EMC
TEST REPORT

Report No. : EME-030435
Model No. : ZyAIR B-220
Issued Date : May 15, 2003

Applicant : ZyXEL Communications Corporation
No. 6, Innovation Rd II, Science-Based Industrial Park,
Hsin-Chu, Taiwan

Test By : Intertek Testing Services Taiwan Ltd.
No. 11, Lane 275, Ko-Nan 1 Street, Chia-Tung Li,
Shiang-Shan District, Hsinchu City, Taiwan

Project Engineer
Kevin Chen

Reviewed By
Elton Chen

Table of Contents

Summary of Tests

11Mbps Wireless USB Stick-Model: ZyAIR B-220
FCC ID: I88B220

Test	Reference	Results
Minimum 6dB Bandwidth test	15.247(a)(2)	Complies
Maximum Output Power test	15.247(b)	Complies
Radiated Spurious Emission test	15.205, 15.209	Complies
Power Spectrum Density test	15.247(d)	Complies
Power Line Conducted Emission test	15.207	Complies

1. General information

1.1 Identification of the EUT

Applicant	: ZyXEL Communications Corp.
Product	: 11Mbps Wireless USB Stick
Model No.	: ZyAIR B-220
FCC ID.	: I88B220
Frequency Range	: 2400MHz to 2483.5MHz
Channel Number	: 11
Frequency of Each Channel	: 2412MHz, 2417MHz, 2422MHz, 2427MHz, 2432MHz, 2437MHz, 2442MHz, 2447MHz, 2452MHz, 2457MHz, 2462MHz
Type of Modulation	: CCK (11Mps, 5.5Mbps), DQPSK (2Mbps), DBPSK (1Mbps)
Rated Power	: 5V
Power Cord	: N/A
Test Voltage	: 120Vac, 60Hz
Sample Received	: April 3, 2003
Test Date(s)	: April 8, 2003 to April 24, 2003

A FCC DoC report has been generated for the client.

1.2 Additional information about the EUT

The EUT is a 11Mbps Wireless USB Stick, and it's provides a flexible data communications system that user can use to access various services (navigating the Internet, email, printer services, etc.) on the wired network without additional expensive network cabling infrastructure.

We verified that the models listed as below are identical to ZyAIR B-220 (EUT), the difference model serves as marketing strategy:

Model number:
Lantech WL-555
Lantech 8800-555
B-220
Telefonica B-220

For more detail features, please refer to User's manual as file name "Installation guide.pdf"

1.3 Antenna description

The EUT uses a permanently connected antenna.

Antenna Gain : -3dBi
Antenna Type : Ceramic antenna
Connector Type : N/A

1.4 Peripherals equipment

Peripherals	Manufacturer	Product No.	Serial No.	FCC ID
PC	HP	P5661AV	SG20400774	FCC DoC Approved
Key Board	HP	SK-2502C	M011234429	FCC DoC Approved
Monitor	HP	D8897	CN14835153	ARSCM350S
Mouse	HP	M-S48a	5670990	JNZ201213
Printer	HP	C2642A	TH86K1N2ZB	FCC DoC Approved
Modem	Dynalink	V1456VQE	00V230A00051494	FCC DoC Approved

2. Test specifications

2.1 Test standard

The EUT was performed according to the procedures in FCC Part 15 Subpart C Section §15.205、§15.207、§15.209、§15.247 and ANSI C63.4/1992.

The test of radiated measurements according to FCC Part15 Section 15.33(a) had been conducted and the field strength of this frequency band were all meet limit requirement, thus we evaluate the EUT pass the specified test.

The EUT setup configurations please refer to the photo of test configuration in item.

2.2 Operation mode

Plug the EUT into PC, and turn on the power, then run the test program “ZDGonfig” under Windows OS.

The EUT was transmitted continuously during the test.

