requirements for Radio 2203 B5 RF testing as below:**

Spec Clause			Test Description	Limits	Note
Part 2	Part 22	RSS 132			
2.1046	22.913(a)	5.4	Maximum Output Power and Peak to Average Power Ratio - Conducted	FCC ERP: $\leq 500W$ or $\leq +57.0dBm$ IC EIRP: $\leq 820W$ or $\leq +59.1dBm$ PAR: $\leq 13dB$	-
2.1046	22.913(a)	5.4	Equivalent Radiated Power(ERP) or Equivalent Isotropically Radiated Power (EIRP)	FCC ERP: $\leq 500W$ or $\leq +57.0dBm$ IC EIRP: $\leq 820W$ or $\leq +59.1dBm$	-
2.1049(h)	22.917(b)	RSS-Gen 6.6	Occupied Bandwidth	FCC: -26dB Bandwidth IC: 99% Bandwidth	-
2.1051	22.917(b)	5.5	Spurious Emissions at Band Edge	The power of any emission outside the frequency band shall be attenuated below the transmitter power(P) by at least $43+10\log P$ dB.	-
2.1053	22.917(a)	5.5	Radiated Spurious Emissions	The power of any emission outside the frequency band shall be attenuated below the transmitter power(P) by at least $43+10\log P$ dB.	-
2.1051	22.917(a)	5.5	Conducted Spurious Emissions	The power of any emission outside the frequency band shall be attenuated below the transmitter power(P) by at least $43+10\log P$ dB.	-
2.1055	22.355	5.3	Frequency Stability	$\leq \pm 1.5ppm$	-
-	-	5.6	Receiver Spurious Emission	-	N/A

N/A - Not Applicable

## Configuration Information

Configuration Code	Carrier(s)	Configuration Description	Frequencies Allocation	Note
W-SC	1C	WCDMA Single Antenna, Single Carrier	Frequencies Table for WCDMA Single RAT	SC
W-MC 1	2C	WCDMA Single Antenna, Multi Carrier x2	Frequencies Table for WCDMA Single RAT	TC1a & NTC1a
W-MC 2	4C	WCDMA Single Antenna, Multi Carrier x4	Frequencies Table for WCDMA Single RAT	TC1a
W-MIMO-SC	1C	WCDMA MIMO, Single Carrier	Frequencies Table for WCDMA Single RAT	SC
W-MIMO-MC 1	2C	WCDMA MIMO, Multi Carrier x2	Frequencies Table for WCDMA Single RAT	TC1a & NTC1a
W-MIMO-MC 2	4C	WCDMA MIMO, Multi Carrier x4	Frequencies Table for WCDMA Single RAT	TC1a
W-MIMO-MC 3	3C	WCDMA MIMO, Multi Carrier x3	Frequencies Table for WCDMA Single RAT	TC1a
L-MIMO-SC	1C	LTE MIMO, Single Carrier	Frequencies Table for LTE Single RAT	SC
L-MIMO-MC 1	2C	LTE MIMO, Multi Carrier x2	Frequencies Table for LTE Single RAT	TC2 (Contiguous CA or non-CA) & NTC2 (Non-contiguous CA or non-CA) & ETC2 (Contiguous CA)
L-MIMO-MC 2	3C	LTE MIMO, Multi Carrier x3	Frequencies Table for LTE Single RAT	TC2 (Contiguous CA or non-CA) & ETC2 (Contiguous CA)
W+L-MC 1	1W+1L	WCDMA+LTE Single Antenna, One Tx, 1WCDMA+1LTE	Frequencies Table for WCDMA&LTE MSR RAT	TC3a & NTC3a & Max. Adjacent
W+L-MC 2	3W+2L	WCDMA+LTE Single Antenna, One Tx, 3WCDMA+2LTE	Frequencies Table for WCDMA&LTE MSR RAT	TC3a
W+L-MC 3	3W+1L	WCDMA+LTE Single Antenna, One Tx, 3WCDMA+1LTE	Frequencies Table for WCDMA&LTE MSR RAT	TC3a
W+L-MC 4	2W+1L	WCDMA+LTE Single Antenna, One Tx, 2WCDMA+1LTE	Frequencies Table for WCDMA&LTE MSR RAT	TC3a & Max. Adjacent
W+L-MIMO-MC 1	1W+1L	WCDMA+LTE MIMO, 1WCDMA+1LTE	Frequencies Table for WCDMA&LTE MSR RAT	TC3a & NTC3a & Max adjacent
W+L-MIMO-MC 2	3W+2L	WCDMA+LTE MIMO, 3WCDMA+2LTE	Frequencies Table for WCDMA&LTE MSR RAT	TC3a
W+L-MIMO-MC 3	3W+1L	WCDMA+LTE MIMO, 3WCDMA+1LTE	Frequencies Table for WCDMA&LTE MSR RAT	TC3a
W+L-MIMO-MC 4	2W+1L	WCDMA+LTE MIMO, 2WCDMA+1LTE	Frequencies Table for WCDMA&LTE MSR RAT	TC3a & Max. Adjacent

