Appendix A **50064681 004**



Produkte Products

Page 1 of 89

Table of Contents

1.	RADIATED POWER	2
1.1	TEST DATAS	
2.	OCCUPIED BANDWIDTH	6
2.1	TEST DATAS	
2.2	TEST PLOTS	7
3.	Spurious Emissions at Antenna Terminal	25
3.1	TEST DATAS	25
4.	Spurious Radiated Emissions	73
4.1	TEST DATAS	73
5.	FREQUENCY STABILITY	83
5.1	ENVIRONMENTAL CONDITIONS	83
5.2	TEST DATAS	83
6.	PEAK-TO-AVERAGE RATIO (PAR)	8
6.1	TEST DATAS	88
6.2	TEST PLOTS	8

50064681 004



Produkte Products

Page 2 of 89

1. Radiated Power

1.1 Test Datas

GSM850

Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H/V	dB	dB	dBm	dBm
				Low Cha	nnel			
824.2	28.66	1.5	0	Н	1.5	0	27.16	38.45
824.2	29.99	1.5	0	V	1.5	0	28.49	38.45
			M	/liddle Ch	annel			
836.4	27.77	1.5	0	Н	1.5	0	26.27	38.45
836.4	28.94	1.5	0	V	1.5	0	27.44	38.45
				High Cha	innel			
848.8	27.62	1.5	0	Н	1.5	0	26.12	38.45
848.8	28.72	1.5	0	V	1.5	0	27.22	38.45

PCS1900

Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H/V	dB	dB	dBm	dBm
				Low Cha	nnel			
1850.2	18.82	1.5	0	Η	1.9	7.7	24.62	33.00
1850.2	19.70	1.5	0	V	1.9	7.7	25.50	33.00
			M	1iddle Ch	annel			
1880.0	19.81	1.5	0	Н	1.9	7.7	25.61	33.00
1880.0	20.63	1.5	0	V	1.9	7.7	26.43	33.00
				High Cha	ınnel			
1909.8	19.63	1.5	0	Η	1.9	7.7	25.43	33.00
1909.8	20.85	1.5	0	V	1.9	7.7	26.65	33.00

GPRS 850

<u> </u>								
Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H/V	dB	dB	dBm	dBm
				Low Cha	nnel			
824.2	28.87	1.5	0	Ι	1.5	0	27.37	38.45
824.2	28.83	1.5	0	٧	1.5	0	27.33	38.45
			M	1iddle Ch	annel			
836.6	26.80	1.5	0	Ι	1.5	0	25.30	38.45
836.6	27.84	1.5	0	V	1.5	0	26.34	38.45
				High Cha	nnel			
848.8	26.82	1.5	0	Η	1.5	0	25.32	38.45
848.8	27.79	1.5	0	V	1.5	0	26.29	38.45

GPRS 1900

Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H/V	dB	dB	dBm	dBm
				Low Cha	nnel			
1850.2	19.55	1.5	0	Η	1.9	7.7	25.35	33.00

50064681 004



Produkte Products

Page 3 of 89

1850.2	20.87	1.5	0	V	1.9	7.7	26.67	33.00
1000.2	20.07	1.0	N	/liddle Ch			20.07	00.00
1880.0	19.69	1.5	0	Н	1.9	7.7	25.49	33.00
1880.0	20.57	1.5	0	V	1.9	7.7	26.37	33.00
				High Cha	innel			
1909.8	19.83	1.5	0	Н	1.9	7.7	25.63	33.00
1909.8	20.50	1.5	0	V	1.9	7.7	26.30	33.00

EDGE850

_DOL000								
Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H/V	dB	dB	dBm	dBm
				Low Cha	nnel			
824.2	28.36	1.5	0	Η	1.5	0	26.86	38.45
824.2	30.35	1.5	0	٧	1.5	0	28.85	38.45
			M	liddle Ch	annel			
836.6	28.20	1.5	0	Η	1.5	0	26.70	38.45
836.6	30.18	1.5	0	٧	1.5	0	28.68	38.45
				High Cha	ınnel			
848.8	28.23	1.5	0	Η	1.5	0	26.73	38.45
848.8	30.24	1.5	0	V	1.5	0	28.74	38.45

EDGE1900

_DOL 1000								
Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H/V	dB	dB	dBm	dBm
				Low Cha	nnel			
1850.2	16.06	1.5	0	Ι	1.9	7.7	21.86	33.00
1850.2	18.03	1.5	0	V	1.9	7.7	23.83	33.00
			M	liddle Ch	annel			
1880.0	16.46	1.5	0	Ι	1.9	7.7	22.26	33.00
1880.0	18.43	1.5	0	V	1.9	7.7	24.23	33.00
				High Cha	ınnel			
1909.8	16.63	1.5	0	Ι	1.9	7.7	22.43	33.00
1909.8	18.61	1.5	0	V	1.9	7.7	24.41	33.00

WCDMA Band 5

VCDIVIA Dalid 3								
Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H/V	dB	dBd	dBm	dBm
				Low Cha	nnel			
826.4	20.99	1.5	0	Η	1.5	0	19.49	38.45
826.4	21.79	1.5	0	V	1.5	0	20.29	38.45
			M	1iddle Ch	annel			
836.6	20.99	1.5	0	Н	1.5	0	19.49	38.45
836.6	21.64	1.5	0	V	1.5	0	20.14	38.45
				High Cha	ınnel			
846.6	21.14	1.5	0	Н	1.5	0	19.64	38.45
846.6	21.85	1.5	0	V	1.5	0	20.35	38.45

