RADIO TEST REPORT

ETSI EN301 489-1 V1.5.1 (11-2004)
ETSI EN301 489-17 V1.2.1 (08-2002)

Product	***: Compex Wireless-G Network Mini-PCI Adapter***
Applicant	***: Compex Inc.***
Trade Name	***: Compex***
Model	***: iWavePort WLM54G1A / iWavePort WLM54G1B***
Sample Received Date	***: 04/07/2005***
Report No.	***: MLT0504EMC011-02***

Prepared by : Country Huang *Approved by :* Roger Chen

Country Huang *Roger Chen*

Test By

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Table of Contents :

I. General of EUT

1.1 Identification of EUT

Equipment : Compex Wireless-G Network Mini-PCI Adapter

Applicant : Compex Inc.
840 Columbia Street, Suite B, Brea,
CA92821, USA

Manufacturer : Compex Inc.
840 Columbia Street, Suite B, Brea,
CA92821, USA

Model No : iWavePort WLM54G1A / iWavePort WLM54G1B

1.2 Technical data of EUT

Type of Modulation	: Direct Sequence Spread Spectrum
Type of Antenna	: 1/4 λDIOPLE Antenna
Antenna Gain (dBi)	: 2.0 dBi
Frequency of Channel	: 13CH
Operating Frequency	: 2412MHz~2472MHz
Output Power	: 13dBm
Input Rating	: Powered By PC (Notebook)

1.3 Standard Test Conditions

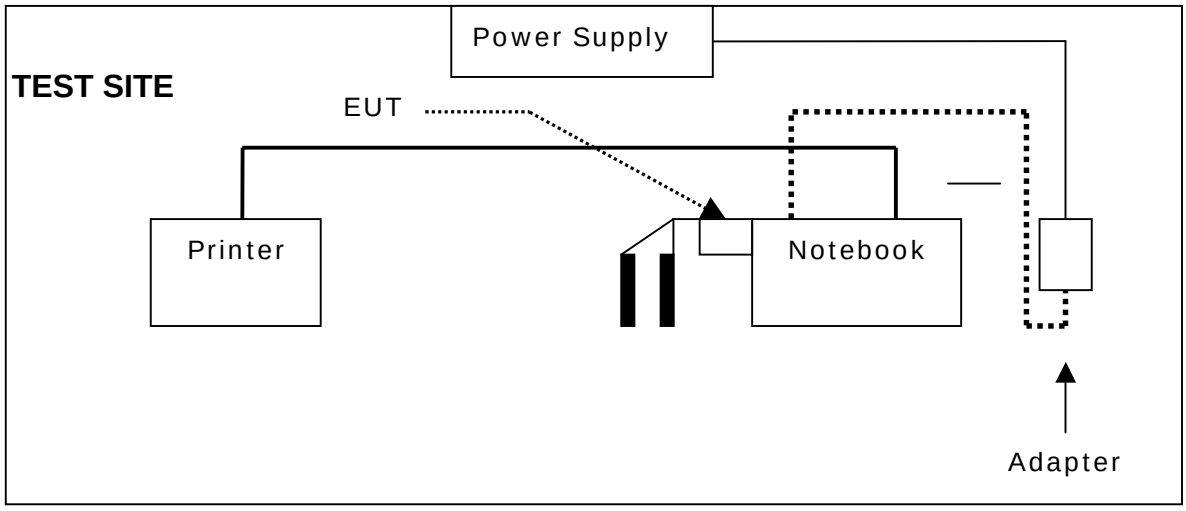
Temperature	: +21°C ~ +28 *Degrees Celsius*
Relative Humidity	: 60% ~ 85%
Supply Voltage	: 230VAC

1.4 Configuration of EUT

This Compex Wireless-G Network Mini-PCI Adapter *of*

Item	*Component*	*Manufacturer*	*Model*
1.	Computer	Compaq	17XL360
2.	Printer	PANASONIC	KX-P1080I
3.	Monitor	IBM	10L6145 030

1.5 Configuration of System Under Test



During testing the EUT(Wireless Adapter) 's Mini PCI interface via a PCMCIA to mini-PCI extender connected to the Notebook, and the printer connected to Notebook' printer port.

1.6 Difference Description

(Model No.: iWavePort WLM54G 1A & iWavePort WLM54G 1B)

1. The circuit & Layout for these two models are identical.
2. Only main chip (U1) is different , the other components are identical.
3. The iWavePort WLM54G 1A supports 802.11B & 802.11G.
4. The iWavePort WLM54G 1B supports 802.11B & 802.11G & Super G.

II. Evaluation

2.1 Summary Of Tests

ETSI EN 301 489-1(08-2000) & 301 489-17 (09-2000)		
According to	Results	Remarks
EN 55022: 1998 3RD Radiated Emission (Class B)	Pass	(2)
EN 55022: 1998 3RD Conducted Emission (Class B)	Pass	
EN61000-3-2 : 2000 Harmonic Current Emission	Pass	(3)
EN61000-3-3 : 1995 +A1:2001 Voltage Fluctuations & Flick	Pass	(3)
EN61000-4-2 : 1995 RF Electromagnetic Field	Pass	(1)
EN61000-4-3 : 1996 Electrostatic Discharge	Pass	(1)
EN61000-4-4 : 1995 Fast Transients Command Mode	Pass	(1)
EN61000-4-5 : 1995 Surge Immunity Test	Pass	(1)
EN61000-4-6 : 1996 RF Command Mode	Pass	(1)
EN61000-4-11 : 1994 Voltage Dips & Interruptions	Pass	(1)
Classification of EUT	☐Transmitter ☐Receiver ☑Transceiver	
	☑Base Station Equipment ☐Mobile Equipment for Vehicular Use ☐Hand-held Portable Equipment ☐Plug-In radio device With Host System	

Note: (1) The EUT has two model numbers, the testing report only record the worst case (iWavePort WLM54G 1B).

(2) The iWavePort WLM54G 1A(CH01/CH06/CH11) & iWavePort WLM54G 1B(CH01/CH06/CH11) have been pretested.

For under 1GHz's Radiated Emissions, the testing report only record the worst cases which are WLM54G 1B(802.11B 's CH01) &WLM54G 1B(802.11 SuperG).

(3) The EUT has two model numbers, the testing report only record the worst case (iWavePort WLM54G 1A's802.11g CH01)&
(iWavePort WLM54G 1B's Super g CH06)

ETSI EN 301 489-1 V.1.5.1 (11-2004)
Electromagnetic Compatibility and Radio Spectrum Matters (ERM);
Electromagnetic Compatibility (EMC) and Radio equipment and Services;
Part1 : Common Technical Requirements
ETSI EN 301 489-17 V.1.2.1 (08-2002)
Electromagnetic Compatibility and Radio Spectrum Matters (ERM);
Electromagnetic Compatibility (EMC) and Radio radio equipment and Services;
Part17 : Specific Conditions for Wideband Data and HIPERLAN equipment

Remark : The test results only relate to the submitted test sample specified above.

2.2 Performance Criteria

Performance Table (ETSI 301 489-17)		
Criteria	During Test	After Test
A	Shall operate as intended May show degradation of performance (note 1) Shall be no loss of function Shall be no unintentional transmissions	Shall operate as intended Shall be no degradation of performance (note 2) Shall be no loss of function Shall be no loss of stored data or user programmable functions
B	May show loss of function (one or more) May show degradation of performance (note 1) No unintentional transmissions	Functions shall be self-recoverable Shall operate as intended after recovering Shall be no degradation of performance (note 2) Shall be no loss of stored data or user programmable functions
C	May be loss of function (one or more	Functions shall be recoverable by the operator Shall operate as intended after recovering Shall be no degradation of performance (note 2)
NOTE 1:	Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.	
NOTE 2:	No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.	

Performance Criteria for Continuous Phenomena Applied to Transmitters(CT)
The Performance Criteria A shally.
Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does nor occur.
In system using acknowledgement signals, it is recognized that an ACKnowl-edgement (ACK)or NotACKnowledgement (NACK) transmission may occur, and step should be taken to ensure that ant transmission resulting from the application of the test is correctly interpreted.

Performance criteria for Transient phenomena applied to Transmitters (TT)
The Performance Criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply.
Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does notoccur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resultingfrom the application of the test is correctly interpreted.

Performance criteria for Continuous phenomena applied to Receivers (CR)
The Performance Criteria A shall apply.
Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted. systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps

Performance criteria for Transient phenomena applied to Receivers (TR)
The Performance Criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration for which performance criteria C shall apply.
Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

2.3 Applicability Overview Table

2.3.1 Applicability Overview Table (Emission)

ETSI EN 301 489					
Phenomenon	Application	Equipment Test Requirement			Reference Subclause In the Present Document
		Radio and Ancillary Equipment for Fixed Use (Base Station Equipment)	Radio and Ancillary Equipment for Vehicular use (Mobile Equipment)	Radio and Ancillary Equipment for Portable use (Portable Equipment)	
Radiated Emission	Enclosure of Ancillary Equipment	Applicable for Stand Alone Equipment	Applicable for Stand Alone Equipment	Applicable for Stand Alone Equipment	8.2
Conducted Emission	DC Power input/output Port	Applicable	Applicable	Not Applicable	8.3
Conducted Emission	AC Mains input/output Port	Applicable	Not Applicable	Not Applicable	8.4
Harmonic Current Emission	AC Mains Input Port	Applicable	Not Applicable	Not Applicable	8.5
Voltage Fluctuation and Flicker	AC Mains Input Port	Applicable	Not Applicable	Not Applicable	8.6

2.3.2 Applicability Overview Table (Immunity)

ETSI EN 301 489					
Phenomenon	Application	Equipment Test Requirement			Reference Subclause In the Present Document
		Radio and Ancillary Equipment for Fixed Use (Base Station Equipment)	Radio and Ancillary Equipment for Vehicular use (Mobile Equipment)	Radio and Ancillary Equipment for Portable use (Portable Equipment)	
RF Electrom-agnetic Field 80MHz~1GHz	Enclosure	Applicable	Applicable	Applicable	9.2
Electrostatic Discharge	Enclosure	Applicable	Applicable	Applicable	9.3
Fast Transients Common Mode	Signal,Tele. Port and Control Port DC and AC Power Port	Applicable	Not Applicable	Not Applicable	9.4
RF Common Mode 0.15~80 MHz	Signal,Tele. Port and Control Port DC and AC Power Port	Applicable	Applicable	Not Applicable	9.5
Transients and Surges	DC power Input Port	Not Applicable	Applicable	Not Applicable	9.6
Voltage Dips And Interruption	AC Mains Input Port	Applicable	Not Applicable	Not Applicable	9.7
Surges Line to Line Line to GND	AC Mains Input Port, Tele. Port	Applicable	Not Applicable	Not Applicable	9.8

III. Conducted/Radiated Emissions Requirements

3.1 General:

The conducted emissions test from 150KHz to 30MHz is employed to the power line through a LISN(Line Impedance Stabilization Network). The limits are 66-56dBuV(QP) / 56-46dBuV(Average), decreases linearly with the logarithm for 0.15-0.50MHz; 56dBuV(QP)/ 46dBuV(Average) for 0.50MHz-5MHz; 60dBuV(QP) / 50dBuV(Average) for 5-30MHz.

The conducted emissions test from 150KHz to 30MHz is employed to the telecommunication port through a ISN(Impedance Stabilization Network) or Current Probe . The Voltage limits are 84-74dBuV(QP) / 74-64dBuV(Average), decreases linearly with the logarithm for 0.15-0.50MHz; 74dBuV(QP)/ 64dBuV(Average) for 0.50MHz-30MHz; Current limits are 40-30dBuV(QP) / 30-20dBuV(Average), decreases linearly with the logarithm for 0.15-0.50MHz; 30dBuV(QP)/ 20dBuV(Average) for 0.50MHz-30MHz;

The radiated emissions test is made at a 10 meter open site from 30MHz to 1000MHz. The object of this test is to investigate the emissions from the EUT in order to suppress interference to the environment. The limits are 30dBuV(QP) for 30-230MHz; 37dBuV(QP) for 230-1000MHz.

3.2 Test Specifications:

Requirement	Comment	Result (Pass/Fail)
EN 55022 Class B	Conducted Emission 0.15-30 MHz (Main Power Port)	Pass
EN 55022 Class B	Radiated Emission 30-1000 MHz	Pass

3.3 Setup:

The EUT is placed on a support of non-metallic, the height of which is 0.8m above the ground. For the conducted test, a LISN is used as a matching network to the measuring receiver. The EUT is rotated and the antenna's height vary between 1m and 4m for horizontal and vertical polarization to obtain the maximum reading during the radiated test.

3.4 Test Equipment List:

A. EMCO 3825/2 LISN (S/N:2654)
B. EMCO 3825/2 LISN (S/N:2658)
C. Schaffner T411 ISN (S/N:A432)
D. HP 8591EM 9KHZ-1.8GHz Spectrum Analyzer (S/N:73412A00110)
E. Shielded Room (MLT-SR1)
F. HP 8591EM 9KHz-1.8GHz Spectrum Analyzer (S/N:73412A00230)
G. HP 8447D Pre Amplifier (S/N:2944A08954)
H. EMCO 3142 Biconilog Antenna (S/N:1184)
I. HP 9872B Plotter (S/N:20447A03436)
J. R&S ESH3 Test Receiver (S/N:892108/025)
K. R&S ESVP Test Receiver (S/N:881121/01)

3.5 Test condition:

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

3.6 Conducted Emissions Limits (Mains ports) :

Frequency range (MHz)	*Limits (dBuV)*	
	Quasi-peak	*Average*
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5.0	56	46
5.0 to 30	60	50

3.7 Radiated Emissions Limits:

Frequency range (MHz)	*Quasi-peak(dBuV)*
30 to 230	30
230 to 1000	37

3.8 Measurement Data Of Conducted Emissions:

3.8.1 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11b (CH01)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.17	44.94	64.58	--	54.58
	0.21	43.27	63.09	--	53.09
	0.36	40.45	58.71	--	48.71
	0.51	39.01	56	--	46
	0.58	38.27	56	--	46
	5.30	42.13	60	--	50
	13.06	39.33	60	--	50
L2	0.16	45.22	65.06	--	55.06
	0.21	45.22	62.93	--	52.93
	0.28	41.92	60.73	--	50.73
	0.42	38.84	57.33	--	47.33
	0.49	40.29	56.02	--	46.02
	5.30	40.87	60	--	50
	16.66	40.66	60	--	50

Notes : *1.L1*: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.2 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11b (CH07)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.17	44.63	64.91	--	54.91
	0.22	42.91	62.82	--	52.82
	0.35	38.86	58.82	--	48.82
	0.58	34.47	56	--	46
	0.94	34.48	56	--	46
	5.30	42.18	60	--	50
	13.13	39.15	60	--	50
L2	0.21	42.58	63.01	--	53.01
	0.36	38.82	58.73	--	48.73
	0.49	37.32	56.02	--	46.02
	0.65	37.05	56	--	46
	0.94	35.49	56	--	46
	5.30	40.35	60	--	50
	16.23	40.27	60	--	50