2.4 Test equipment

Equipment	Brand	Frequency range	Model No.	Series No.	Last Cal.Date
EMI Test Receiver	Rohde & Schwarz	9kHz~2.75GHz	ESCS 30	825788/014	May 24, 2002
EMI Test Receiver	Rohde & Schwarz	20Hz~26.5GHz	ESMI	825428/005	June 10, 2002
Spectrum Analyzer	Rohde & Schwarz	9kHz~30GHz	FSP 30	100137	July 10, 2002
Spectrum Analyzer	Rohde & Schwarz	20Hz~40GHz	FSEK 30	100186	Oct. 9, 2002
Horn Antenna	EMCO	1GHz~18GHz	3115	9906-5890	Sep. 19, 2002
Horn Antenna	SCHWARZBECK	14GHz~40GHz	BBHA 9170	159	June 20, 2002
Bilog Antenna	SCHWARZBECK	25MHz~1.7GHz	VULB 9160	3111	June 20, 2002
Turn Table	HDGmbH	N/A	DS 420S	420/669/01	N/A
Antenna Tower	HDGmbH	N/A	MA 240	240/573	N/A
Microwave Amplifier	Agilent	2GHz~26.5GHz	8348A	3111A00567	Dec. 20, 2002
RF Power Meter	Boonton	10kHz~100GHz	4231A	79401	May 22, 2002
Power Sensor	Boonton	30MHz~8GHz	51011-EMC	32482	May 25, 2002

Note:
1. The calibration interval of the above instruments is 12 months.

3. Minimum 6dB Bandwidth test

3.1 Operating environment

Temperature:	23	℃
Relative Humidity:	60	%
Atmospheric Pressure	1023	hPa

3.2 Test setup & procedure

The minimum 6dB bandwidth per FCC §15.247(a)(2) was measured using a 50 ohm spectrum analyzer with the resolutions bandwidth set at 100kHz, the video bandwidth set at 100kHz, and the SPAN>>RBW. The test was performed at 3 channels (lowest, middle and highest channel). The minimum 6-dB modulation bandwidth is in the following Table.

See Minimum 6dB Bandwidth plot as file name “Minimum 6dB Bandwidth plot.pdf”

3.3 Measured data of Minimum 6dB Bandwidth test results

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
Low	2412	8.377	＞500kHz
Middle	2437	8.377	＞500kHz
High	2462	8.377	＞500kHz

4. Maximum Output Power test

4.1 Operating environment

Temperature:	22	℃
Relative Humidity:	60	%
Atmospheric Pressure	1023	hPa

4.2 Test setup & procedure

The power output per FCC §15.247(b) was measured on the EUT using a 50 ohm SMA cable connected to power meter via power sensor. Power was read directly and cable loss correction (3dB) was added to the reading to obtain power at the EUT antenna terminals. The test was performed at 3 channels (lowest, middle and highest channel).

4.3 Measured data of Maximum Output Power test results

Channel	Frequency (MHz)	C.B.L. (dB)	Reading (dBm)	Power Output		Limit (W)
				(dBm)	(mW)	
Lowest	2412	3	14.85	17.85	60.95	1
Middle	2437	3	14.74	17.74	59.43	1
Highest	2462	3	14.88	17.88	61.38	1