### Note for configurations and frequency allocations:

The configurations (such as TC1a and NTC1a, TC2 and NTC2, TC3a and NTC3a) in chapter 5 of 3GPP TS 37.141 V11.12.0(2015-07) were used to perform the power, spurious emission and occupied bandwidth measurements for this product. Meanwhile, the frequency allocations for configurations of WCDMA, LTE and W+L modes, were compliance with the definition in chapter 4.8 of 3GPP TS 37.141 V11.12.0(2015-07).

According to the information from manufacturer, LTE operation can be configured to Carrier Aggregation(CA), and the maximum CA bandwidth is 25MHz. TC2, Contiguous CA, was used to carry out the power measurement referring to the configuration in chapter 5 of the standard aforementioned, and the results were shown in chapter 2.1 of test report. NTC2, Non-contiguous CA, was used to perform the spurious emissions measurement according to configuration in chapter 5 of the standard aforementioned, and the results were shown in chapter 2.3 of test report. For Occupied Bandwidth measurement, single carrier and ETC2, contiguous CA, were used to perform the testing, referring to the configuration in chapter 5 of 3GPP TS 37.141 V11.12.0(2015-07). In addition, ETC2 was configured in accordance with the description in chapter 4.2.10.2 of 3GPP TS 36.141 version 11.11.0 (2014-12). The Occupied Bandwidth results for LTE were shown in chapter 2.2 of test report.

In the below tables, the units of frequencies, CBW(channel bandwidth), IBW(intantaneous bandwidth) are megahertz(MHz) unless otherwise stated.

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**Frequencies Table for WCDMA Single RAT**

WCDMA Single RAT			Max. Power(QP)			PAR&FS(QP)			OBW(QP)			BE(QP)			CSE(QP)			RSE(Worst Case)				
IBW (MHz)	CBW (MHz)	CN	5MHz			5MHz			5MHz and 4.2MHz			5MHz			5MHz			5MHz				
			B	M	T	B	M	T	B	M	T	B	M	T	B	M	T	B	M	T		
Single Carrier	N/A	5.0	C1	871.40	881.40	891.60	871.40	881.40	891.60	871.40	881.40	891.60	C1	871.40	891.60	C1	871.40	881.40	891.60	871.40	881.40	891.60
Multi-Carrier (1x2) TC1a & NTC1a	25.0	5.0	C1	871.40	871.40	871.60							C1	871.40	886.60	C1	871.40	871.40	871.60	871.40	871.40	871.60
			C2	891.40	891.60	891.60	(TC1a)	(NTC1a)	(TC1a)				C2	876.40	891.60	C2	891.40	891.60	891.60	891.40	891.60	891.60
Multi-Carrier (1x4) TC1a	25.0	5.0	C1	871.40		871.60										C1	871.40		871.60	871.40		871.60
			C2	876.40		876.60										C2	876.40		876.60	876.40		876.60
			C3	886.40		886.60										C3	886.40		886.60	886.40		886.60
			C4	891.40		891.60										C4	891.40		891.60	891.40		891.60
WCDMA MIMO			Max. Power(16Q&64Q) EIRP SC(16Q or 64Q)			PAR(16Q&64Q)			OBW(16Q&64Q)			BE(16Q)			CSE(16Q&64Q)			RSE(Worst Case)				
IBW (MHz)	CBW (MHz)	CN	5MHz			5MHz			5MHz and 4.2MHz			5MHz			5MHz			5MHz				
			B	M	T	B	M	T	B	M	T	B	M	T	B	M	T	B	M	T		
Single Carrier	N/A	5.0	C1	871.40	881.40	891.60	871.40	881.40	891.60	871.40	881.40	891.60	C1	871.40	891.60	C1	871.40	881.40	891.60	871.40	881.40	891.60
Multi-Carrier (1x2) TC1a & NTC1a	25.0	5.0	C1	871.40	871.40	871.60							C1	871.40	886.60	C1	871.40	871.40	871.60	871.40	871.40	871.60
			C2	891.40	891.60	891.60	(TC1a)	(NTC1a)	(TC1a)				C2	876.40	891.60	C2	891.40	891.60	891.60	891.40	891.60	891.60
Multi-Carrier (1x4) TC1a	25.0	5.0	C1	871.40		871.60										C1	871.40		871.60	871.40		871.60
			C2	876.40		876.60										C2	876.40		876.60	876.40		876.60
			C3	886.40		886.60										C3	886.40		886.60	886.40		886.60
			C4	891.40		891.60										C4	891.40		891.60	891.40		891.60
Multi-Carrier (1x3) TC1a	25.0	5.0	C1												C1	871.40		871.60	871.40		871.60	
			C2												C2	876.40		876.60	876.40		876.60	
			C3												C3	891.40		891.60	891.40		891.60	