Notes : *1.L1*: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
3.The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.3 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11b (CH10)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.21	44.33	62.93	--	52.93
	0.28	43.18	60.58	--	50.58
	0.36	42.28	58.73	--	48.73
	0.50	40.81	56	--	46
	0.94	35.14	56	--	46
	5.25	39.26	60	--	50
	13.55	39.15	60	--	50
L2	0.16	45.82	65.41	--	55.41
	0.21	43.48	62.93	--	52.93
	0.28	41.29	60.64	--	50.64
	0.58	40.83	56	--	46
	0.83	36.29	56	--	46
	5.25	41.56	60	--	50
	16.23	39.77	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.4 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11b (CH13)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.17	43.74	64.91	--	54.91
	0.21	42.88	63.01	--	53.01
	0.28	39.90	60.64	--	50.64
	0.36	40.56	58.61	--	48.61
	5.25	41.98	60	--	50
	13.27	38.61	60	--	50
	16.05	40.19	60	--	50
L2	0.21	41.66	63.01	--	53.01
	0.28	39.56	60.58	--	50.58
	0.36	40.16	58.73	--	48.73
	0.50	37.68	56	--	46
	1.99	34.39	56	--	46
	5.30	40.43	60	--	50
	16.49	39.49	60	--	50

Notes : *1.L1*: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.5 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11g (CH01)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.21	42.77	63.01	--	53.01
	0.29	40.03	60.50	--	50.50
	0.36	38.88	58.71	--	48.71
	0.87	34.54	56	--	46
	1.70	33.41	56	--	46
	5.30	40.43	60	--	50
	12.78	39.32	60	--	50
L2	0.16	42.52	65.01	--	55.01
	0.21	42.75	63.01	--	53.01
	0.36	38.49	58.71	--	48.71
	0.86	33.68	56	--	46
	1.26	35.14	56	--	46
	1.99	33.97	56	--	46
	5.30	37.01	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.6 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *811g (CH07)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.18	43.45	64.39	--	54.39
	0.30	39.82	60.24	--	50.24
	0.36	40.26	58.73	--	48.73
	0.47	36.65	46.41	--	46.41
	0.94	33.34	56	--	46
	5.51	39.06	60	--	50
	12.65	38.33	60	--	50
L2	0.16	44.24	65.06	--	55.06
	0.21	43.52	62.93	--	52.93
	0.28	40.20	60.58	--	50.58
	0.36	38.03	58.71	--	48.71
	0.65	33.99	56	--	46
	5.51	38.65	60	--	50
	16.40	38.71	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.7 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11g (CH10)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.21	44.37	63.17	--	53.17
	0.28	41.07	60.58	--	50.58
	0.36	41.98	58.73	--	48.73
	0.57	40.74	56	--	46
	0.94	37.64	56	--	46
	5.25	39.26	60	--	50
	14.67	40.06	60	--	50
L2	0.16	43.80	65.01	--	55.01
	0.19	42.45	64.04	--	54.04
	0.36	38.96	58.71	--	48.71
	0.51	36.82	56	--	46
	4.98	37.70	56	--	46
	5.51	37.67	60	--	50
	16.49	38.66	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.8 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11g (CH13)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.21	44.94	63.01	--	53.01
	0.28	42.79	60.64	--	50.64
	0.36	40.34	58.71	--	48.71
	0.43	38.68	57.19	--	47.19
	1.24	35.55	56	--	46
	5.11	40.74	60	--	50
	12.92	39.22	60	--	50
L2	0.17	42.61	64.82	--	54.82
	0.22	40.08	62.78	--	52.78
	0.29	41.21	60.50	--	50.50
	0.43	39.90	57.19	--	47.19
	0.87	35.87	56	--	46
	1.68	34.37	56	--	46
	16.23	39.32	60	--	50

Notes : *1.L1*: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.9 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11b (CH01)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.17	44.10	64.72	--	54.72
	0.21	43.06	62.93	--	52.93
	0.36	40.31	58.61	--	48.61
	0.42	37.72	57.33	--	47.33
	1.70	32.91	56	--	46
	5.45	40.12	60	--	50
	13.13	39.31	60	--	50
L2	0.21	45.22	62.93	--	52.93
	0.28	41.73	60.58	--	50.58
	0.47	38.20	56.41	--	46.41
	0.57	39.62	56	--	46
	1.24	33.95	56	--	46
	5.45	39.87	60	--	50
	16.14	39.91	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*4.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*5.*The above test results are obtained under the normal condition.

3.8.2 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11b (CH07)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.17	42.51	64.67	--	54.67
	0.21	43.63	63.01	--	53.01
	0.28	40.76	60.73	--	50.73
	0.36	39.03	58.61	--	48.61
	0.89	33.98	56	--	46
	5.17	41.37	60	--	50
	13.13	39.15	60	--	50
L2	0.21	42.41	62.93	--	52.93
	0.35	38.16	58.82	--	48.82
	0.50	37.32	56	--	46
	0.57	36.06	56	--	46
	0.87	35.29	56	--	46
	5.30	40.35	60	--	50
	16.23	37.79	60	--	50

Notes : *1.L1*: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
3.The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.3 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11b (CH10)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.21	44.55	63.17	--	53.17
	0.28	42.23	60.82	--	50.82
	0.35	40.38	58.82	--	48.82
	0.49	40.68	56.02	--	46.02
	1.24	35.06	56	--	46
	5.28	38.15	60	--	50
	15.47	39.41	60	--	50
L2	0.21	43.94	63.01	--	53.01
	0.28	41.04	60.73	--	50.73
	0.36	38.59	58.71	--	48.71
	0.47	39.76	56.41	--	46.41
	0.84	35.62	56	--	46
	5.45	39.01	60	--	50
	16.66	39.44	60	--	50

Notes : *1.L1*: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.4 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11b (CH13)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.21	42.88	63.01	--	53.01
	0.28	39.34	60.58	--	50.58
	0.36	40.56	58.61	--	48.61
	0.50	33.68	56	--	46
	5.30	41.82	60	--	50
	12.52	37.79	60	--	50
	15.15	39.58	60	--	50
L2	0.21	41.56	63.09	--	53.09
	0.28	39.56	60.58	--	50.58
	0.35	38.45	58.82	--	48.82
	0.57	35.53	56	--	46
	0.88	34.09	56	--	46
	5.25	39.20	60	--	50
	16.49	39.49	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.5 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11g (CH01)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.20	44.02	63.61	--	53.61
	0.23	43.13	62.34	--	52.34
	0.36	39.67	58.73	--	48.73
	0.64	34.61	56	--	46
	0.95	33.76	56	--	46
	5.39	40.92	60	--	50
	12.78	39.32	60	--	50
L2	0.20	44.52	63.57	--	53.57
	0.29	45.35	60.35	--	50.35
	0.41	37.70	57.55	--	47.55
	0.64	36.31	56	--	46
	1.02	34.71	56	--	46
	1.26	35.14	56	--	46
	5.25	39.40	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.6 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *811g (CH07)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.18	43.45	64.39	--	54.39
	0.21	42.53	62.93	--	52.93
	0.36	40.34	58.71	--	48.71
	0.51	37.74	56	--	46
	0.57	37.44	56	--	46
	1.70	34.80	56	--	46
	5.30	41.65	60	--	50
L2	0.15	47.41	65.57	--	55.57
	0.21	44.02	63.01	--	53.01
	0.35	39.49	58.77	--	48.77
	0.64	34.11	56	--	46
	1.68	34.40	56	--	46
	5.17	41.65	60	--	50
	16.31	39.66	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.7 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11g (CH10)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.21	44.37	63.17	--	53.17
	0.28	41.41	60.73	--	50.73
	0.36	41.03	58.71	--	48.71
	0.50	39.53	56	--	46
	0.57	40.74	56	--	46
	0.87	36.15	56	--	46
	5.51	39.80	60	--	50
L2	0.16	44.06	65.11	--	55.11
	0.21	40.69	63.01	--	53.01
	0.36	38.32	58.61	--	48.61
	0.47	39.99	56.41	--	46.41
	1.99	33.25	56	--	46
	5.45	38.83	60	--	50
	18.33	39.66	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.8 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *11g (CH13)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.18	43.72	64.39	--	54.39
	0.21	44.60	63.09	--	53.09
	0.28	42.45	60.58	--	50.58
	0.36	40.26	58.73	--	48.73
	1.20	34.43	56	--	46
	5.08	40.67	60	--	50
	12.92	39.22	60	--	50
L2	0.17	42.01	64.58	--	54.58
	0.21	42.41	62.93	--	52.93
	0.28	41.61	60.82	--	50.82
	0.43	39.60	57.23	--	47.23
	0.58	33.86	56	--	46
	1.98	33.30	56	--	46
	16.66	39.83	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.8.9 Conducted Emissions (Mains Power)

The following table show a summary of the highest emissions of power line conducted emissions to the HOT and NATURAL conductor of the EUT power.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Super G(CH06)*
Test Date : *04/28/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Power Line Conducted Emissions (Class B)					
Conductor	Frequency (MHz)	Quasi-Peak (dBuV)	Limits	Average (dBuV)	Limits
L1	0.16	44.51	65.31	--	55.31
	0.21	42.69	63.01	--	53.01
	0.36	39.60	58.73	--	48.73
	0.47	39.99	56.41	--	46.41
	1.98	33.30	56	--	46
	5.00	37.44	60	--	50
	18.14	38.88	60	--	50
L2	0.21	44.72	63.17	--	53.17
	0.28	39.54	60.64	--	50.64
	0.48	40.10	56.32	--	46.32
	0.58	38.64	56	--	46
	1.62	36.29	56	--	46
	5.17	37.10	60	--	50
	16.23	38.88	60	--	50

Notes :
1.L1: One end & Ground L1: The other end & Ground
*2.*Height of table on which the EUT was placed : 0.8 m.
*3.*The Quasi-Peak Value have already met the Average Value Limit showed on above limits.
*4.*The above test results are obtained under the normal condition.

3.9 Measurement Data Of Radiated Emissions:

3.9.1 Open Field Radiated Emissions (HORIZONTAL)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation , etc. are recorded on the following.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Run "Ping" Command*
Test Date : *04/27/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Radiated Emissions (HORIZONTAL)			
Frequency (MHz)	Amplitude (dBuV/m)	Limits(Class B) (dBuV/m)	Margin (dB)
89.69	22.16	30	-7.84
125.01	23.21	30	-6.79
154.25	22.43	30	-7.57
189.51	23.07	30	-6.93
360.50	29.05	37	-7.95
601.20	29.06	37	-7.94
640.53	29.84	37	-7.16
720.41	31.54	37	-5.46
852.05	30.77	37	-6.23

Notes : *1.*Margin= Amplitude - Limits
*2.*Distance of Measurement : 10 Meter (30-1000MHz)
*3.*Height of table for EUT placed: 0.8 Meter.
*4.*Amplitude= Reading Amplitude –Amplifier gain+Cable loss +Antenna factor
(Auto calculate in spectrum analyzer)

3.9.2 Open Field Radiated Emissions (VERTICAL)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation , etc. are recorded on the following.

Applicant : *Compex Inc..*
Model No : *iWavePort WLM54G1A*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Run "Ping" Command*
Test Date : *04/27/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Radiated Emissions (VERTICAL)			
Frequency (MHz)	Amplitude (dBuV/m)	Limits(Class B) (dBuV/m)	Margin (dB)
124.30	22.42	30	-7.58
151.45	23.05	30	-6.95
185.40	22.65	30	-7.35
500.08	29.89	37	-7.11
562.86	29.11	37	-7.89
610.30	30.63	37	-6.37
640.54	30.88	37	-6.12
700.57	30.29	37	-6.71
842.40	31.52	37	-5.48

Notes : *1.*Margin= Amplitude - Limits
*2.*Distance of Measurement : 10 Meter (30-1000MHz)
*3.*Height of table for EUT placed: 0.8 Meter.
*4.*Amplitude= Reading Amplitude –Amplifier gain+Cable loss +Antenna factor
(Auto calculate in spectrum analyzer)

3.9.3 Open Field Radiated Emissions (HORIZONTAL)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation , etc. are recorded on the following.

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Run "Ping" Command*
Test Date : *04/27/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Radiated Emissions (HORIZONTAL)			
Frequency (MHz)	Amplitude (dBuV/m)	Limits(Class B) (dBuV/m)	Margin (dB)
89.58	22.14	30	-7.86
125.04	23.14	30	-6.86
153.99	22.07	30	-7.93
189.62	23.05	30	-6.95
253.03	28.95	37	-8.05
360.55	28.94	37	-8.06
640.53	29.66	37	-7.34
720.48	31.42	37	-5.58
852.03	30.69	37	-6.31

Notes : *1.*Margin= Amplitude - Limits
*2.*Distance of Measurement : 10 Meter (30-1000MHz)
*3.*Height of table for EUT placed: 0.8 Meter.
*4.*Amplitude= Reading Amplitude –Amplifier gain+Cable loss +Antenna factor
(Auto calculate in spectrum analyzer)

3.9.4 Open Field Radiated Emissions (VERTICAL)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation , etc. are recorded on the following.

Applicant : *Compex Inc..*
Model No : *iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Run "Ping" Command*
Test Date : *04/27/2005*

The following table lists worst case data from transmissions / Reception with various bitrates on various channels.

Radiated Emissions (VERTICAL)			
Frequency (MHz)	Amplitude (dBuV/m)	Limits(Class B) (dBuV/m)	Margin (dB)
124.36	22.06	30	-7.94
151.47	23.09	30	-6.91
185.41	22.41	30	-7.59
421.59	28.69	37	-8.31
500.08	29.95	37	-7.05
610.35	29.84	37	-7.16
640.55	31.57	37	-5.43
700.58	30.09	37	-6.91
842.39	30.55	37	-6.45

Notes : *1.*Margin= Amplitude - Limits
*2.*Distance of Measurement : 10 Meter (30-1000MHz)
*3.*Height of table for EUT placed: 0.8 Meter.
*4.*Amplitude= Reading Amplitude –Amplifier gain+Cable loss +Antenna factor
(Auto calculate in spectrum analyzer)

IV. Harmonics/Voltage Fluctuation and Flicker Test

4.1 General:

This standard is applicable to electrical and electronic equipment for household and similar use, intended to be connected to low-voltage a.c distribution system of the following types:

- nominal voltages up to 240V, single-phase, two or tree wire;
- nominal voltages up to 415V, three-phase, three or four wire;
- nominal frequency 50 Hz or 60Hz

Examples of electrical equipment to which this standard applies are appliances for cooking and heating, motor-operated or magnetically driven appliance, portable tools, light dimmers and radio and television receivers.