HSDPA Band 5

Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H/V	dB	dBd	dBm	dBm

50064681 004



Produkte Products

Page 4 of 89

Low Channel											
826.4	20.61	1.5	0	Н	1.5	0	19.11	38.45			
826.4	21.41	1.5	0	V	1.5	0	19.91	38.45			
Middle Channel											
836.6	20.55	1.5	0	Н	1.5	0	19.05	38.45			
836.6	21.20	1.5	0	V	1.5	0	19.70	38.45			
High Channel											
846.6	20.62	1.5	0	Н	1.5	0	19.12	38.45			
846.6	21.33	1.5	0	V	1.5	0	19.83	38.45			

HSUPA Band 5

Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H/V	dB	dBd	dBm	dBm
				Low Cha	nnel			
826.4	20.63	1.5	0	Η	1.5	0	19.13	38.45
826.4	21.43	1.5	0	٧	1.5	0	19.93	38.45
			M	1iddle Ch	annel			
836.6	20.59	1.5	0	Η	1.5	0	19.09	38.45
836.6	21.24	1.5	0	٧	1.5	0	19.74	38.45
				High Cha	nnel			
846.6	20.66	1.5	0	Η	1.5	0	19.16	38.45
846.6	21.37	1.5	0	V	1.5	0	19.87	38.45

WCDMA Band 2

Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H/V	dB	dB	dBm	dBm
	Low Channel							
1852.4	16.99	1.5	0	Ι	1.9	7.7	22.79	33
1852.4	17.88	1.5	0	V	1.9	7.7	23.68	33
Middle Channel								
1880.0	16.32	1.5	0	Ι	1.9	7.7	22.12	33
1880.0	17.70	1.5	0	V	1.9	7.7	23.50	33
High Channel								
1907.6	15.46	1.5	0	Η	1.9	7.7	21.26	33
1907.6	16.01	1.5	0	V	1.9	7.7	21.81	33

HSDPA Band 2

ODI // Dana 2								
Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H/V	dB	dB	dBm	dBm
	Low Channel							
1852.4	14.61	1.5	0	Н	1.9	7.7	20.41	33
1852.4	14.03	1.5	0	٧	1.9	7.7	19.83	33
	Middle Channel							
1880.0	13.9	1.5	0	Н	1.9	7.7	19.7	33
1880.0	13.8	1.5	0	V	1.9	7.7	19.6	33
High Channel								
1907.6	13.34	1.5	0	Η	1.9	7.7	19.14	33
1907.6	13.28	1.5	0	V	1.9	7.7	19.08	33

HSUPA Band 2

50064681 004



Produkte Products

Page 5 of 89

				r				
Frequency	Substitude SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H/V	dB	dB	dBm	dBm
	Low Channel							
1852.4	15.12	1.5	0	Н	1.9	7.7	20.92	33
1852.4	15.24	1.5	0	V	1.9	7.7	21.04	33
	Middle Channel							
1880.0	14.71	1.5	0	Н	1.9	7.7	20.51	33
1880.0	14.65	1.5	0	V	1.9	7.7	20.45	33
High Channel								
1907.6	13.30	1.5	0	Н	1.9	7.7	19.10	33
1907.6	13.73	1.5	0	V	1.9	7.7	19.53	33

Note: Result = Substitude - Cable loss + Antenna Gain

50064681 004



Page 6 of 89



2. Occupied Bandwidth

2.1 Test Datas

GSM850

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
	128	824.2	251.5	338.6
GSM	190	836.6	250.91	334.8
	251	848.8	251.81	338.0
GPRS	128	824.2	249.85	335.7
	190	836.6	252.81	336.5
	251	848.8	251.45	336.5
	128	824.2	258.73	338.0
EDGE	190	836.6	256.76	338.5
	251	848.8	254.91	334.1

PCS1900

PC3 1900				
Test Mode	Channel	Frequency	99% Emission Bandwidth	26 dB Emission Bandwidth
rest ivioue	Chamer	(MHz)	(kHz)	(kHz)
	512	1850.2	248.99	334.0
GSM	661	1880.0	250.36	336.0
	810	1909.8	251.49	334.6
	512	1850.2	252.36	336.5
GPRS	661	1880.0	248.43	338.3
	810	1909.8	250.28	335.2
	512	1850.2	257.66	336.3
EDGE	661	1880.0	262.51	335.5
	810	1909.8	261.52	326.8

WCDMA Band 5

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
	4132	826.4	4.2381	4.820
WCDMA	4183	836.6	4.2141	4.826
	4233	846.6	4.1999	4.778
	4132	826.4	4.2841	5.296
HSDPA	4183	836.6	4.2476	5.016
	4233	846.6	4.2557	4.930
	4132	826.4	4.2675	4.863
HSUPA	4183	836.6	4.2417	4.896
	4233	846.6	4.2544	4.970

WCDMA Band 2

WODIWIY Baria 2							
Test Mode	Channel	Frequency 99% Emission Bandwidth	26 dB Emission Bandwidth				
1000111000	Onamor	(MHz)	(MHz)	(MHz)			
	9262	1852.4	4.2130	4.839			
WCDMA	9400	1880.0	4.2151	4.859			
	9538	1907.6	4.2200	4.891			
	9262	1852.4	4.2130	4.822			
HSDPA	9400	1880.0	4.2090	4.830			
	9538	1907.6	4.2163	4.810			
	9262	1852.4	4.1994	4.802			
HSUPA	9400	1880.0	4.2464	4.877			
	9538	1907.6	4.2488	4.893			