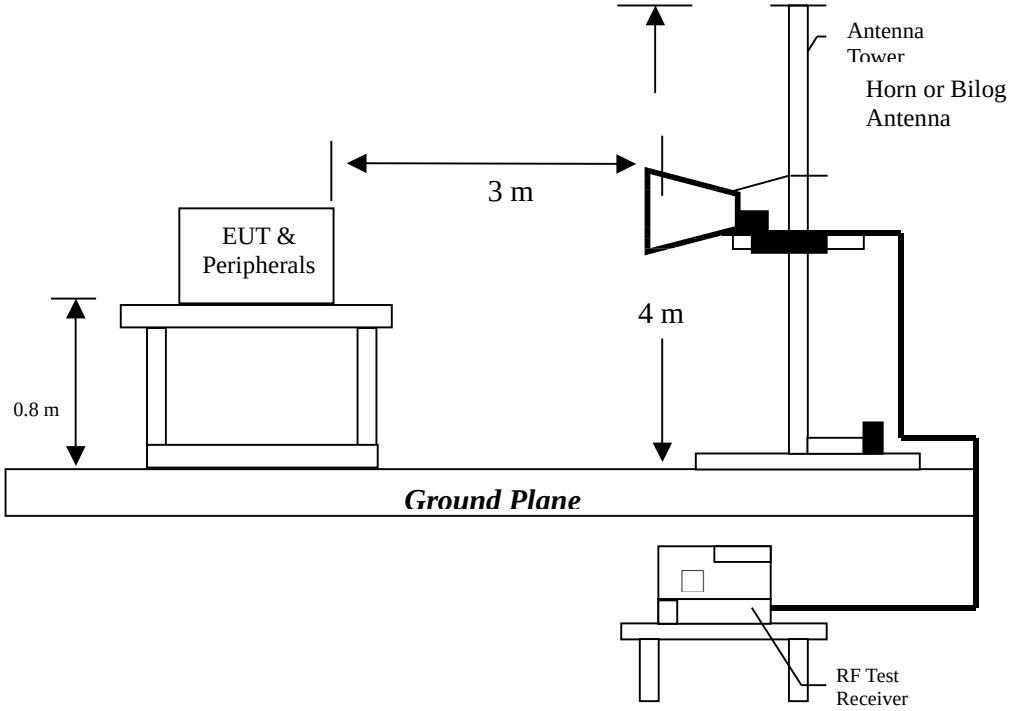
5. Radiated Emission test

5.1 Operating environment

Temperature:	23	℃
Relative Humidity:	57	%
Atmospheric Pressure	1023	hPa

5.2 Test setup & procedure

The Diagram below shows the test setup, which is utilized to make these measurements.



Radiated emissions were invested cover the frequency range from 30MHz to 1000MHz using a receiver RBW of 120kHz record QP reading, and the frequency over 1GHz using a spectrum analyzer RBW of 1MHz and 10Hz VBW record Average reading. (15.209 paragraph), the Peak reading recorded also on the report
The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter.

The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance.

5.3 Emission limits

The spurious Emission shall test through the 10th harmonic. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

Frequency (MHz)	Limits (dB μ V/m@3m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Remark:
1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

Uncertainty was calculated in accordance with NAMAS NIS 81.
Expanded uncertainty (k=2) of radiated emission measurement is ±4.98 dB.
Expanded uncertainty (k=2) of conducted emission measurement is ±2.02 dB.

5.4 Radiated spurious emission test data

5.4.1 Measurement results: frequencies equal to or less than 1 GHz

EUT : ZyAIR B-220
Test Condition : Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
220.1000	QP	V	12.47	14.93	27.40	46.00	-18.60
307.4000	QP	V	14.44	11.06	25.50	46.00	-20.50
396.7000	QP	V	17.57	11.73	29.30	46.00	-16.70
439.3000	QP	V	18.06	10.64	28.70	46.00	-17.30
484.0000	QP	V	18.86	12.54	31.40	46.00	-14.60
800.2000	QP	V	24.35	9.95	34.30	46.00	-11.70
86.3000	QP	H	8.34	24.36	32.70	40.00	-7.30
175.5000	QP	H	12.97	13.43	26.40	43.50	-17.10
220.1000	QP	H	12.47	25.23	37.70	46.00	-8.30
249.2000	QP	H	13.24	28.56	41.80	46.00	-4.20
375.3000	QP	H	16.57	18.03	34.60	46.00	-11.40
484.0000	QP	H	18.86	12.64	31.50	46.00	-14.50

Remark:
1.Corrected Level = Reading Level + Correction Factor
2.Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.

EUT : ZyAIR B-220
Test Condition : Tx at middle channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
72.7000	QP	V	7.94	23.06	31.00	40.00	-9.00
220.1000	QP	V	12.47	14.73	27.20	46.00	-18.80
307.4000	QP	V	14.44	11.56	26.00	46.00	-20.00
396.7000	QP	V	17.57	12.03	29.60	46.00	-16.40
439.3000	QP	V	18.06	11.34	29.40	46.00	-16.60
484.0000	QP	V	18.86	12.14	31.00	46.00	-15.00
86.3000	QP	H	8.34	23.16	31.50	40.00	-8.50
175.5000	QP	H	12.97	13.83	26.80	43.50	-16.70
220.1000	QP	H	12.47	25.13	37.60	46.00	-8.40
387.0000	QP	H	17.10	17.70	34.80	46.00	-11.20
484.0000	QP	H	18.86	11.74	30.60	46.00	-15.40
645.0000	QP	H	21.64	11.46	33.10	46.00	-12.90

Remark:
1.Corrected Level = Reading Level + Correction Factor
2.Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.