This standard is not applicable to :

- equipment subject to notification to or consent by the supply authority before connection to the system;
- equipment intended exclusively for professional purposes.

4.2 Test Specifications:

Requirement	Comment	Results (Pass/Fail)
EN 61000-3-2	Harmonic 0-2 KHz	PASS
EN 61000-3-3	Flicker	PASS

4.3 Setup:

Whether the equipment operates with automatic, mixed or manual control, the measurements shall be made under normal load, or conditions for adequate heat discharge, and under normal operating conditions.

User's operation controls or automatic programmer shall be set to produce the maximum harmonic components, for each successive harmonic component in turn.

A definition of the normal load or of the conditions for adequate heat discharge can usually be found in the EN publication corresponding to the equipment under test.

Equipment may have several separately controlled circuits. Each circuit is considered as a single piece of equipment if it can be operated independently and separately from the other circuits.

4.4 Test Equipment List:

EMC-Partner HAR1000-1P Power Harmonics Analyzers (S/N:076)

4.5 Test condition:

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

4.6 Measurement Data Of Harmonic:

Applicant : Compex Inc.
Model No : iWavePort WLM54G1A
EUT : Compex Wireless-G Network Mini-PCI Adapter
Test Mode : Run "PING" command
Test Date : 05/03/2005
Input Voltage : 230.3V
Rms Amp : 0.239A
Real Power : 21.50W
Peak Amp : 1.431A
Apparent Power : 55.10VA
Power Factor : 0.390
Limits Multiplied by 1.00

Measurement Data

Harmonic Order	Limits	Magnitude	Results (Pass/Fail)
2	1.080A	0.0034A	Pass
3	2.300A	0.1039A	Pass
4	0.430A	0.0037A	Pass
5	1.140A	0.1010A	Pass
6	0.300A	0.0037A	Pass
7	0.770A	0.0966A	Pass
8	0.230A	0.0037A	Pass
9	0.400A	0.0907A	Pass
10	0.184A	0.0037A	Pass
11	0.330A	0.0836A	Pass
12	0.153A	0.0037A	Pass
13	0.210A	0.0756A	Pass
14	0.131A	0.0037A	Pass
15	0.150A	0.0670A	Pass
16	0.115A	0.0035A	Pass
17	0.132A	0.0583A	Pass
18	0.102A	0.0035A	Pass
19	0.118A	0.0496A	Pass
20	0.092A	0.0034A	Pass
21	0.107A	0.0409A	Pass
22	0.084A	0.0032A	Pass
23	0.098A	0.0331A	Pass
24	0.077A	0.0032A	Pass
25	0.090A	0.0261A	Pass
26	0.071A	0.0029A	Pass
27	0.083A	0.0200A	Pass
28	0.066A	0.0027A	Pass
29	0.078A	0.0148A	Pass
30	0.061A	0.0026A	Pass
31	0.073A	0.0104A	Pass
32	0.058A	0.0023A	Pass
33	0.068A	0.0070A	Pass
34	0.054A	0.0022A	Pass
35	0.064A	0.0061A	Pass
36	0.051A	0.0021A	Pass
37	0.061A	0.0066A	Pass
38	0.048A	0.0020A	Pass
39	0.058A	0.0071A	Pass
40	0.046A	0.0018A	Pass

4.7 Measurement Result Of Flicker:

Applicant : Compex Inc.
Model No : iWavePort WLM54G1A
EUT : Compex Wireless-G Network Mini-PCI Adapter
Test Mode : Run "PING" command
Test Date : 05/03/2005
Input Voltage : 230.3V
Rms Amp : 0.239A
Real Power : 21.50W
Peak Amp : 1.431A
Apparent Power : 55.10VA
Power Factor : 0.390
Limits Multiplied by 1.00

Test Equipment Setting	
Line Voltage	229.9V/AC
Line Frequency	50Hz
Test Limit Overrides	None
Total Number Of Failures	Pst: (0), Plt: (0), Dc: (0), Dmax (0)m Dt (0)
Total Number Of Errors	None

4.8 Measurement Data Of Harmonic:

Applicant : Compex Inc.
Model No : iWavePort WLM54G1B
EUT : Compex Wireless-G Network Mini-PCI Adapter
Test Mode : Run "PING" command
Test Date : 05/03/2005
Input Voltage : 230.3V
Rms Amp : 0.203A
Real Power : 17.33W
Peak Amp : 1.091A
Apparent Power : 46.78VA
Power Factor : 0.370
Limits Multiplied by 1.00

4.9 Measurement Result Of Flicker:

Applicant : Compex Inc.
Model No : iWavePort WLM54G1B
EUT : Compex Wireless-G Network Mini-PCI Adapter
Test Mode : Run "PING" command
Test Date : 05/03/2005
Input Voltage : 230.3V
Rms Amp : 0.203A
Real Power : 17.33W
Peak Amp : 1.091A
Apparent Power : 46.78VA
Power Factor : 0.370
Limits Multiplied by 1.00

Test Equipment Setting	
Line Voltage	229.9V/AC
Line Frequency	50Hz
Test Limit Overrides	None
Total Number Of Failures	Pst: (0), Plt: (0), Dc: (0), Dmax (0)m Dt (0)
Total Number Of Errors	None

Measurement Data

Harmonic Order	Limits	Magnitude	Results (Pass/Fail)
2	1.080A	0.0032A	Pass
3	2.300A	0.0900A	Pass
4	0.430A	0.0034A	Pass
5	1.140A	0.0881A	Pass
6	0.300A	0.0034A	Pass
7	0.770A	0.0853A	Pass
8	0.230A	0.0035A	Pass
9	0.400A	0.0814A	Pass
10	0.184A	0.0037A	Pass
11	0.330A	0.0767A	Pass
12	0.153A	0.0038A	Pass
13	0.210A	0.0712A	Pass
14	0.131A	0.0039A	Pass
15	0.150A	0.0652A	Pass
16	0.115A	0.0039A	Pass
17	0.132A	0.0587A	Pass
18	0.102A	0.0040A	Pass
19	0.118A	0.0521A	Pass
20	0.092A	0.0039A	Pass
21	0.107A	0.0454A	Pass
22	0.084A	0.0039A	Pass
23	0.098A	0.0389A	Pass
24	0.077A	0.0038A	Pass
25	0.090A	0.0326A	Pass
26	0.071A	0.0037A	Pass
27	0.083A	0.0267A	Pass
28	0.066A	0.0034A	Pass
29	0.078A	0.0212A	Pass
30	0.061A	0.0032A	Pass
31	0.073A	0.0166A	Pass
32	0.058A	0.0029A	Pass
33	0.068A	0.0128A	Pass
34	0.054A	0.0028A	Pass
35	0.064A	0.0095A	Pass
36	0.051A	0.0026A	Pass
37	0.061A	0.0067A	Pass
38	0.048A	0.0023A	Pass
39	0.058A	0.0048A	Pass
40	0.046A	0.0021A	Pass

V. Electrostatic Discharge Requirements(ESD)

5.1 General:

This requirement relates to the EUT may be involved static electricity discharges owing to environmental and installation conditions. A transfer of electrostatic charge between objects of different electrostatic potential may cause harmful to the EUT. A performance criteria is classified as A, B, C, D, the recommendation
is criteria B.

5.2 Test Specifications:

Requirement	Basic Standard	Performance Criteria
ETSI EN 301 489	EN 61000-4-2: 1995+A2:2001	TT for Transmitters TR for Receivers

Criteria	During Test	After Test
A	Shall operate as intended May show degradation of performance (note 1) Shall be no loss of function Shall be no unintentional transmissions	Shall operate as intended Shall be no degradation of performance (note 2) Shall be no loss of function Shall be no loss of stored data or user programmable functions
B	May show loss of function (one or more) May show degradation of performance (note 1) No unintentional transmissions	Functions shall be self-recoverable Shall operate as intended after recovering Shall be no degradation of performance (note 2) Shall be no loss of stored data or user programmable functions
C	May be loss of function (one or more	Functions shall be recoverable by the operator Shall operate as intended after recovering Shall be no degradation of performance (note 2)

5.3 Setup:

This requirement relates to the EUT may be involved static electricity discharges owing to environmental and installation conditions. A transfer of electrostatic charge between objects of different electrostatic potential may cause harmful to the EUT. A performance criteria is classified as A, B, C, D, the recommendation is criteria B.

5.4 Test Equipment List:

A. NoiseKen ESS-2001 ESD Main Unit (S/N:ESS0170020)
B. 0.8m HEIGHT WOODEN TABLE
C. NoiseKen Discharge Gun (S/N:ESS0170020)

5.5 Test condition:

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

5.6 ESD Test :

Requirements ..... *: +- 8 KV(Level 3)*
Performance Criteria ..... *: TT for Transmitters*
TR for Receivers
Temperature ..... *: 20-35 Degrees Celsius*
Relative Humidity ..... *: 45-70 %*

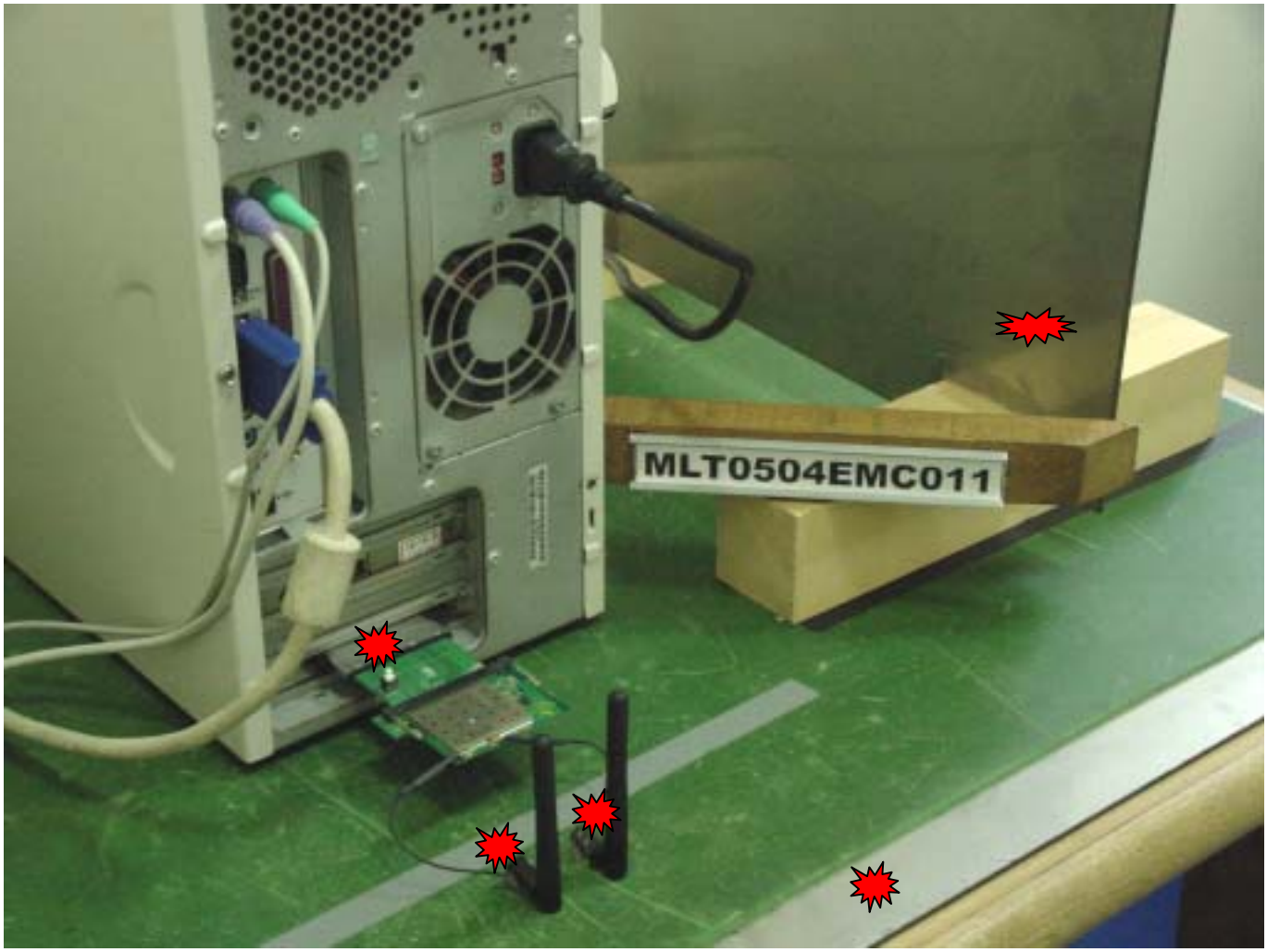
5.7 Test Result:

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A / iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Run "Ping" Command*
Test Date : *04/28/2005*

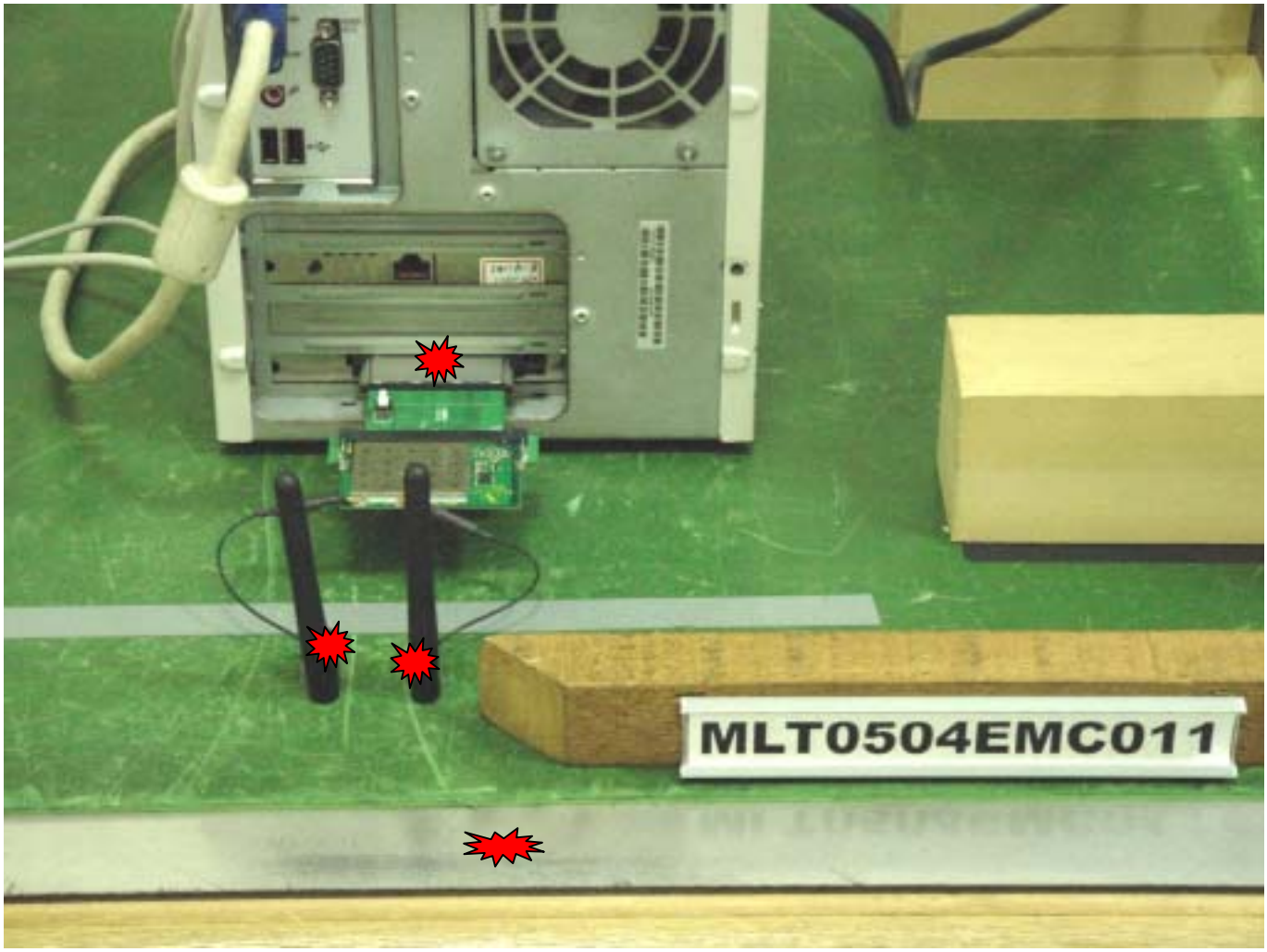
Voltage	*Coupling*	*Results*
+ - 4KV	Horizontal Coupling Plane	*PASS*
+ - 4KV	Vertical Coupling Plane	*PASS*
+ - 4KV	Contact Discharge	*PASS*
+ - 8KV	Air Discharge	*PASS*

Note: Please refer to next page for the selected testing point.