pre-test for 2 or 3 carriers, chose the worst for final test.

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**Frequencies Table for LTE Single RAT**

LTE MIMO			Max. Power(All Mod, All BW) EIRP SC(QP or 16Q)			PAR&FS(PAR:All Mod,All BW; FS: 3MHz BW&QP)			OBW(All Mod,All BW)			BE(worst case)			CSE(worst case)			RSE(Worst case)					
	IBW (MHz)	CBW (MHz)	CN	B	M	T	B	M	T	B	M	T	CN	B	M	T	CN	B	M	T	B	M	T
Single Carrier	N/A	1.4	C1	869.70	881.50	893.30	869.70	881.50	893.30	869.70	881.50	893.30	C1	869.70		893.30	C1	869.70	881.50	893.30	869.70	881.50	893.30
		3.0	C1	870.50	881.50	892.50	870.50	881.50	892.50	870.50	881.50	892.50	C1	870.50		892.50	C1	870.50	881.50	892.50	870.50	881.50	892.50
		5.0	C1	871.50	881.50	891.50	871.50	881.50	891.50	871.50	881.50	891.50	C1	871.50		891.50	C1	871.50	881.50	891.50	871.50	881.50	891.50
		10.0	C1	874.00	881.50	889.00	874.00	881.50	889.00	874.00	881.50	889.00	C1	874.00		889.00	C1	874.00	881.50	889.00	874.00	881.50	889.00
Multi-Carrier (1x2) TC2 & NTC2	25.0	1.4	C1	869.70									C1	869.70		891.90	C1	869.70			869.70		
			C2	893.30									C2	871.10		893.30	C2	893.30			893.30		
		3.0	C1	870.50									C1	870.50		889.50	C1	870.50			870.50		
			C2	892.50									C2	873.50		892.50	C2	892.50			892.50		
		5.0	C1	871.50									C1	871.50		886.50	C1	871.50			871.50		
			C2	891.50									C2	876.50		891.50	C2	891.50			891.50		
		10.0	C1	874.00									C1	874.00		879.00	C1	874.00			874.00		
			C2	889.00									C2	884.00		889.00	C2	889.00			889.00		
Multi-Carrier (1x3) TC2	25.0	1.4	C1	869.70													C1	869.70			869.70		
			C2	891.90													C2	891.90			891.90		
			C3	893.30													C3	893.30			893.30		
		3.0	C1	870.50													C1	870.50			870.50		
			C2	889.50													C2	889.50			889.50		
			C3	892.50													C3	892.50			892.50		
		5.0	C1	871.50													C1	871.50			871.50		
			C2	886.50													C2	886.50			886.50		
			C3	891.50													C3	891.50			891.50		