EUT : ZyAIR B-220
Test Condition : Tx at high channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
220.1000	QP	V	12.47	15.93	28.40	46.00	-17.60
249.2000	QP	V	13.24	13.26	26.50	46.00	-19.50
307.4000	QP	V	14.44	11.46	25.90	46.00	-20.10
396.7000	QP	V	17.57	11.13	28.70	46.00	-17.30
439.3000	QP	V	18.06	10.64	28.70	46.00	-17.30
484.0000	QP	V	18.86	11.94	30.80	46.00	-15.20
86.3000	QP	H	8.34	23.96	32.30	40.00	-7.70
220.1000	QP	H	12.47	24.63	37.10	46.00	-8.90
375.3000	QP	H	16.57	16.23	32.80	46.00	-13.20
396.7000	QP	H	17.57	17.23	34.80	46.00	-11.20
484.0000	QP	H	18.86	11.74	30.60	46.00	-15.40
645.0000	QP	H	21.64	10.36	32.00	46.00	-14.00

Remark:
1.Corrected Level = Reading Level + Correction Factor
2.Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.

5.4.2 Measurement results: frequency above 1GHz

The radiated spurious emissions at

Frequency(MHz)	Margin
9648	-3.01

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

EUT : ZyAIR B-220
Test Condition : Tx at low channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
4824	PK	V	32.496	35.47	-	-	74	-
4824	AV	V	32.496	35.47	-	-	54	-
7236	PK	V	34.32	38.42	-	-	74	-
7236	AV	V	34.32	38.42	-	-	54	-
9648	PK	V	35.808	41.35	52.668	58.21	74	-15.79
9648	AV	V	35.808	41.35	45.448	50.99	54	-3.01
12060	PK	V	35.4	43.38	-	-	74	-
12060	AV	V	35.4	43.38	-	-	54	-
4824	PK	H	32.496	35.47	-	-	74	-
4824	AV	H	32.496	35.47	-	-	54	-
7236	PK	H	34.32	38.42	-	-	74	-
7236	AV	H	34.32	38.42	-	-	54	-
9648	PK	H	35.808	41.35	47.458	53	74	-21
9648	AV	H	35.808	41.35	39.748	45.29	54	-8.71
12060	PK	H	35.4	43.38	-	-	74	-
12060	AV	H	35.4	43.38	-	-	54	-

Remark:
1.Corrected Level = Reading Level + Correction Factor－Preamp
2.Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.

The radiated spurious emissions at

Frequency(MHz)	Margin
9748	-2.68

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

EUT : ZyAIR B-220
Test Condition : Tx at middle channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
4874	PK	V	32.496	35.47	-	-	74	-
4874	AV	V	32.496	35.47	-	-	54	-
7311	PK	V	34.32	38.42	46.6	50.7	74	-23.3
7311	AV	V	34.32	38.42	37.11	41.21	54	-12.79
9748	PK	V	35.808	41.35	53.048	58.59	74	-15.41
9748	AV	V	35.808	41.35	45.778	51.32	54	-2.68
12185	PK	V	35.4	43.38	-	-	74	-
12185	AV	V	35.4	43.38	-	-	54	-
4874	PK	H	32.496	35.47	-	-	74	-
4874	AV	H	32.496	35.47	-	-	54	-
7311	PK	H	34.32	38.42	-	-	74	-
7311	AV	H	34.32	38.42	-	-	54	-
9748	PK	H	35.808	41.35	46.718	52.26	74	-21.74
9748	AV	H	35.808	41.35	38.108	43.65	54	-10.35
12185	PK	H	35.4	43.38	-	-	74	-
12185	AV	H	35.4	43.38	-	-	54	-

Remark:
1.Corrected Level = Reading Level + Correction Factor－Preamp
2.Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.