ESD selected testing point.



ESD selected testing point.



VI. Radiated Electromagnetic Field Requirements (RS)

6.1 General:

Most electronic product is in some manner affected by environmental electromagnetic radiation, the performance will be degraded or totally unfunction. The object of this part is to evaluate the susceptibility of the EUT whether it can operate properly in the electromagnetic environment, A performance criteria is classified as A, B, C, D, the recommendation is criteria A.

6.2 Test Specifications:

Requirement	Basic Standard	Performance Criteria
ETSI EN 301 489	EN 61000-4-3: 2003	CT for Transmitters CR for Receivers

Criteria	During Test	After Test
A	Shall operate as intended May show degradation of performance (note 1) Shall be no loss of function Shall be no unintentional transmissions	Shall operate as intended Shall be no degradation of performance (note 2) Shall be no loss of function Shall be no loss of stored data or user programmable functions
B	May show loss of function (one or more) May show degradation of performance (note 1) No unintentional transmissions	Functions shall be self-recoverable Shall operate as intended after recovering Shall be no degradation of performance (note 2) Shall be no loss of stored data or user programmable functions
C	May be loss of function (one or more	Functions shall be recoverable by the operator Shall operate as intended after recovering Shall be no degradation of performance (note 2)

6.3 Setup:

Before testing, the intensity of the established field strength is checked by the field sensor for calibration. After that, the EUT is placed in the center of the enclosure on a wooden table. The equipment is then connected to power and signal leads according to pertinent installation instructions. The frequency range is swept from 80MHz to 1000MHz, without modulation, severity level of 3V/m, pausing to adjust the R.F. signal level or switch oscillators and antenna.

The rate of sweep is in the order of $1.5x10^{-3}$ decades/s with the EUT in its most sensitive orientation. Where the frequency range is swept incrementally, the step size is 1% of fundamental with linear interpolation between calibrated points.

6.4 Test Equipment List:

A. Frankonia FLH-100 WID-EBAND AMPLIFIER(25-1000MHz) (S/N:0017)
B. HP 8657J SIGNAL GENERATOR (S/N:3235A00122)
C. EMCO 3142 Biconilog Antenna (S/N:1184)
D. NARDA PROBE EMR-300(S/N:22441)

6.5 Test condition:

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

6.6 RS Test :

Requirements ..... *: 3V/m(80~1000MHz)*
Performance Criteria ..... *: CT for Transmitters*
CR for Receivers
Temperature ..... *: 20-35 Degrees Celsius*
Relative Humidity ..... *: 45-70 %*
Step ..... *: 1%*
Step time ..... *: 3 Second*

6.7 Test Result:

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A / iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Run "Ping" Command*
Test Date : *05/04 /2005*

Range	*Field*	*Modulation*	*Results*
80-200 MHz	>3 V/m	80% AM(1KHz)	*PASS*
200-1000 MHz	>3 V/m	80% AM(1KHz)	*PASS*

VII. Electrical Fast Transient/Burst Requirements(EFT)

7.1 General:

The test is intended to show the immunity of the EUT when subjected to types of transient interference such as originating from switching transients. Bursts consisting of a number of fast transients are employed, coupled into power supply, control and signal inputs of EUT. The transients must be the short rise-time, the repetition rate and the low energy. A performance criteria is classified as A, B, C, D, the recommendation is criteria B.

7.2 Test Specifications:

Requirement	Basic Standard	Performance Criteria
ETSI EN 301 489	EN 61000-4-4: 2004	TT for Transmitters TR for Receivers

Criteria	During Test	After Test
A	Shall operate as intended May show degradation of performance (note 1) Shall be no loss of function Shall be no unintentional transmissions	Shall operate as intended Shall be no degradation of performance (note 2) Shall be no loss of function Shall be no loss of stored data or user programmable functions
B	May show loss of function (one or more) May show degradation of performance (note 1) No unintentional transmissions	Functions shall be self-recoverable Shall operate as intended after recovering Shall be no degradation of performance (note 2) Shall be no loss of stored data or user programmable functions
C	May be loss of function (one or more	Functions shall be recoverable by the operator Shall operate as intended after recovering Shall be no degradation of performance (note 2)

7.3 Setup:

The EUT is arranged and connected according to its normal installation requirements. The length of the signal and power lines between the coupling device(clamp) and the EUT is 1m or less. If a non-detachable cable more than 1m long with the equipment, the excess length of this cable is gathered into a flat coil with 0.4m diameter and situated at a distance of 0.1m above the ground reference plane.

Bursts of 5ns/50ns pulses at a repetition rate of 5kHz with a duration of 15ms and period of 300ms, applied in both polarities between power supply terminals(including the protective earth) and a reference ground plane, or via a capacitate coupling clamp onto I/O circuits and communication lines for 3 minutes. The test level is 1kV on power supply, 0.5kV on I/O signal, data and control lines. The 0.5kV is applicable only to ports interfacing with cables whose total length according to the manufacturer's functional specification may exceed 3m.

7.4 Test Equipment List:

A. EMC-PARTNER TRANSIENT-2000IN4 EMC TESTER (S/N: 506)
B. NoiseKen 15-00001A CAPACITOR CLAMP (S/N: 0928S201)

7.5 Test condition:

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

7.6 EFT Test :

Requirements ..... *: 1KV (Power Supply)*
500V(Control and Signal Inputs)
Performance Criteria ..... *: TT for Transmitters*
TR for Receivers
Temperature ..... *: 20-35 Degrees Celsius*
Relative Humidity ..... *: 45-70 %*

7.7 Test Result:

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A / iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Run "Ping" Command*
Test Date : *05/05/2005*

Connected	*Voltage*	*Duration*	*Results*
PC Power Line (L)	+1000V	3 Minutes	*PASS*
PC Power Line (L)	-1000V	3 Minutes	*PASS*
PC Power Line (N)	+1000V	3 Minutes	*PASS*
PC Power Line (N)	-1000V	3 Minutes	*PASS*
PC Power Line (L+N)	+1000V	3 Minutes	*PASS*
PC Power Line (L+N)	-1000V	3 Minutes	*PASS*
PC Power Line (L+N+PE)	+1000V	3 Minutes	*PASS*
PC Power Line (L+N+PE)	-1000V	3 Minutes	*PASS*

VIII. Surge Requirements

8.1 General:

The object of this section to establish a common reference for evaluating the performance of equipment when subjected to high-energy disturbances on the power and interconnection lines. The test is to find the reaction of the EUT under specified operational conditions caused by surge voltages from switching and lightning effects at certain threat levels. A performance criteria is classified as A, B, C, D, the recommendation is criteria B.

8.2 Test Specifications:

Requirement	Basic Standard	Performance Criteria
ETSI EN 301 489	EN 61000-4-5: 1995+A1:2001	TT for Transmitters TR for Receivers

Criteria	During Test	After Test
A	Shall operate as intended May show degradation of performance (note 1) Shall be no loss of function Shall be no unintentional transmissions	Shall operate as intended Shall be no degradation of performance (note 2) Shall be no loss of function Shall be no loss of stored data or user programmable functions
B	May show loss of function (one or more) May show degradation of performance (note 1) No unintentional transmissions	Functions shall be self-recoverable Shall operate as intended after recovering Shall be no degradation of performance (note 2) Shall be no loss of stored data or user programmable functions
C	May be loss of function (one or more	Functions shall be recoverable by the operator Shall operate as intended after recovering Shall be no degradation of performance (note 2)

8.3 Setup:

8.3.2 Power Supply

The surge is to be applied to the EUT power supply terminals via the capacitate coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test. If not otherwise specified the power cord between the EUT and the coupling / decoupling network shall be 2m in length (or shorter).

8.3.2 Unshielded unsymmetrically operated interconnection lines

The coupling / decoupling network shall not influence the specified functional conditions of the circuits to be tested. Selection shall be made depending on the capacitive load with respect to transmission frequency. If not otherwise specified the power cord between the EUT and the coupling / decoupling network shall be 2m in length (or shorter).

8.3.3 Unshielded symmetrically operated interconnection/ telecommunication lines

For balanced interconnection/telecommunication circuits, the capacitive coupling method can normally not be used. In this case, the coupling is performed via gas arrestors(CCITT Recommendation K.17). If not otherwise specified the power cord between the EUT and the coupling / decoupling network shall be 2m in length (or shorter).

8.3.4 Shielded lines

In the case of shielded lines coupling / decoupling network may not be applicable. For decoupling the connected safety earthwire a safety isolating transformer shall be used. Normally, the maximum length of the specified shield cable shall be used. With respect to the frequency spectrum of the surge 20 m length of the specified shielded cable shall be used in non-inductively bundled configuration for physical reasons.

8.4 Test Equipment List:

A. EMC-PARTNER TRANSIENT-2000IN4 EMC TESTER (S/N: 506)
B. EMC-PARTNER CDN-KIT1000T Coupling Network (S/N: 031)

8.5 Test condition:

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

8.6 Surge Test :

Requirements : *+-1KV or +-0.5KV(AC Power Port)*
+-0.5KV (Control and Signal Inputs)
+-0.5KV (DC Power Port)
Performance Criteria : *TT for Transmitters*
TR for Receivers
Temperature : *20-35 ℃*
Relative Humidity : *45-70 %*

8.7 Test Result:

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A / iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Run "Ping" Command*
Test Date : *05/03/2005*

Connected	*Voltage*	*Duration*	*Results*
Power Port (L-G)	+-500V	1/Min(5times)	*PASS*
Power Port (L-G)	-500V	1/Min(5times)	*PASS*
Power Port (N-G)	+-500V	1/Min(5times)	*PASS*
Power Port (N-G)	-500V	1/Min(5times)	*PASS*
Power Port (L-N)	+1000V	1/Min(5times)	*PASS*
Power Port (L-N)	-1000V	1/Min(5times)	*PASS*

IX. Immunity to Conducted Disturbances, Induced by Frequency Field Requirements

9.1 General:

The Source of disturbance covered by this section of IEC 1000-4 is basically an electromagnetic field, coming from intended RF transmitters, that may act on the whole length of cables connected to an installed equipment. The dimensions of the disturbed equipment, mostly a sub-part of a larger system, are assumed to be small compared with the wavelengths involved. The test is to find the reaction of the EUT under specified operational conditions caused by surge voltages from switching and lightning effects at certain threat levels. A performance criteria is classified as A, B, C, D, the recommendation is criteria A.

9.2 Test Specifications:

Requirement	Basic Standard	Performance Criteria
ETSI EN 301 489	EN 61000-4-6: 1996+A1:2001	CT for Transmitters CR for Receivers

Criteria	During Test	After Test
A	Shall operate as intended May show degradation of performance (note 1) Shall be no loss of function Shall be no unintentional transmissions	Shall operate as intended Shall be no degradation of performance (note 2) Shall be no loss of function Shall be no loss of stored data or user programmable functions
B	May show loss of function (one or more) May show degradation of performance (note 1) No unintentional transmissions	Functions shall be self-recoverable Shall operate as intended after recovering Shall be no degradation of performance (note 2) Shall be no loss of stored data or user programmable functions
C	May be loss of function (one or more	Functions shall be recoverable by the operator Shall operate as intended after recovering Shall be no degradation of performance (note 2)

9.3 Setup:

Local interference regulations shall be adhered to with respect to the radiation from the test set-up. If the radiated energy exceeds the permitted level, a shielded enclosure shall be used.

The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn while the other non-excited RF input port of the coupling devices are terminated by 50 Ω load resistor.

Filters shall be used to prevent (higher order or sub-) harmonics from disturbing the EUT. A 100KHz high-pass filter (HPF), may be required after the test generator. The band stop characteristics of the low-pass filters (LPF) shall be sufficient to suppress the harmonics so that they do not affect the result. These filters shall be inserted after the test generator before setting the test level.

The frequency range is swept form 150KHz to 80MHz, using the signal levels established during the setting process, and with the disturbance signal 80% amplitude modulated with a 1 KHz sine wave, pausing to adjust RF signal level or to switch coupling devices as necessary. The rate of sweep shall not exceed 1.5 x 10-3 decades/s, Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

9.4 Test Equipment List:

A. Frankonia CIT-10/75 (EN61000-4-6) Test System (S/N: 102C3111)
B. Frankonia 6Db Attenuator
C. Frankonia CDN (M2+M3) (SN: A3003027 & A3011013)
D. Frankonia CDN (RJ11C) (SN: A3017002)
E. SCHAFFNER CDN (T4) (SN: 15998)
F. Frankonia Coupling Clamper (KEMZ-801) (SN: A230919)

9.5 Test condition:

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

9.6 CS Test :

Requirements ..... *: 3Vrms(150KHz~80MHz)*
Performance Criteria ..... *: A*
Performance Criteria ..... *: CT for Transmitters*
CR for Receivers
Temperature ..... *: 20-35 Degrees Celsius*
Relative Humidity ..... *: 45-70 %*
Step ..... *: 1%*
Step time ..... *: 3 Second*

9.7 Test Result:

Applicant : *Compex Inc.*
Model No : *iWavePort WLM54G1A / iWavePort WLM54G1B*
EUT : *Compex Wireless-G Network Mini-PCI Adapter*
Test Mode : *Run "Ping" Command*
Test Date : *05/05/2005*

Range	*Field*	*Connected*	*Results*
0.15-80 MHz	>3 Vrms	Power Port	*PASS*

X. Voltage Dips , Short Interruptions and Voltage Variations Requirements

10.1 General:

The Section of IEC 1000-4 defines the immunity test methods and range of preferred test levels for electrical and electronic equipment connected to low-voltage power supply networks for voltage dips. Short interruptions, and voltage variations. The standard applies to electrical and electronic equipment equipment having a rated input current not exceeding 16A per phase. It does not apply to electrical and electronic equipment for connection to D.C networks or 400Hz A.C networks. Test for these networks will be covered by future IEC standard . A performance criteria is classified as A, B, C, D, the recommendation is criteria A or B.