869.0 894.0			Frequencies Table for WCDMA&LTE MSR RAT												
W+L IBW(MHz) 25			Scheme	Max. Power(Single: L:QPSK,W:QPSK(MIMO:16QAM))						Bandedge(L:QPSK, W:16QAM)					
CBW(MHz) Config.				Single(MIMO) Port A1			MIMO Port A2			MIMO Port A1			MIMO Port A2		
B	M	T		B	M	T	B	M	T	B	M	T			
2 carriers (TC3a & NTC3a)	5.0		W		871.4			871.4							
	1.4	1W+1L	L		893.3			893.3							
	3.0	1W+1L	L		892.5			892.5							
	5.0	1W+1L	L		891.5			891.5							
	10.0	1W+1L	L		889.0			889.0							
3 carriers (TC3a)	5.0		W1												
	5.0		W2												
	1.4	2W+1L	L												
	3.0	2W+1L	L												
	5.0	2W+1L	L												
Max carriers (TC3a)	5.0		W1		871.4			871.4	Follow the pretest to choose the worst case with 2C or 3C by results for different Mod. BW and carriers space.  W+L (If worst case BW for L < 5MHz, use L+W) on B W+L on T (use L+W if worst case BW > 5MHz)  W with 16QAM, L with QPSK, BW = result from pre-testing.						
			W2		876.4			876.4							
			W3		881.4			881.4							
	1.4	3W+2L	L1		891.9			891.9							
			L2		893.3			893.3							
	3.0	3W+2L	L1		889.5			889.5							
			L2		892.5			892.5							
	5.0	3W+2L	L1		886.5			886.5							
			L2		891.5			891.5							
	10.0	3W+1L	L		889.0			889.0							
2 carriers (Max Adjacent)	1.4	1W+1L	L					869.7		893.3		869.7		893.3	
	5.0	1W+1L	W					873.0		890.0		873.0		890.0	
	3.0	1W+1L	L					870.5		892.5		870.5		892.5	
	5.0	1W+1L	W					874.6		888.4		874.6		888.4	
	5.0		W					871.4		891.6		871.4		891.6	
	5.0	1W+1L	L					876.4		886.6		876.4		886.6	
	10.0	1W+1L	L					878.9		884.1		878.9		884.1	



869.0		894.0		Frequencies Table for WCDMA&LTE MSR RAT										
W+L IBW(MHz) 25		Scheme	Max. Power(Single: L:QPSK,W:QPSK(MIMO:16QAM))						Bandedge(L:QPSK, W:16QAM)					
CBW(MHz) Config.			Single(MIMO) Port A1			MIMO Port A2			MIMO Port A1			MIMO Port A2		
		B	M	T	B	M	T	B	M	T	B	M	T	
2 carriers (TC3a)	1.4	1W+1L	L					869.7		893.3	869.7		893.3	
	3.0	1W+1L	L					870.5		892.5	870.5		892.5	
	5.0		W					891.6		871.4	891.6		871.4	
	5.0		W					871.4		891.6	871.4		891.6	
	5.0	1W+1L	L					891.5		871.5	891.5		871.5	
	10.0	1W+1L	L					889.0		874.0	889.0		874.0	
3 carriers (Max Adjacent)	1.4	2W+1L	L					869.7		893.3	869.7		893.3	
	5.0	2W+1L	W1					873.0		890.0	873.0		890.0	
	5.0	2W+1L	W2					878.0		885.0	878.0		885.0	
	3.0	2W+1L	L					870.5		892.5	870.5		892.5	
	5.0	2W+1L	W1					874.6		888.4	874.6		888.4	
	5.0	2W+1L	W2					879.6		883.4	879.6		883.4	
	5.0		W1					871.4		891.6	871.4		891.6	
	5.0		W2					876.4		886.6	876.4		886.6	
	5.0	2W+1L	L					881.4		881.6	881.4		881.6	
	10.0	2W+1L	L					883.9		879.1	883.9		879.1	
3 carriers (TC3a)	1.4	2W+1L	L					869.7		893.3	869.7		893.3	
	3.0	2W+1L	L					870.5		892.5	870.5		892.5	
	5.0		W1					886.6		876.4	886.6		876.4	
	5.0		W2					891.6		871.4	891.6		871.4	
	5.0		W1					871.4		891.6	871.4		891.6	
	5.0		W2					876.4		886.6	876.4		886.6	
	5.0	2W+1L	L					891.5		871.5	891.5		871.5	
	10.0	2W+1L	L					889.0		874.0	889.0		874.0	