50064681 004

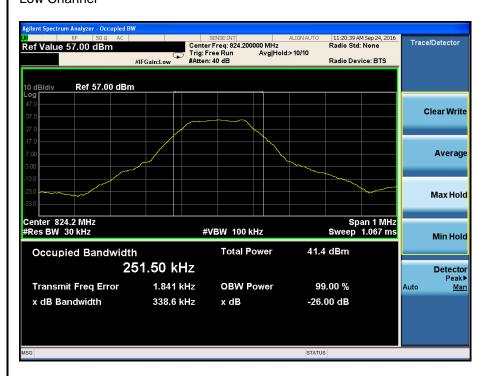


Produkte Products

Page 7 of 89

2.2 Test Plots

GSM 850 Low Channel





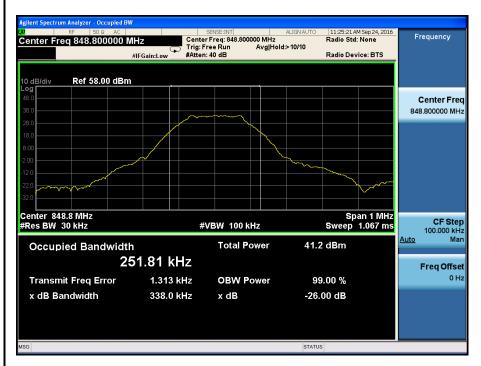
50064681 004



Produkte Products

Page 8 of 89

High channel



GPRS850 Low Channel



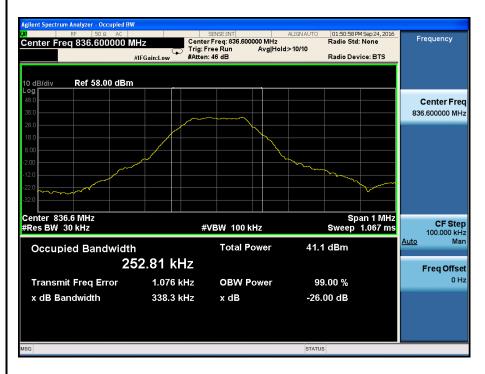
50064681 004



Produkte Products

Page 9 of 89

Middle Channel





50064681 004



Produkte Products

Page 10 of 89

EDGE850 Low Channel





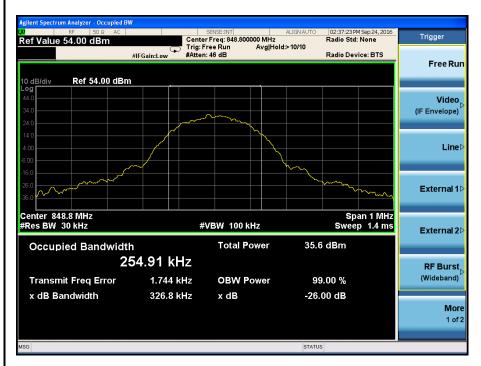
50064681 004



Produkte Products

Page 11 of 89

High Channel



PCS1900 Low Channel



50064681 004



Produkte Products

Page 12 of 89

Middle Channel





50064681 004



Produkte Products

Page 13 of 89

GPRS1900 Low Channel





50064681 004



Produkte Products

Page 14 of 89

High Channel



EDGE1900 Low Channel



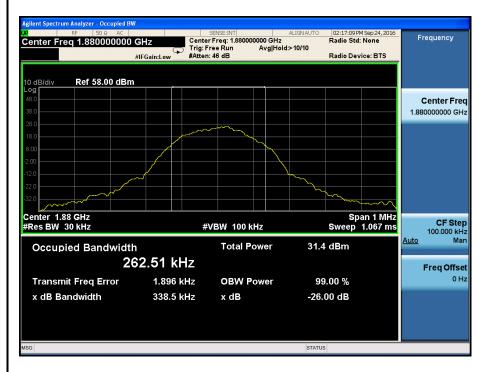