10.2 Test Specifications:

Requirement	Basic Standard	Performance Criteria
ETSI EN 301 489	EN 61000-4-8: 1993+A1:2001	Level 30% CT for Transmitters CR for Receivers
ETSI EN 301 489	EN 61000-4-8: 1993+A1:2001	Level 60% CT for Transmitters CR for Receivers
ETSI EN 301 489	EN 61000-4-8: 1993+A1:2001	Level >95% TT for Transmitters TR for Receivers

Criteria	During Test	After Test
A	Shall operate as intended May show degradation of performance (note 1) Shall be no loss of function Shall be no unintentional transmissions	Shall operate as intended Shall be no degradation of performance (note 2) Shall be no loss of function Shall be no loss of stored data or user programmable functions
B	May show loss of function (one or more) May show degradation of performance (note 1) No unintentional transmissions	Functions shall be self-recoverable Shall operate as intended after recovering Shall be no degradation of performance (note 2) Shall be no loss of stored data or user programmable functions
C	May be loss of function (one or more	Functions shall be recoverable by the operator Shall operate as intended after recovering Shall be no degradation of performance (note 2)

10.3 Setup:

The test shall be performed with the EUT connected to the test generator with the shortest power supply cable as specified by EUT manufacturer. If no cable length is specified, it shall be the shortest possible length suitable to the application of the EUT.

The test set-up for the two types of phenomena described in this standard are:

- Voltage dips and short interruptions;
- Voltage variations with gradual transition between the rated voltage and the changed voltage (Option)

Both tests may be implemented with these set-up. Test on the three-phase EUT are accomplished by using three set of equipment mutually synchronized.

The EUT shall be tested for each selected combination of test level and duration with a sequence of three Dip / interruption with intervals of 10 s minimum (between each test event). Each representative mode of operation shall be tested.

10.4 Test Equipment List:

EMC-PARTNER TRANSIENT-2000IN4 EMC TESTER (S/N: 506)

10.5 Test condition:

EUT tested in accordance with the specifications given by the manufacturer , and exercised in the most unfavorable manner.

10.6 Voltage DIP and Variations Test :

Requirements ..... : Level 60% Reduction UT (Duration 10ms)
Performance Criteria ..... : CT for Transmitters CR for Receivers
Requirements ..... : Level 30% Reduction UT (Duration 100ms)
Performance Criteria ..... : CT for Transmitters CR for Receivers
Requirements ..... : Level >95% Reduction UT (Duration 500ms)
Performance Criteria ..... : TT for Transmitters TR for Receivers
Temperature ..... : 20-35 Degrees Celsius
Relative Humidity ..... : 45-70 %

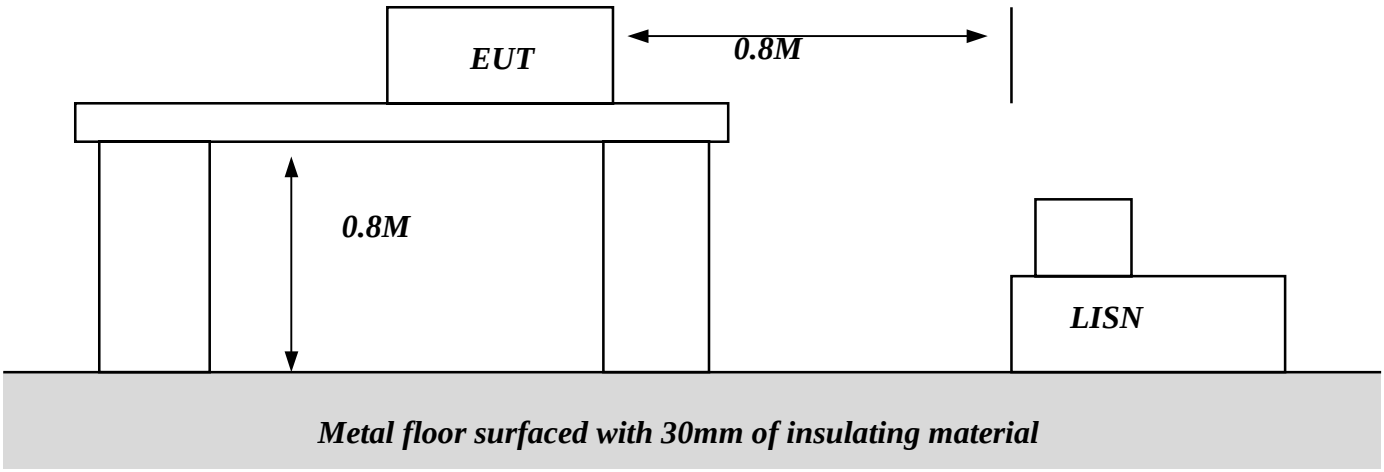
10.7 Test Result:

Applicant : Compex Inc.
Model No : iWavePort WLM54G1A / iWavePort WLM54G1B
EUT : Compex Wireless-G Network Mini-PCI Adapter
Test Mode : Run "Ping" Command
Test Date : 05/03/2005

Level	Duration Time	Connected	Results
60%	10ms	Power Port	PASS
30%	100ms	Power Port	PASS
>95%	500ms	Power Port	PASS

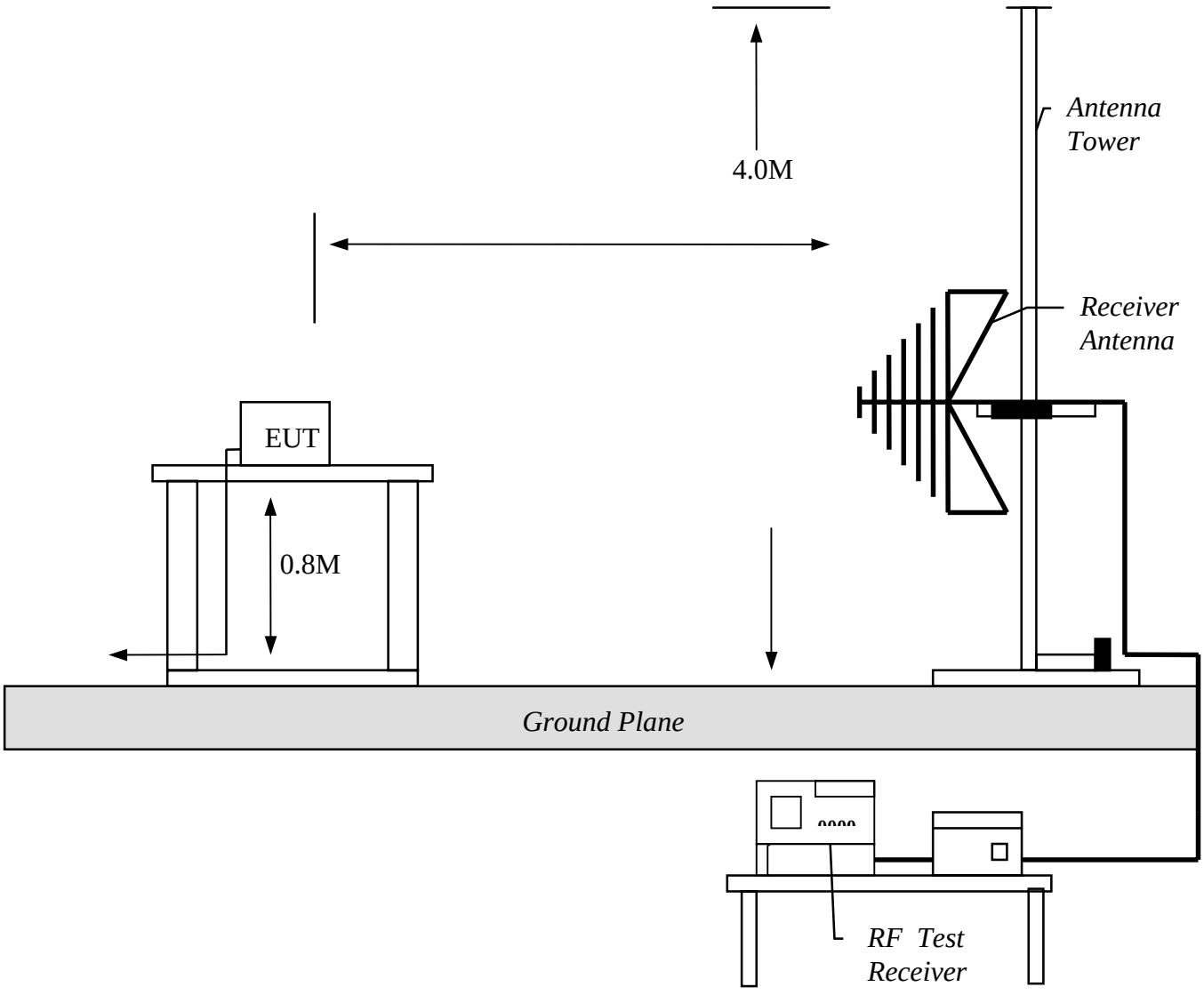
Appendix I- EUT Test SETUP

MEASUREMENT OF POWER LINE CONDUCTED RFI VOLTAGE



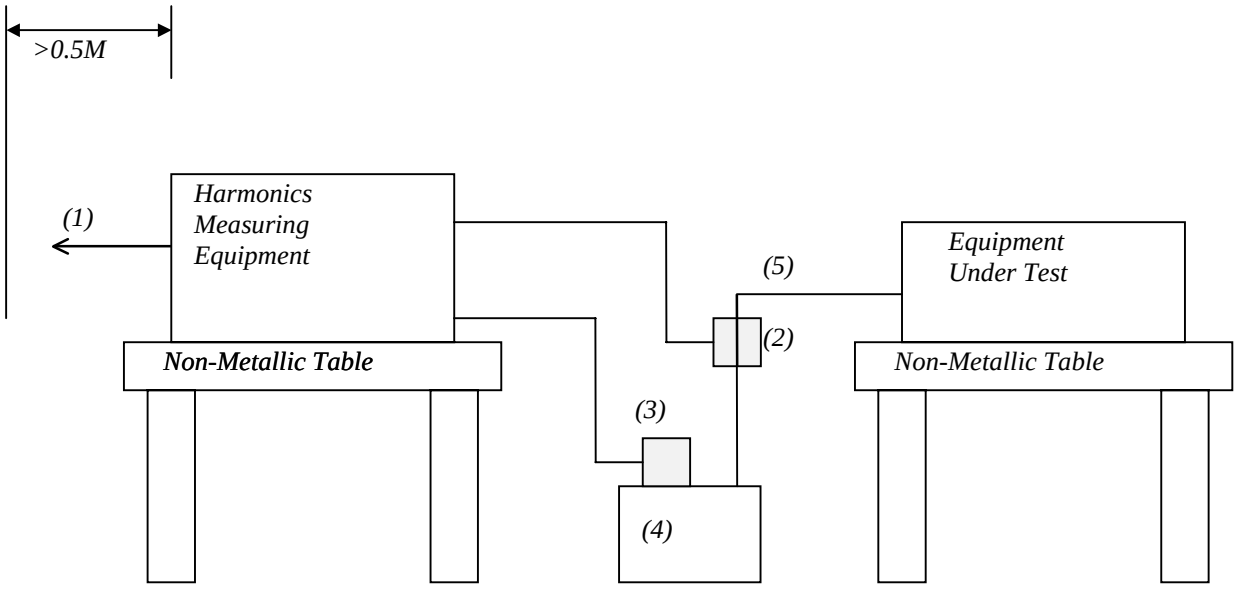
Appendix I- EUT Test SETUP

MEASUREMENT OF RADIATED EMISSION



Appendix I- EUT Test SETUP

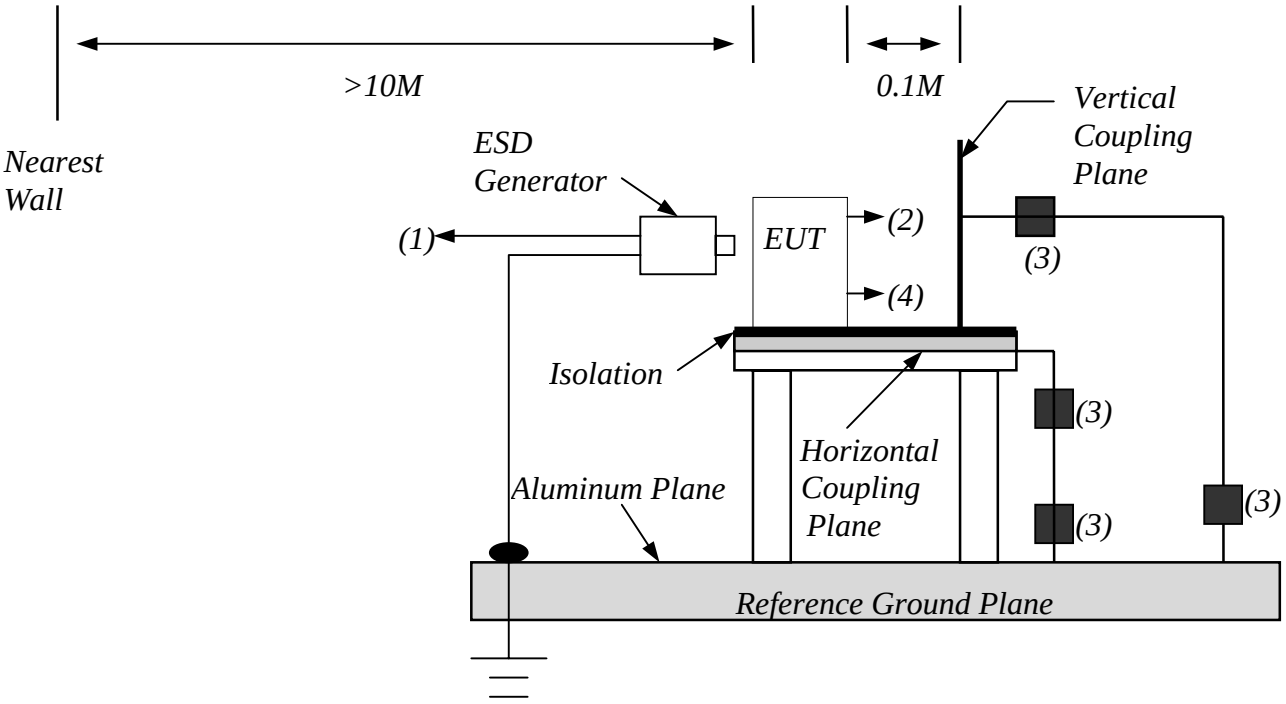
MEASUREMENT OF POWER HARMONICS



(1)Connected to mains supply system.
(2)Current Probe.
(3)Votage Probe.
(4)Power Supply Line of EUT.