EUT : ZyAIR B-220
Test Condition : Tx at high channel

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV)	Limit @ 3 m (dBuV)	Margin (dB)
4924	PK	V	32.496	35.47	-	-	74	-
4924	AV	V	32.496	35.47	-	-	54	-
7386	PK	V	34.32	38.42	47.79	51.89	74	-22.11
7386	AV	V	34.32	38.42	38.68	42.78	54	-11.22
9848	PK	V	35.919	41.55	50.839	56.47	74	-17.53
9848	AV	V	35.919	41.55	42.089	47.72	54	-6.28
12310	PK	V	35.315	43.75	-	-	74	-
12310	AV	V	35.315	43.75	-	-	54	-
4924	PK	H	32.496	35.47	-	-	74	-
4924	AV	H	32.496	35.47	-	-	54	-
7386	PK	H	34.32	38.42	-	-	74	-
7386	AV	H	34.32	38.42	-	-	54	-
9848	PK	H	35.919	41.55	46.489	52.12	74	-21.88
9848	AV	H	35.919	41.55	35.589	41.22	54	-12.78
12310	PK	H	35.315	43.75	-	-	74	-
12310	AV	H	35.315	43.75	-	-	54	-

Remark:
1.Corrected Level = Reading Level + Correction Factor－Preamp
2.Correction Factor = Antenna Factor + Cable Loss
3. “-“ means the emission is below the noise floor.

6. Power Spectrum Density test

6.1 Operating environment

Temperature:	23	℃
Relative Humidity:	57	%
Atmospheric Pressure	1023	hPa

6.2 Test setup & procedure

The power spectrum density per FCC §15.247(d) was measured from the antenna port of the EUT using a 50ohm spectrum analyzer with the resolution bandwidth set at 3kHz, the video bandwidth set at 10kHz, a span of 1.5 MHz, and the sweep time set at 500 seconds. Power Density was read directly and cable loss (3dB)/external attenuator (6dB) correction was added to the reading to obtain power at the EUT antenna terminals. The test was performed at 3 channels (lowest, middle and highest channel). The Power Spectral Density measured result is in the following table.

See Power Spectrum Density plot as file name “Power Spectrum Density plot.pdf”

6.3 Measured data of Power Spectrum Density test results

Channel	Frequency (MHz)	Measured level (dBm)	Limit (dBm)
Low	2412.26	-4.58	8
Middle	2437.21	-4.51	8
High	2462.26	-4.13	8

7. Emission on the band edge §FCC 15.247(C)

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

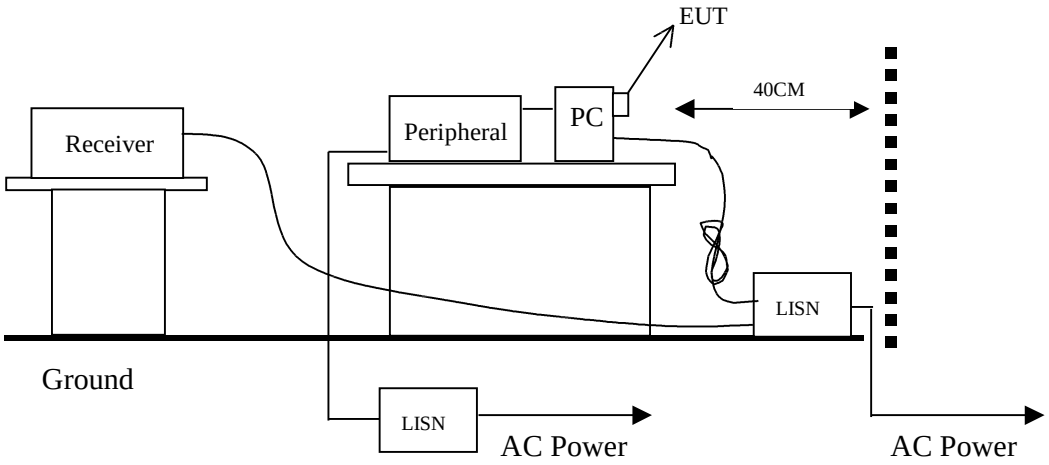
See band-edge plot as file name “Band-edge plot.pdf”.

8. Power Line Conducted Emission test §FCC 15.207

8.1 Operating environment

Temperature:	23	℃
Relative Humidity:	60	%
Atmospheric Pressure	1023	hPa

8.2 Test setup & procedure



The EUT are connected to the main power through a line impedance stabilization network (LISN). This provides a 50 ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.
Both sides (Line and Neutral) of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4/1992 on conducted measurement. The AC power conducted emissions was invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz. (15.207 paragraph)

See Power Line Conducted Emission plot as file name “Power Line Conducted Emission plot.pdf”.

Emission Limit

Freq. (MHz)	Conducted Limit (dBuV)	
	Q.P.	Ave.
0.15~0.50	66 – 56*	56 – 46*
0.50~5.00	56	46
5.00~30.0	60	50

*Decreases with the logarithm of the frequency.