50064681 004

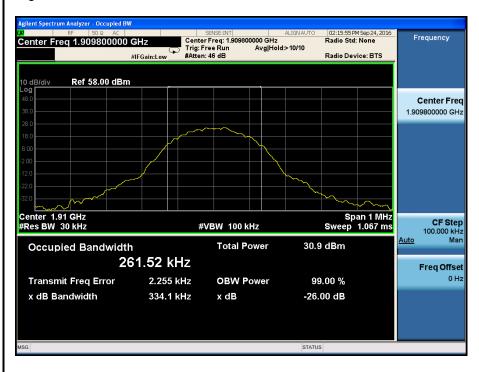


Produkte Products

Page 15 of 89

Middle Channel





50064681 004



Produkte Products

Page 16 of 89

WCDMA Band 5 Low Channel





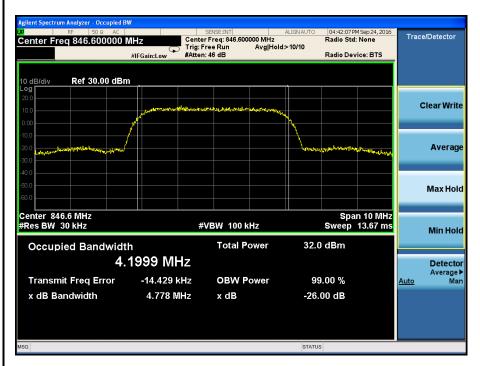
50064681 004



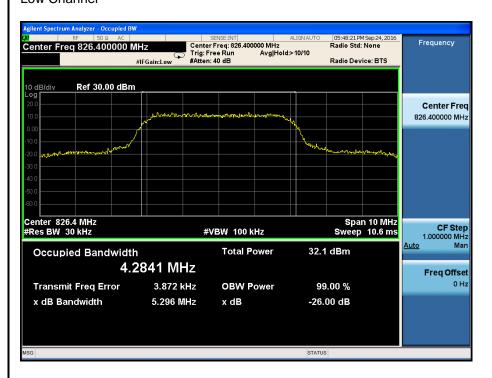
Produkte Products

Page 17 of 89

High Channel



HSDPA Band 5 Low Channel



50064681 004

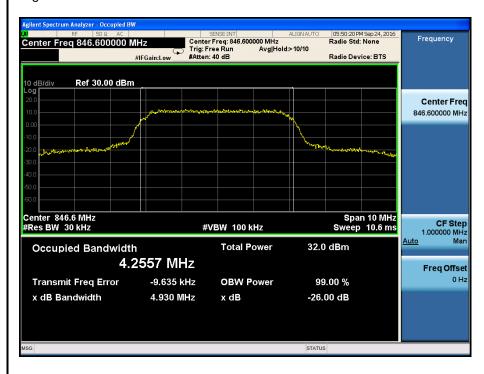


Produkte Products

Page 18 of 89

Middle Channel





50064681 004



Produkte Products

Page 19 of 89

HSUPA Band 5 Low Channel





50064681 004



Produkte Products

Page 20 of 89

High Channel



WCDMA Band 2 Low Channel



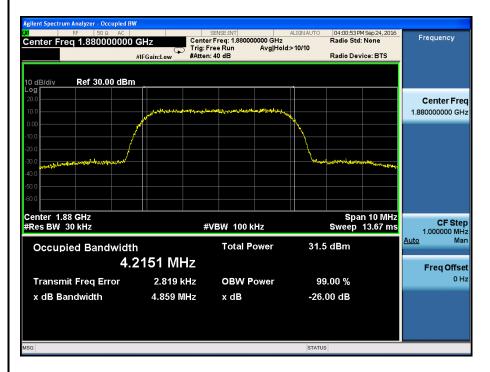
50064681 004

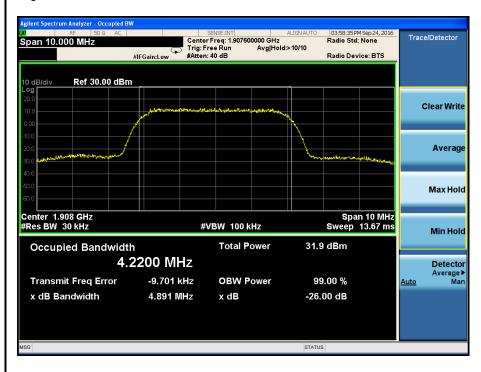


Produkte Products

Page 21 of 89

Middle Channel





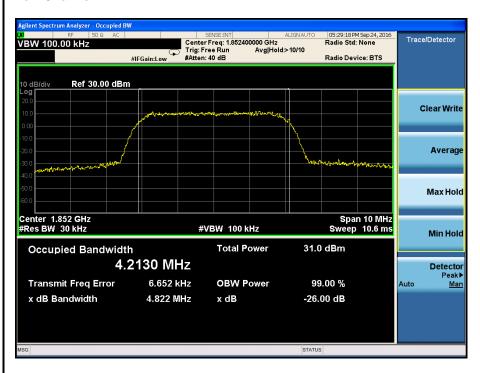
50064681 004