Appendix I- EUT Test SETUP

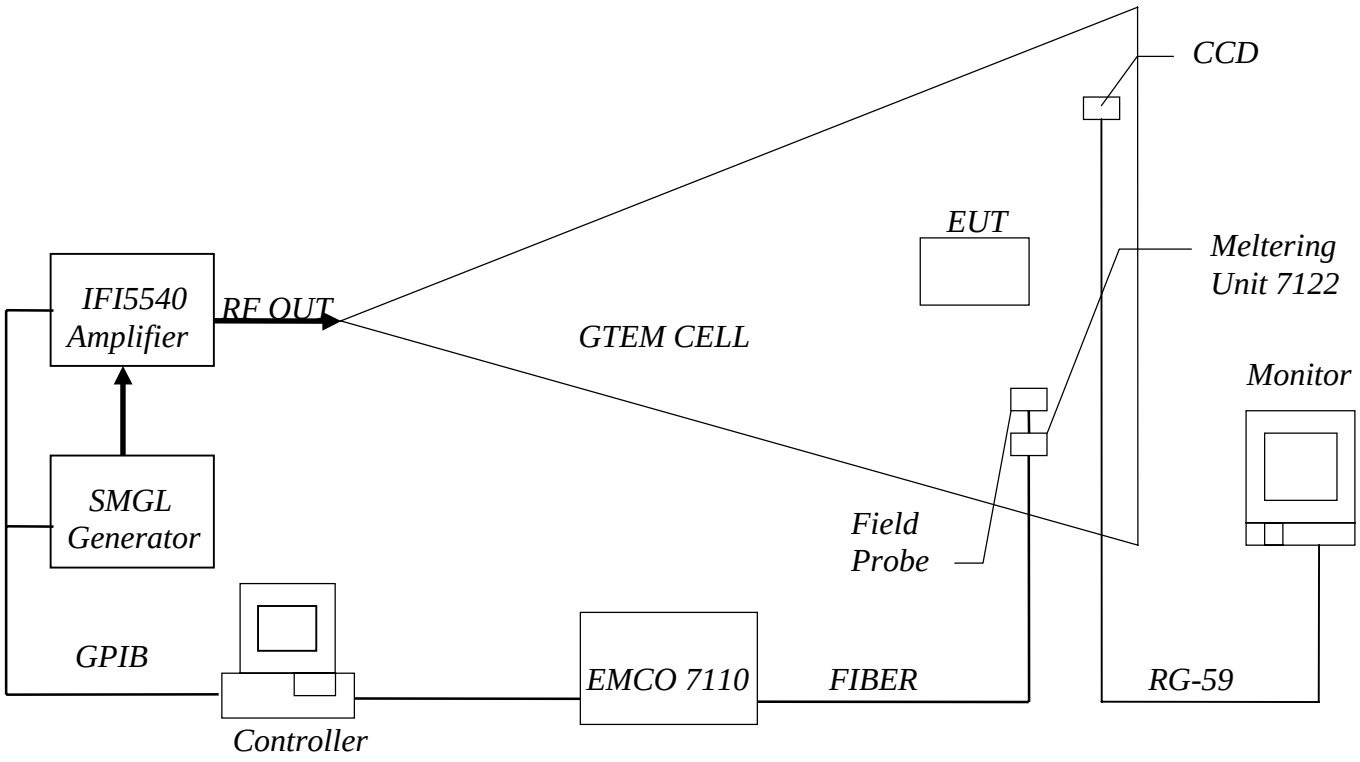
MEASUREMENT OF ELECTRO STATIC DISCHARE



(1)Connected to auxiliary power supply unit of ESD generator.
(2)Connected to mains outlet with earth terminal.
(3)Resistor 470K Ohm.
(4)Connexted with peripheral of EUT.

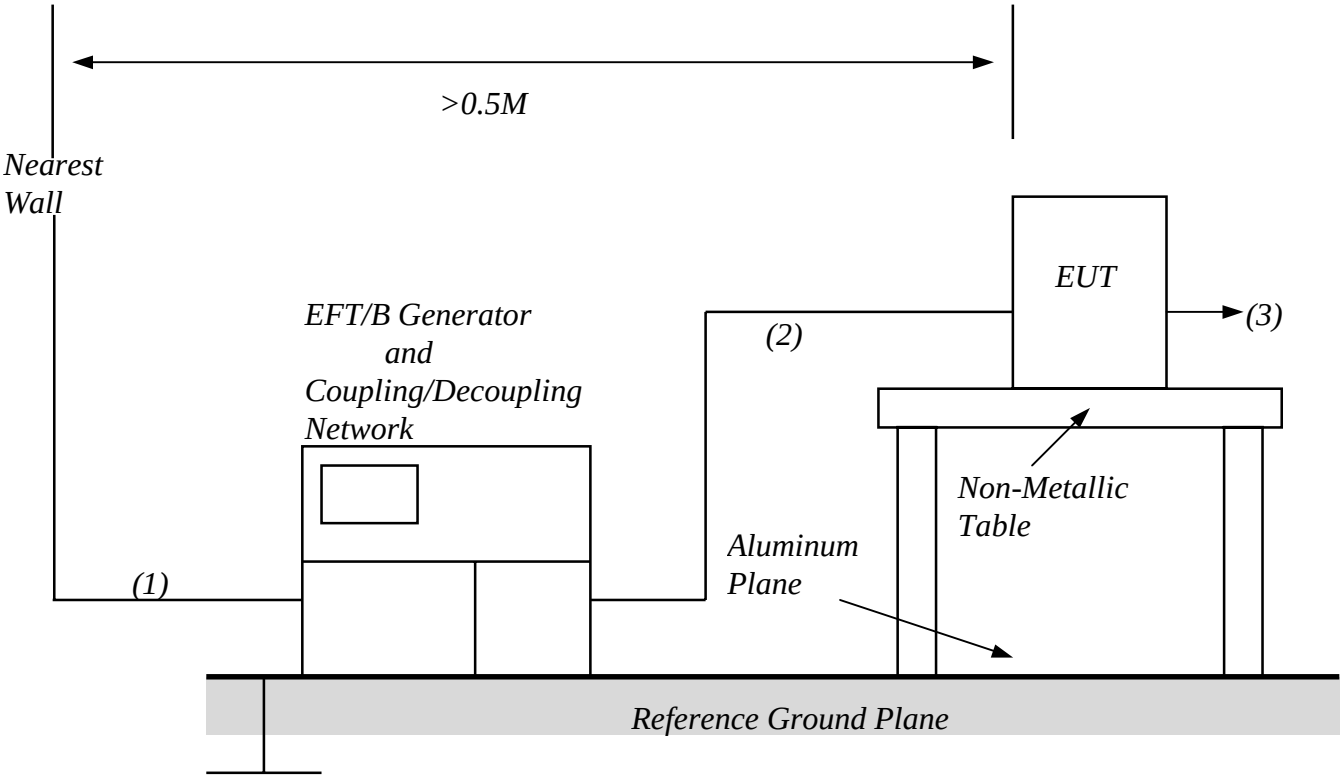
Appendix I- EUT Test SETUP

MEASUREMENT OF RADIATED ELECTROMAGNETIC FIELD



Appendix I- EUT Test SETUP

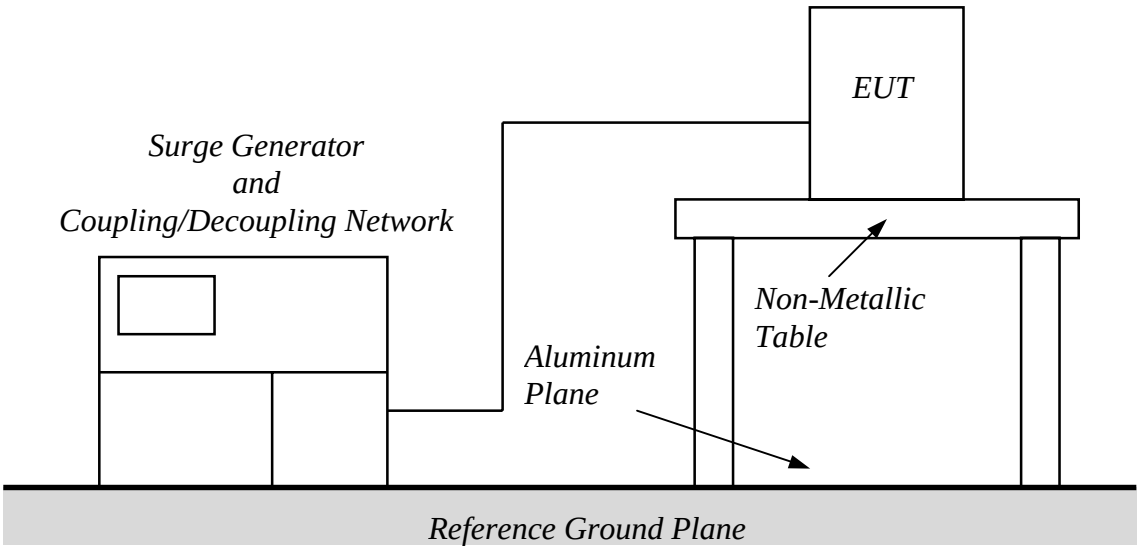
MEASUREMENT OF FAST TRANSIENTS/BURST



(1)Connected to AC mains supply.
(2)EFT/BURST and AC power supply to EUT.
(3)Connected with peripheral of EUT.

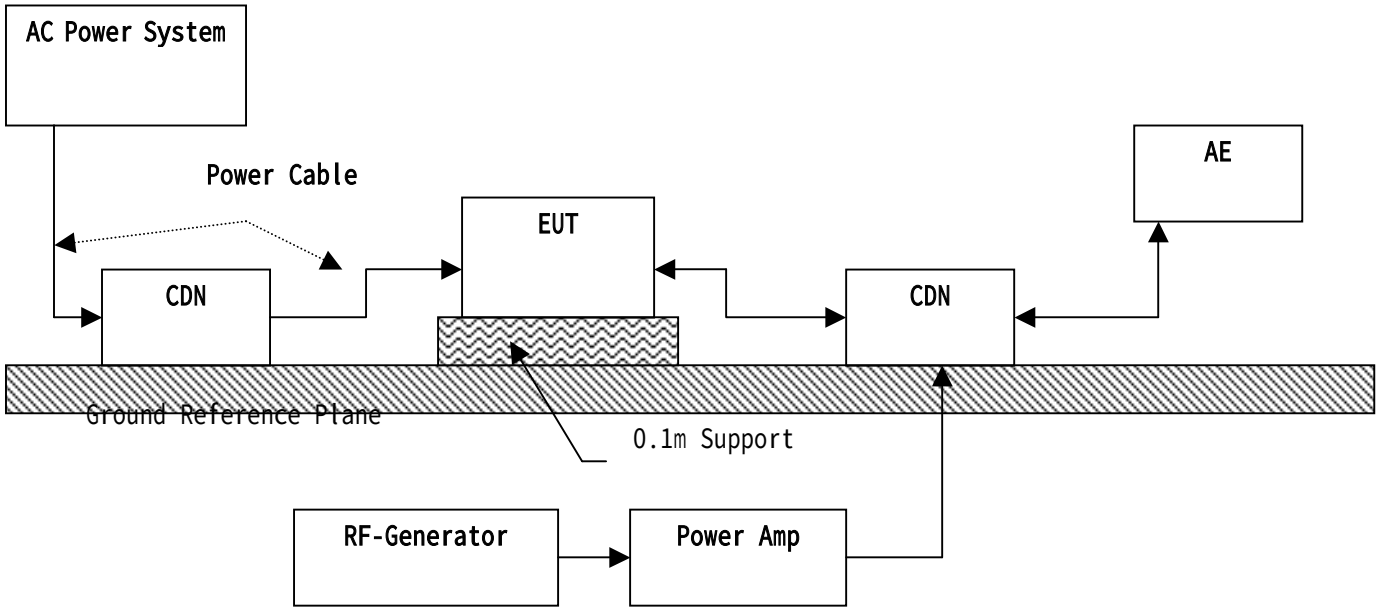
Appendix I- EUT Test SETUP

MEASUREMENT OF SURGE



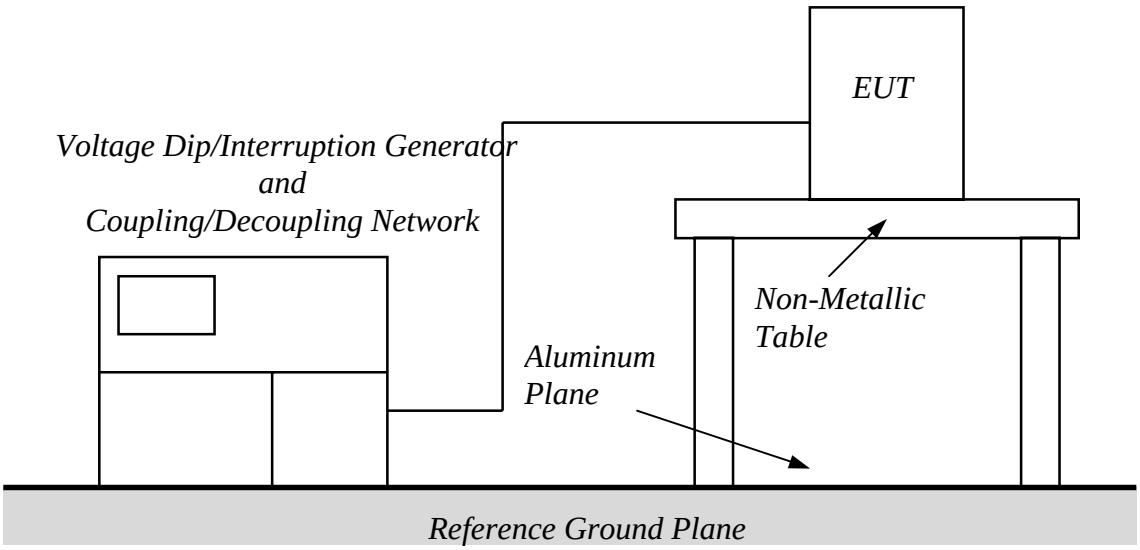
Appendix I- EUT Test SETUP

Immunity to Conducted Disturbances, Induced by Frequency Field



Appendix I- EUT Test SETUP

Voltage Dips,Short Interruptions and Voltage Variations



Appendix II- Block Diagram

See Next Page

Appendix III- & Users Manual

See Next Page

NETPASSAGE

Quick Install Guide

Compex Wireless Mini PCI Adapter

WLM54G

Version 1.1

COMPEX®

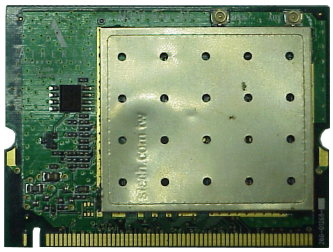
networks@work

networks@work

COMPEX®

3. Introduction

Figure 1
Compex WLM54G



This mini PCI adapter, Compex WLM54G contains a dual-mode single chip MAC/BB/Radio for IEEE 802.11b/g Wireless LAN. Based on the latest industry standard Wi-Fi Certified IEEE 802.11g specification, the Compex WLM54G offers maximum channel speeds of up to 108 Mbps. The Compex WLM54G maintains interoperability within the 2.4 GHz frequency band, offering full compatibility with 802.11b networks. It supports key security features like Wi-Fi Protected Access (WPA), WPA2, WEP and 802.1x.