8.3 Power Line Conducted Emission test data

(1) Line

EUT : ZyAIR B-220

Test Condition : Tx at low channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.23800	28.60	62.17	27.40	52.17	-33.57	-24.77
0.35000	29.10	58.96	27.20	48.96	-29.86	-21.76
4.95800	23.10	56.00	16.40	46.00	-32.90	-29.60
6.92600	25.50	60.00	18.80	50.00	-34.50	-31.20
13.97400	35.90	60.00	33.20	50.00	-24.10	-16.80
19.02200	29.50	60.00	23.50	50.00	-30.50	-26.50

(2) Neutral

EUT : ZyAIR B-220

Test Condition : Tx at low channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.23800	26.50	62.17	22.40	52.17	-35.67	-29.77
0.35000	25.30	58.96	16.20	48.96	-33.66	-32.76
6.71800	21.10	60.00	15.50	50.00	-38.90	-34.50
12.91800	25.50	60.00	22.90	50.00	-34.50	-27.10
16.55800	27.00	60.00	24.50	50.00	-33.00	-25.50
19.02200	29.10	60.00	23.00	50.00	-30.90	-27.00

Remark:

1. 1. The reading value included cable loss and LISN factor.
2. Uncertainty was calculated in accordance with NAMAS NIS 81.
   Expanded uncertainty (k=2) of conducted emission measurement is ±2.6 dB.

(1) Line

EUT : ZyAIR B-220

Test Condition : Tx at middle channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.19800	28.10	63.69	26.60	53.69	-35.59	-27.09
0.23800	31.30	62.17	30.10	52.17	-30.87	-22.07
0.35000	31.80	58.96	30.10	48.96	-27.16	-18.86
6.92600	28.60	60.00	19.80	50.00	-31.40	-30.20
13.50200	35.00	60.00	32.20	50.00	-25.00	-17.80
19.02200	28.50	60.00	22.60	50.00	-31.50	-27.40

(2) Neutral

EUT : ZyAIR B-220

Test Condition : Tx at middle channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.23800	27.10	62.17	22.30	52.17	-35.07	-29.87
0.35000	26.50	58.96	19.50	48.96	-32.46	-29.46
1.87800	23.20	56.00	19.90	46.00	-32.80	-26.10
6.68600	21.40	60.00	15.00	50.00	-38.60	-35.00
13.50200	25.50	60.00	22.50	50.00	-34.50	-27.50
19.02200	29.10	60.00	23.00	50.00	-30.90	-27.00

Remark:

1. 1. The reading value included cable loss and LISN factor.
2. Uncertainty was calculated in accordance with NAMAS NIS 81.
   Expanded uncertainty (k=2) of conducted emission measurement is ±2.6 dB.

(1) Line

EUT : ZyAIR B-220

Test Condition : Tx at high channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.19800	28.00	63.69	26.50	53.69	-35.69	-27.19
0.23800	31.20	62.17	30.00	52.17	-30.97	-22.17
0.35000	31.80	58.96	30.00	48.96	-27.16	-18.96
3.87800	21.20	56.00	14.10	46.00	-34.80	-31.90
6.92600	29.20	60.00	20.10	50.00	-30.80	-29.90
13.73400	33.10	60.00	29.30	50.00	-26.90	-20.70

(2) Neutral

EUT : ZyAIR B-220

Test Condition : Tx at high channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Reading (dB μ V) AV	Limit (dB μ V) AV	Margin (dB)	
					QP	AV
0.23800	27.20	62.17	22.30	52.17	-34.97	-29.87
0.35000	26.50	58.96	19.50	48.96	-32.46	-29.46
1.87800	23.30	56.00	19.90	46.00	-32.70	-26.10
3.99000	23.70	56.00	17.40	46.00	-32.30	-28.60
6.71800	22.10	60.00	15.50	50.00	-37.90	-34.50
17.84600	25.60	60.00	21.30	50.00	-34.40	-28.70

Remark:

1. 1. The reading value included cable loss and LISN factor.
2. Uncertainty was calculated in accordance with NAMAS NIS 81.
   Expanded uncertainty (k=2) of conducted emission measurement is ±2.6 dB.