Produkte Products

Page 22 of 89

HSDPA Band 2 Low Channel





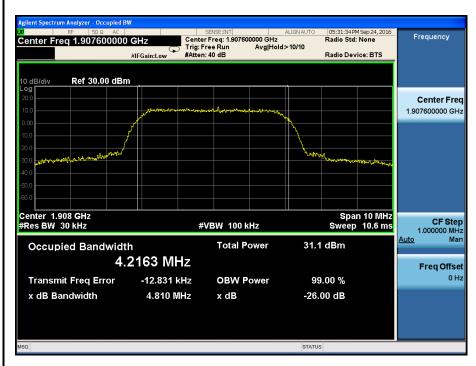
50064681 004



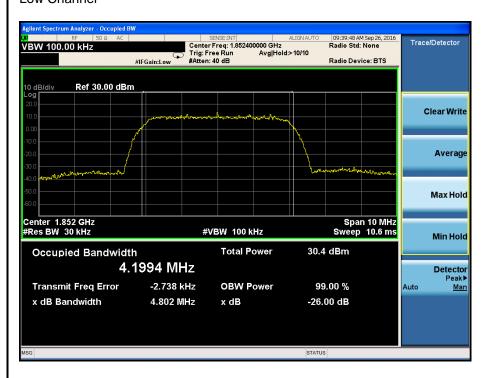
Produkte Products

Page 23 of 89

High Channel



HSUPA Band 2 Low Channel



50064681 004



Produkte Products

Page 24 of 89

Middle Channel





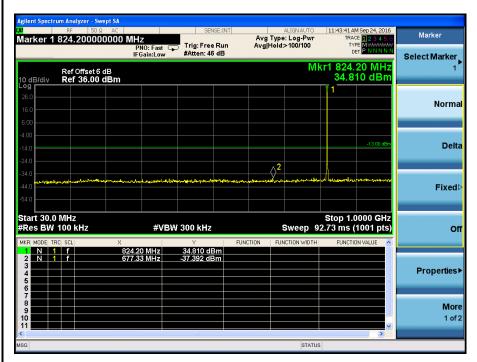


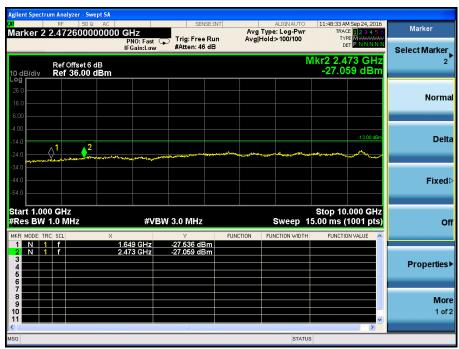
Page 25 of 89

3. Spurious Emissions at Antenna Terminal

3.1 Test Datas

GSM850 Low Channel



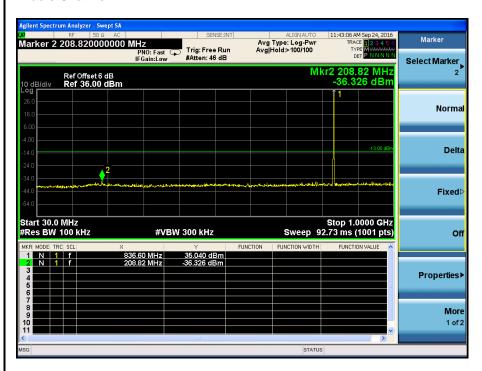


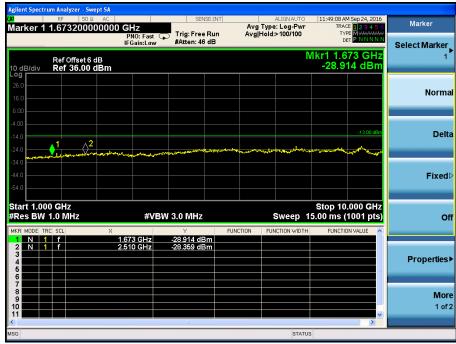
50064681 004



Produkte Products

Page 26 of 89



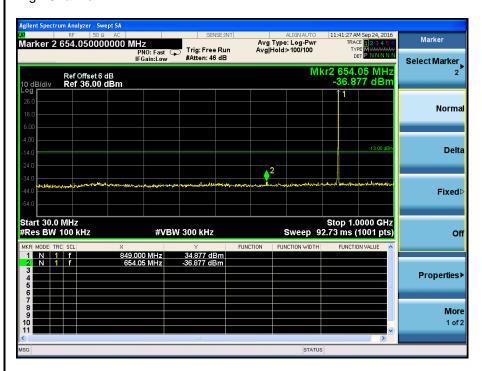


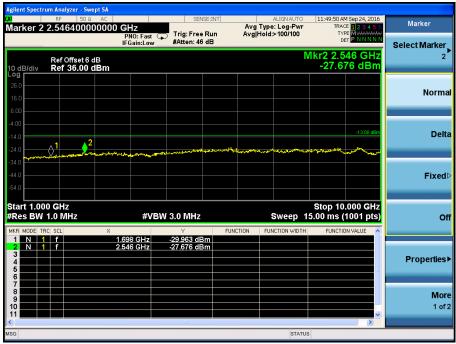
50064681 004



Produkte Products

Page 27 of 89





50064681 004

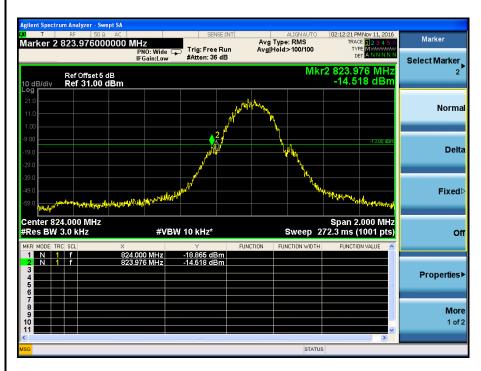


Produkte Products

Page 28 of 89