WLM54G has two variants in its family :

- **WLM54G 1A:** This mini PCI adapter's "G" chipset offers maximum channel speeds of up to 54Mbps
- **WLM54G 1B:** This mini PCI adapter's "Super-G" chipset offers maximum channel speeds of up to 108Mbps

You can find this adapter that is seated inside the wireless products such as the NetPassage 28G. WLM54G can be removed from or inserted on the PCBA of the NetPassage 28G.

4. Packaging Contents

The Compex NetPassage 28G retail package contains the following items to start you off:

- 1x Compex NetPassage 28G
- 1x External Power Adapter
- 1x Quick Install Guide with Warranty Registration Form
- 1x Product CD (containing User's Manual, Firmware Recovery Tool & Utilities)
- 1x Wall-Mounting Template
- 1 x UTP MDI RJ45 Ethernet Straight Cable

5. Network Infrastructure

Only a few simple steps are required to set up the NetPassage 28G to begin your broadband Internet sharing as part of your wired and wireless network infrastructure.

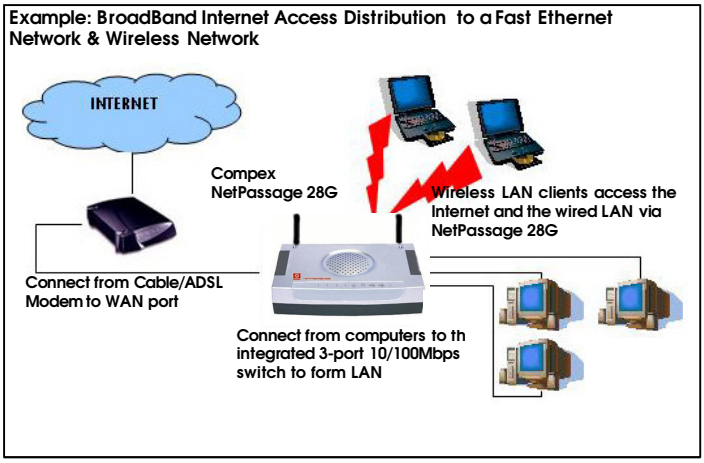


Figure 2 Setting up Compex NetPassage 28G

6. Hardware Installation

1. Connect an Ethernet cable from the cable/ADSL modem to the WAN port of the NetPassage 28G.

2. For Wired user, connect an Ethernet cable from your computer's network port to any of the LAN ports of the NetPassage 28G.

3. Connect the power adapter from the main power supply to NetPassage 28G. Please do not turn on the power during the installation for safety reasons.

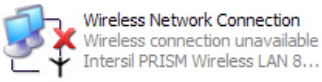
Once the hardware setup is done, you may power on the device now.

NOTE
For Wired Network users, please skip Section 5 and go to Section 6.

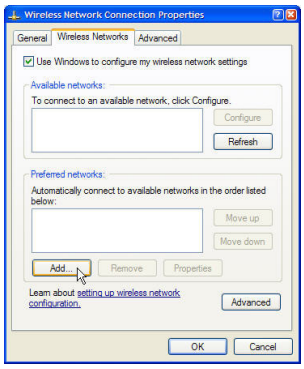
7. Configuring Wireless Network Connection

Depending on your client's wireless adapter, you may set up Windows XP's Wireless Network Connection as follows:

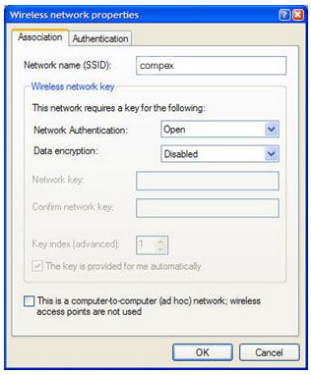
1. Right-click on **Wireless Network Connection** corresponding to the wireless Ethernet adapter you wish to connect with the NetPassage 28G, and click on **Properties**.



2. At the **Wireless Networks** tab, click on the **Add** button under **Preferred Networks**.



3. At the **Network name (SSID)** field, type in 'compex' (the factory default of NetPassage 28G). Click OK.

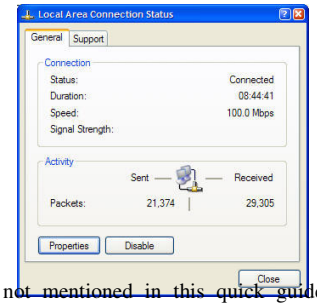


8. Configuring TCP/IP Settings

You should configure your PC or wireless client to obtain IP address automatically. For users of Microsoft Windows XP, you may configure the TCP/IP settings as follows:

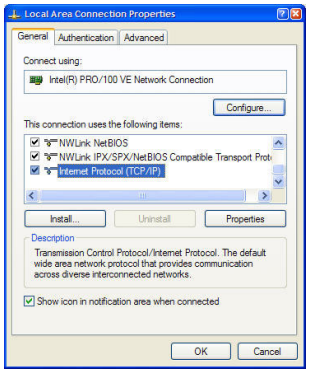
1. Click the **Start** button. Select **Settings** and click the **Control Panel** icon. Then double-click the **Network Connection** icon.

Right click on **Local Area Connection** or **Wireless Network Connection** corresponding to the Ethernet adapter you wish to connect to NetPassage 28G.



NOTE
The Advanced Setup is not mentioned in this quick guide. Please refer to User's Manual for more information.

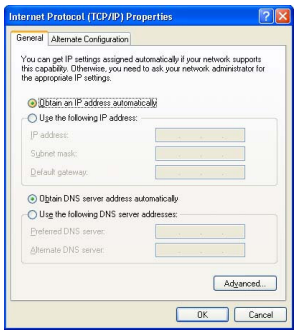
2. Under **General** tab at **This connection uses the following item**, make sure the box next to **Internet Protocol (TCP/IP)** is checked. Then highlight **Internet Protocol (TCP/IP)**, and click the **Properties** button.



3. Check the radio button next to **Obtain an IP address automatically** .

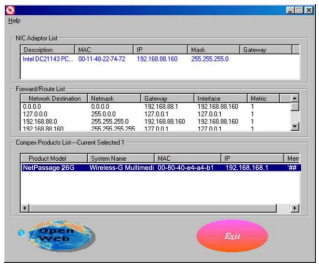
Then click the **OK** button on this page, and the **OK** button on the previous page it returns you to.

Restart your computer to complete the PC configuration.

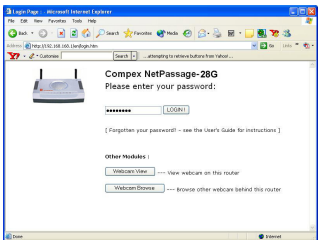


9. Getting Started with Wizard Setup

1. Insert the Product CD to your CD-ROM drive, go to **Utilities** section and run the **uConfig** program, select **Wireless-G Multimedia Gateway** and click on **OpenWeb** button.

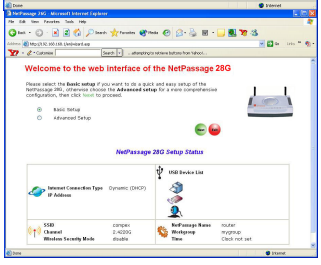


Alternatively, launch Internet Explorer Browser (or Netscape). At the Address field, key in http://192.168.168.1.

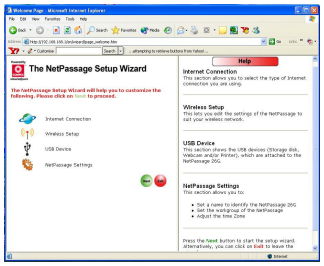


The default password is pre-entered in the field provided. Just click on the **LOGIN!** button to access the main page of Compex NetPassage 28G. The factory default password is 'password'.

2. Check the radio button next to **Basic Setup**. Click on the **Next** button.



3. The first page of Setup Wizard is an overview of the basic setup.



- **Internet Connection**

This functionality lets you specify the type of Internet Connection you want to use.

- **Wireless Setup**

This functionality lets you configure the settings of the gateway to suit your wireless network.

- **USB Device**

This functionality gives you a quick glimpse of the summary on the USB devices that are connected to the gateway.

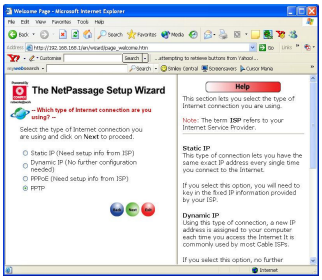
- **NetPassage Settings**

This functionality lets you identify the gateway and create a workgroup for the gateway. It also lets you set up the time zone of the locale.

NOTE

NOTE
For more details, please refer to User's Manual. Alternatively, refer to **Help** on the right side of the main page here.

4. To setup your WAN connection, select the following types of **Internet Connection** such as:



- **Static IP**

For configuring **Static IP**, you need to manually enter IP Address, Network Mask and Gateway IP Address that are provided by your ISP.

- **Dynamic IP** (used as an example in this guide)

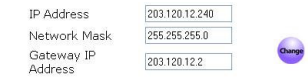
- **PPPoE**

For configuring **PPPoE** , you have to enter Username and Password that are provided by your ISP.

- **PPTP**

For configuring **PPTP** , you have to enter Username, Password, Network Mask and VPN Server that are provided by your ISP. Take note that VPN Server is the IP of your ISP PPTP server.

For configuring Static IP address

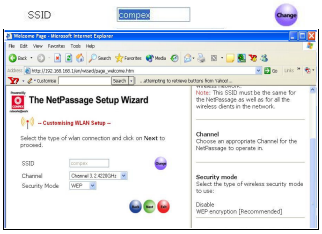


For configuring PPPoE

For configuring PPTP

To proceed, click on the **Next** button.

5. To configure the following parameters:



- **SSID**

The default SSID is 'compex'. Click on the **Change** button to enter your preferred SSID name.

Remember to change your wireless clients' settings illustrated in Section 5 after NetPassage 28G has rebooted and the new SSID has taken effect.

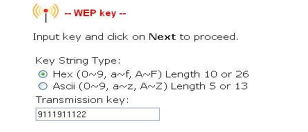
- **Channel**

Click on the down-arrow button next to **Channel**. From the list, select your preferred wireless network channel.

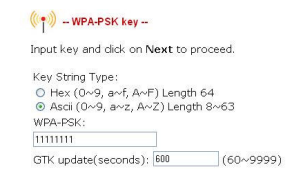
- **Security Mode**

You may choose to disable, enable **WEP** or enable **WPA-PSK** to secure the wireless connection.

If **WEP** is enabled, select Hex or Ascii for the key string type to be used. Then key in the transmission key.



If **WPA-PSK** is enabled, select Hex or Ascii for the key string type to be used. The default **WPA-PSK is** '11111111'. The default **GTK update** is '600'.



To proceed, click on the **Next** button.

6. Then the Wizard will detect if any of the USB devices such as printer, storage disk or webcam are connected to NetPassage 28G.

For more details on setting up USB devices, refer to User's Manual.

If you want to allow access to your storage disk via Internet, click **Yes**. Then you will be prompted to enter the following data:

- **System Name**

The default name is 'ROUTER' so you may change it if you wish. So create a better name to identify your gateway.

- **NetBios Name**

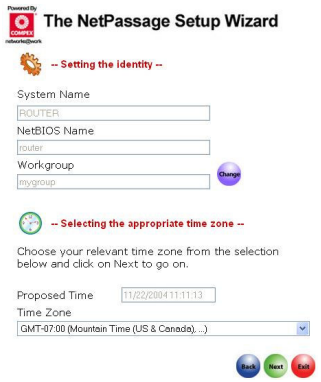
The default name is 'router' so you may change it if you wish. This name for NetPassage 28G will appear when you browse the MS Windows Network Neighbourhood.

- **Workgroup**

The default name is 'mygroup'. If you wish, create an appropriate name for the workgroup of your gateway.

- **Time Zone**

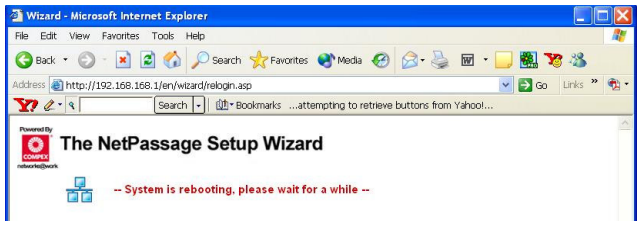
Set up the time zone of this locale.



To proceed, click on the **Next** button.

7. You will see the summary of NetPassage 28G setup appear for your viewing. Check if the settings such as WAN IP Address, etc are correct.

8. Click on the **Finish** button to save the settings and reboot NetPassage 28G.



9. You will be returned to the Login page after 30 seconds. Alternatively, you can repeat Step 1.

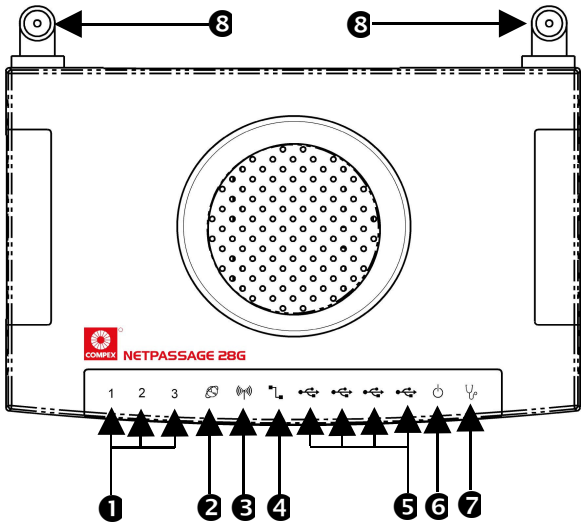
Further Information References

If you have other Windows operating systems or broadband Internet accounts, please refer to the User's Manual in the accompanying Product CD.