GSM850 Bandedge Spurious Emissions at Antenna Terminals

Low Band Emission



High Band Emission



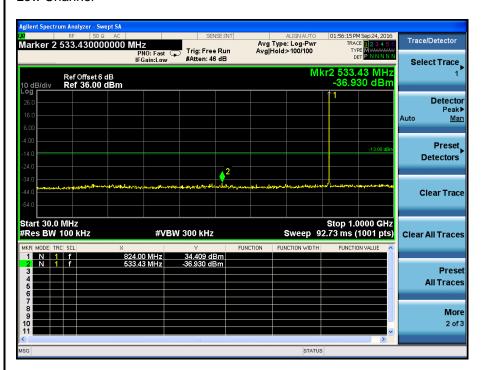
50064681 004

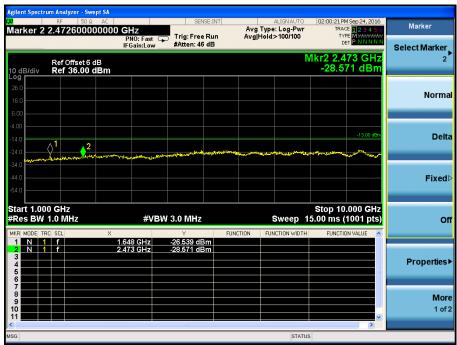


Produkte Products

Page 29 of 89

GPRS850 Low Channel



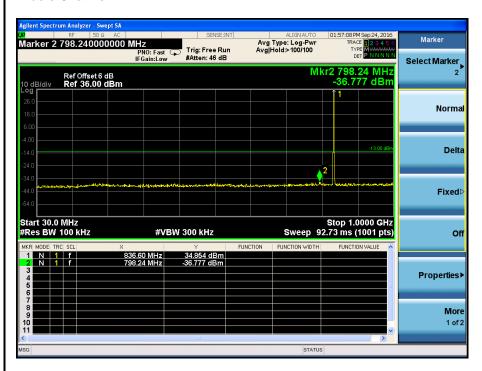


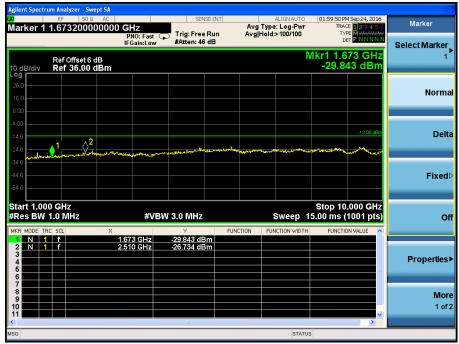
50064681 004



Produkte Products

Page 30 of 89



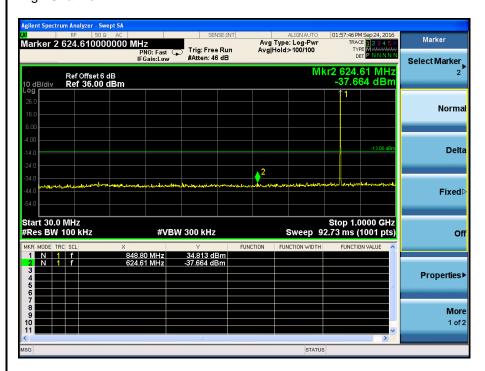


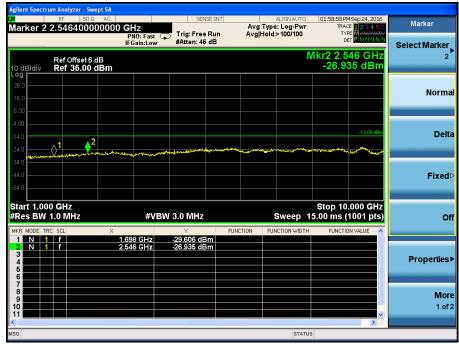
50064681 004



Produkte Products

Page 31 of 89





50064681 004

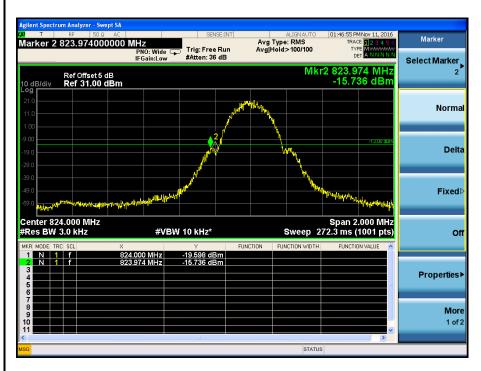


Produkte Products

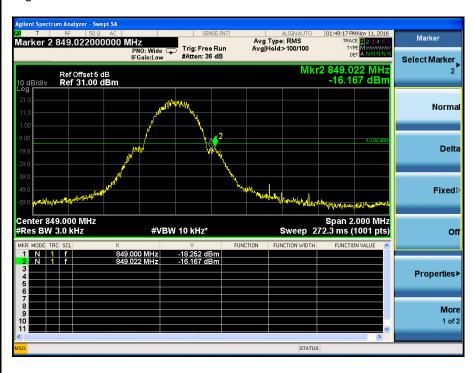
Page 32 of 89

GPRS850 Bandedge Spurious Emissions at Antenna Terminals

Low Band Emission



High Band Emission



50064681 004

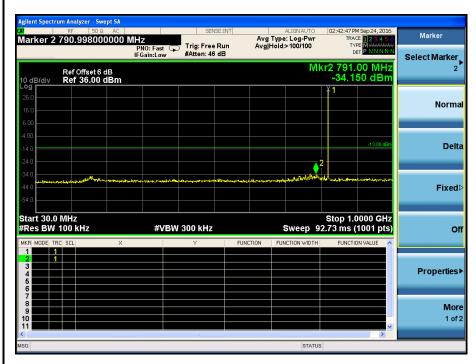


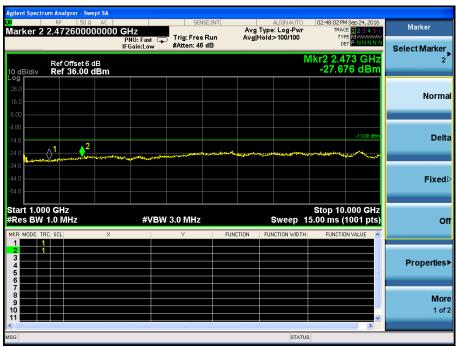
Produkte

Products

Page 33 of 89

EDGE850 Low Channel



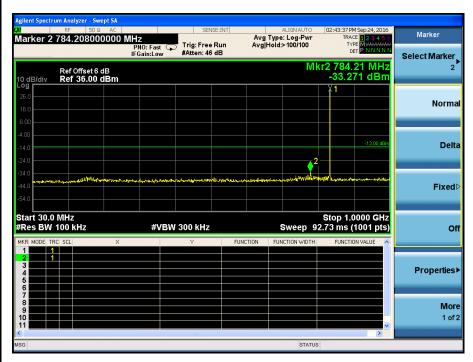


50064681 004



Produkte Products

Page 34 of 89



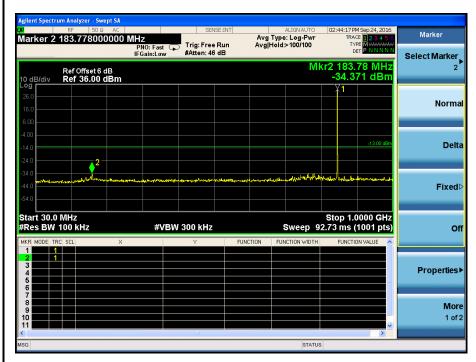


50064681 004



Produkte Products

Page 35 of 89





50064681 004

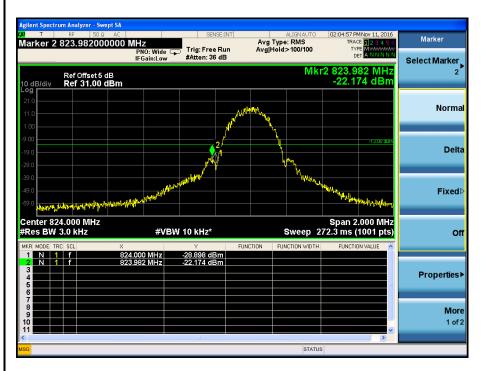


Produkte

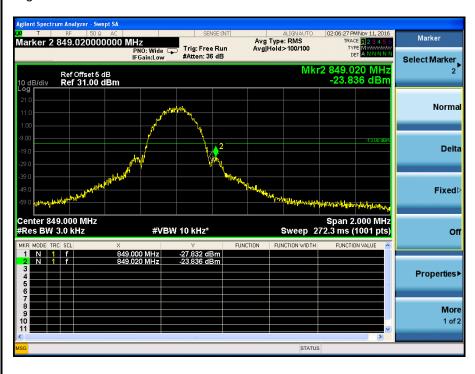
Products Page 36 of 89

EDGE850 Bandedge Spurious Emissions at Antenna Terminals

Low Band Emission



High Band Emission



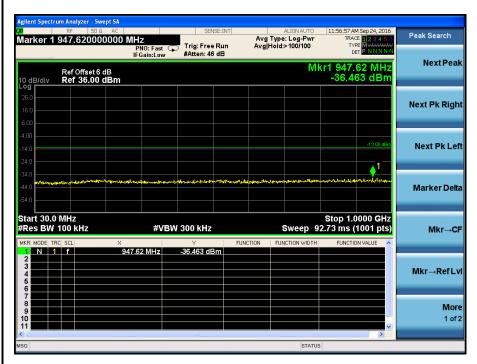
50064681 004

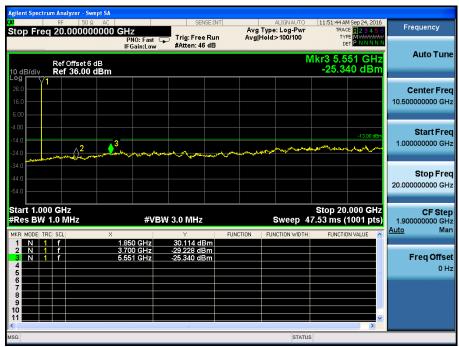


Produkte Products

Page 37 of 89

PCS1900 Low Channel



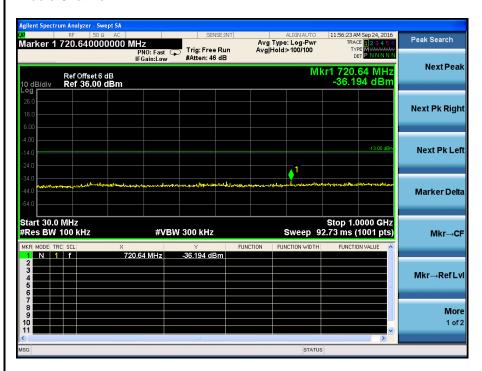


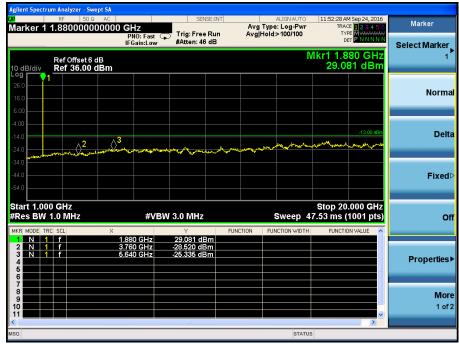
50064681 004



Produkte Products

Page 38 of 89





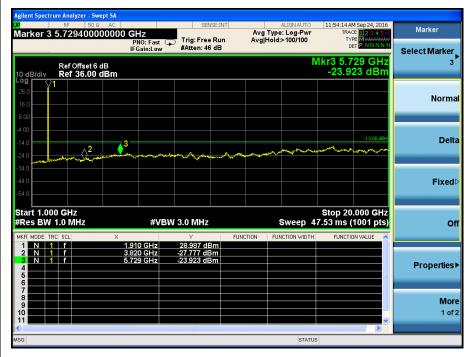
50064681 004



Produkte Products

Page 39 of 89





50064681 004

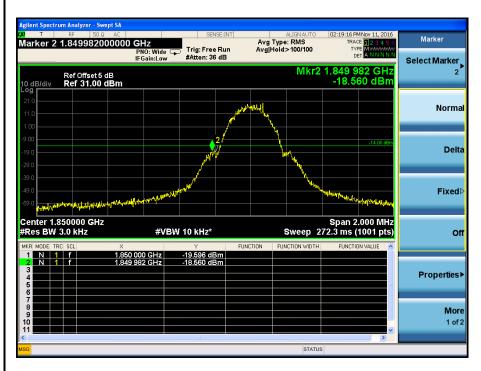


Produkte Products

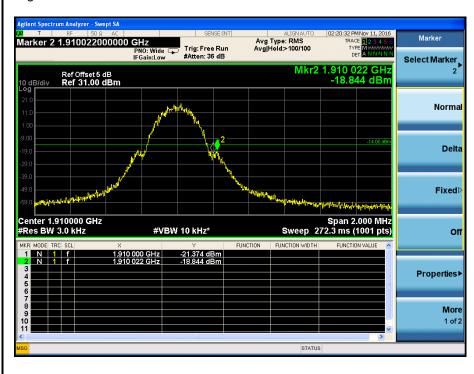
Page 40 of 89

PCS1900 Bandedge Spurious Emissions at Antenna Terminals

Low Band Emission



High Band Emission



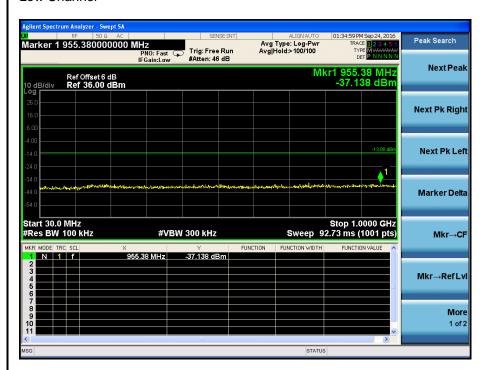
50064681 004

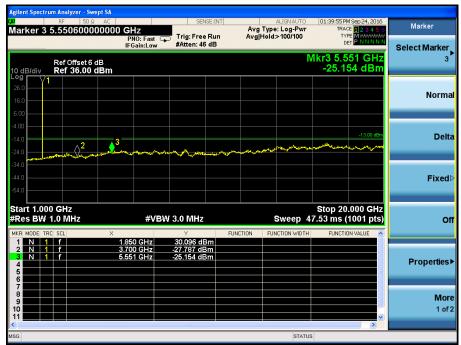


Produkte Products

Page 41 of 89

GPRS1900 Low Channel



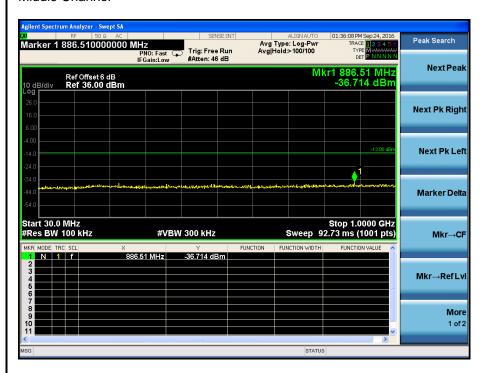


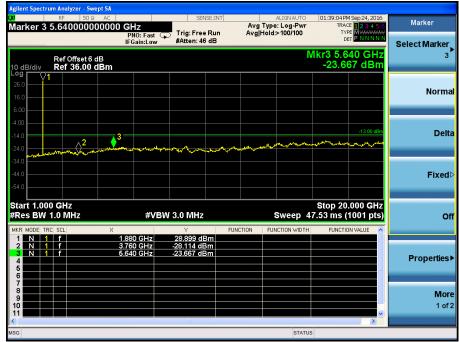
50064681 004



Produkte Products

Page 42 of 89



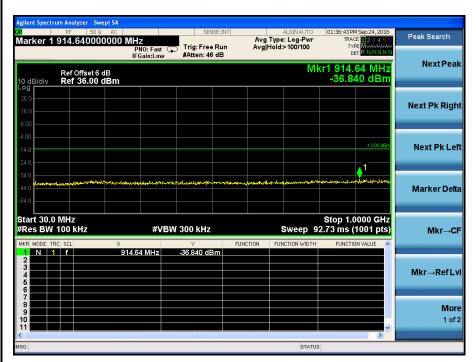


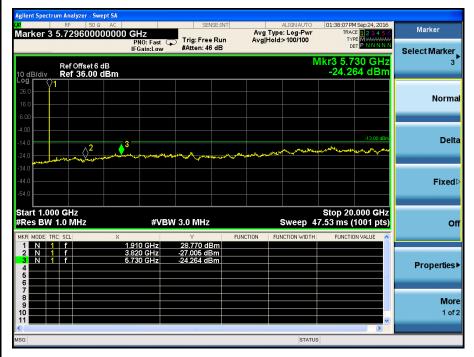
50064681 004



Produkte Products

Page 43 of 89





50064681 004

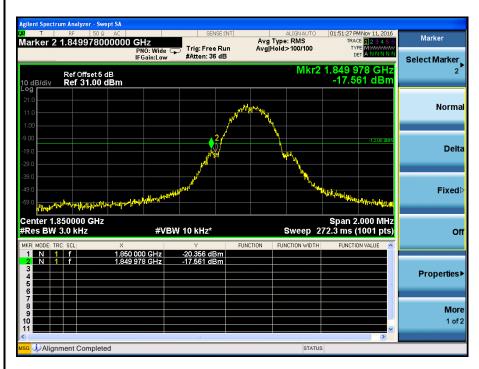


Produkte Products

Page 44 of 89

GPRS1900 Bandedge Spurious Emissions at Antenna Terminals

Low Band Emission



High Band Emission