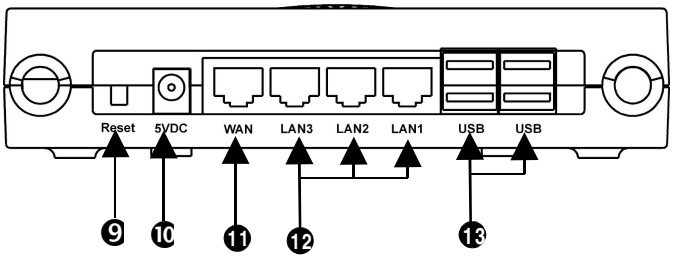
This document may become superseded, in which case you may find its latest version at: http://www.compex.com.sg/prodspec.asp?f=Manual&s=1

10. Schematic Overview of the NetPassage 28G

Top View



Back View



Label	Name	Description	
❶	LAN Link/Act LED 1,2 3	Steady GREEN	LAN connection is on.
		Flashing GREEN	Data transmission at LAN connection.
❷	WAN LED	Steady GREEN	WAN connection is on.
❸	Wireless LAN Link/Act LED	Steady GREEN	At least one wireless client is present.
		Flashing GREEN	Activity is detected in the wireless network.
❹	WAN Link/Act LED	Flashing GREEN	Data transmission at WAN connection.
❺	USB LEDs 1,2,3,4	Steady GREEN	USB device is detected.
		Flashing GREEN	Data transmission at respective USB ports.
❻	Power LED	Steady BLUE	The device has powered up.
❼	Diagnostic LED	Flashing GREEN	It indicates that the firmware is corrupted.
❽	External Antennas	Foldable, non-detachable antennas	
❾	Reset	Push button	To reboot, press once. To reset password, press and hold the button for 5 seconds before releasing it. To restore factory default settings, press and hold the button for 8 seconds before releasing it.
❿	5 VDC	Power Input	
⓫	WAN (RJ45 Port)	WAN port connects to Cable/ADSL modem	
⓬	LAN RJ45 Ports 1,2,3	Integrated LAN Switch Ports	
⓭	USB Ports 1, 2,3,4	Integrated USB2.0 Ports	

9. Specification

Technical Specification	
Industrial Standards	***Wired:*** • IEEE 802.3 10Base-T • IEEE 802.3u 100Base-Tx • IEEE 802.3x Flow Control ***Wireless:*** • IEEE 802.11b • IEEE 802.11g
WAN Interface	1x Auto MDI/MDI-X RJ45 Ethernet Port for external Cable/ADSL modem
WAN Type	• Static IP • Dynamic IP • PPP over Ethernet (PPPoE) • Point to Point Tunneling Protocol (PPTP)
LAN/WLAN Interface	***Wired:*** • Integrated 3x Auto MDI/MDI-X RJ45 Ethernet Port for 10/100Mbps Switch ***Wireless:*** • Operating channels, frequency of: o 11 Channels 2.400~2.4835, US, Canada o 13 Channels, 2.400~2.4970, Europe o 4 Channels 2.400~2.4835, France • Direct Sequence Spread Spectrum modulation, Orthogonal Frequency Division Multiplexing modulation • Data rates: 108Mbps, 54Mbps, 48Mbps, 36Mbps, 24Mbps, 18Mbps, 12Mbps, 11Mbps, 9Mbps, 6Mbps, 5.5Mbps, 2Mbps, 1Mbps • Security: o 64-bit/128-bit WEP o WPA, WPA-PSK o Wireless Pseudo VLAN
USB2.0 Ports	***4X integrated USB ports supporting:*** • PC Web Camera • Print Server • Storage disk drive
IP Addressing	All Classful/Classless subnets
Built-in DHCP Server	Yes
DHCP Reservation	Yes
NAT Firewall	Yes
Stateful Packet Inspection (SPI) Firewall	Yes
Load-Balancing/Fail-Over Redundancy	Parallel Broadband
Virtual Server	IP and Port Forwarding, De-Militarized Zone hosting
IP Packet Filtering	Time-based, TCP Port, Source IP Filtering
URL Filtering	Yes
IP Routing	Static Routing Entry
VPN Client Pass-Through	PPTP, IPSec
Configuration Interface	Web-based Configuration Menus
Profile Backup and Restore	Yes
Firmware Upgradeable	Yes
Physical and Environment	Temperature: • Operating : 0°C to 40°C • Storage : -20°C to 70°C Humidity: • Operating : 10% to 80% RH • Storage : 5% to 90% rh
Physical Dimension	174mm x 104mm x 40 mm (L x W x H)

Manual Revision by Ann Tay
Manual Number: ***M-0431-V1.1C*** Version 1.1, November 2004

FCC NOTICE: This device has been tested and found to comply with the limits for a **Class B** digital device, pursuant to **Part 15 of the FCC Rules**. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses and can radiate radio frequency energy. If not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception which can be determined by turning the PC off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Increase the distance between the computer and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.
FCC Compliance Statement: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
ICES 003 Statement
This Class B digital apparatus complies with Canadian ICES- 003.

DECLARATION OF CONFORMITY: Compex, Inc. declares that the product:
Product Name: Compex Wireless-G Multimedia Gateway
Model No.: NetPassage 28G conforms to the following Product Standards:
Radiated Emission Standards: EN55022A, FCC Part 15 Class B
Conducted Emission Standards: EN60555Pt2 conducted emission; EN55022A conducted emission, FCC Part 15 Class B
Immunity Standards: IEC 801-2; IEC 801-3; IEC 801-4
Therefore, this product is in conformity with the following regional standards: FCC Class B — following the provisions of FCC Part 15 directive; CE Mark — following the provisions of the EC directive.

Manufacturer's Name Compex, Inc.
Address 4051 E. La Palma Ave.
Anaheim, CA 92807, USA
European Contact
ReadyLINK Network Technology GmbH

Technical Support
ReadyLINK Network Technology GmbH
Albert Einstein Straße 34/M21,
D-63322 Rödermark, Germany
Fax +49 6074-4-9 0668

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WARRANTY REGISTRATION CARD (M-0088-V2.3C)

COMPEX networks@work

You can register via Internet at: **http://www.cpx.com** *or* **http://www.compex.com.sg**

Or E-mail: **support@compex.com.sg** with the following information:

To activate the warranty, please complete this card and return to Compex within ninety (90) days of purchase date.

Product:	Purchase Date:	Model:	Serial No:
Name:	Title:	E-mail:	
Address:			
Postal/Zip Code:		Country:	
Phone: ( )			

How did you learn about Compex?	❒ Work	❒ Friend	❒ Internet	❒ Dealer	❒ Magazine	❒ Exhibition
	❒ Other:					

Note:
For purchases within U.S.A and Canada, please fax to Compex, Inc. at (714) 630-6521

For purchases outside U.S.A and Canada, please fax to Compex Systems Pte Ltd at (65) 6280-9947

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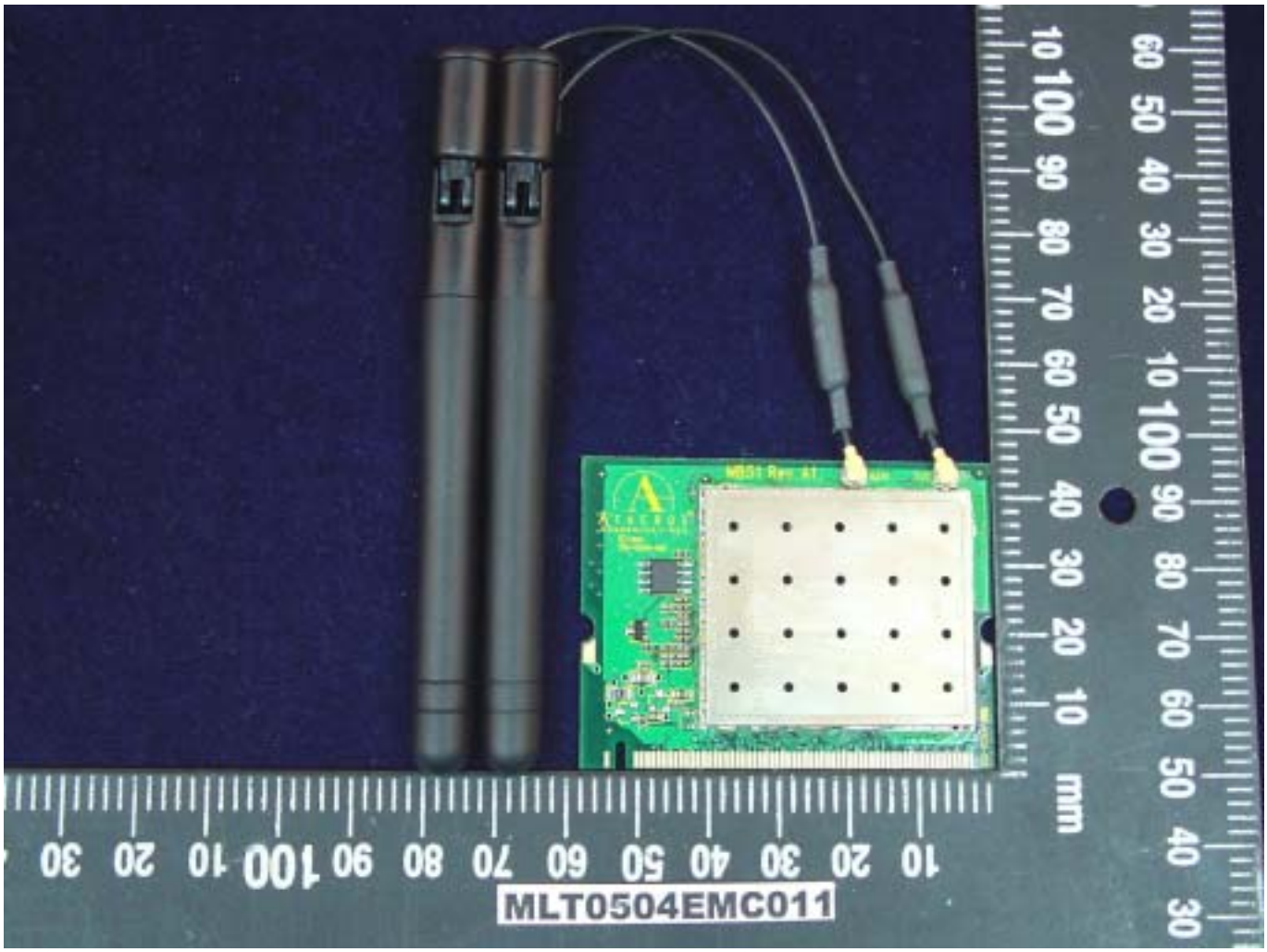
Appendix IV- EUT Photographs

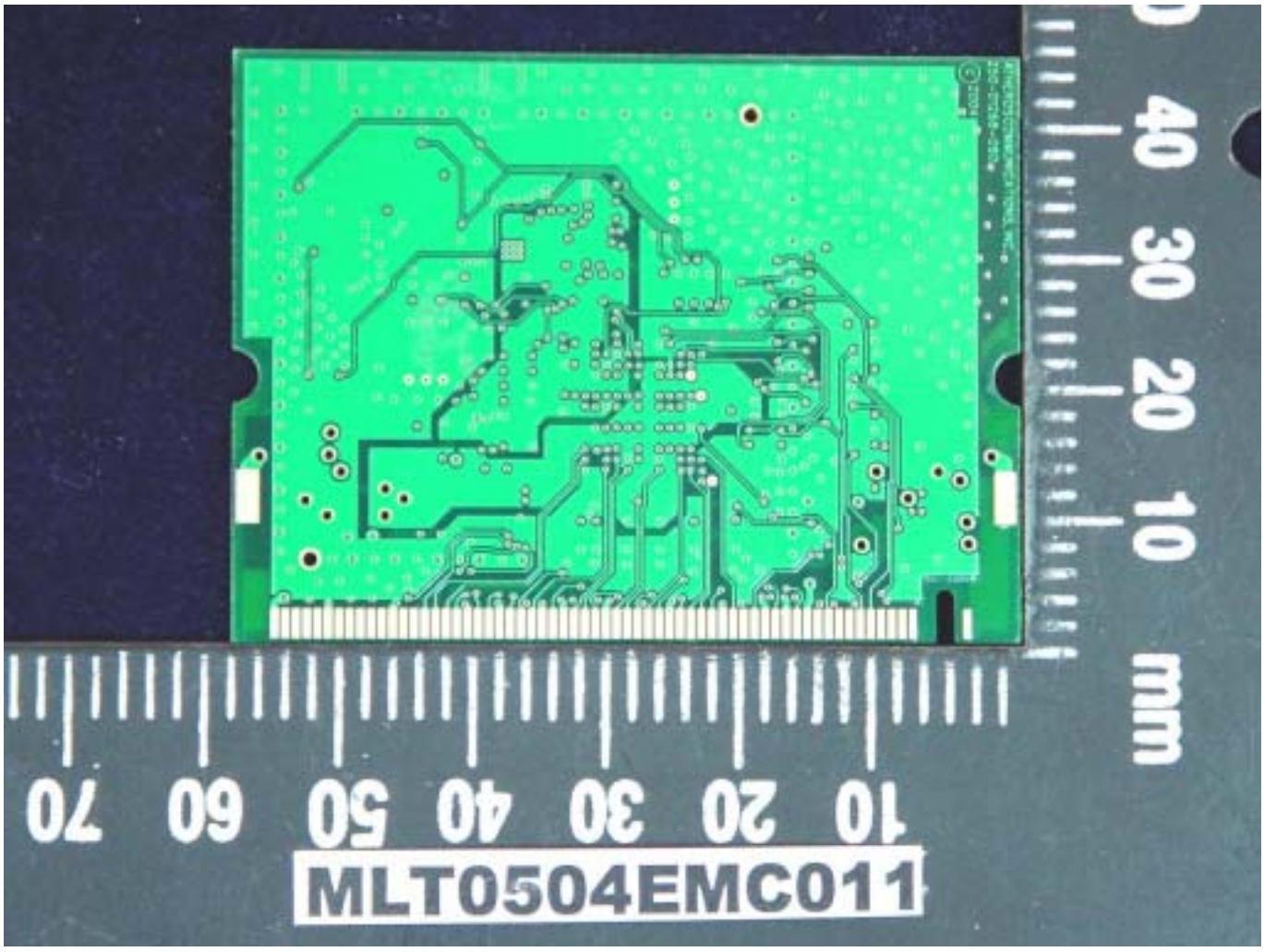
Appendix IV- EUT Photographs

Appendix IV- EUT Photographs (iWavePort WLM54G1A)

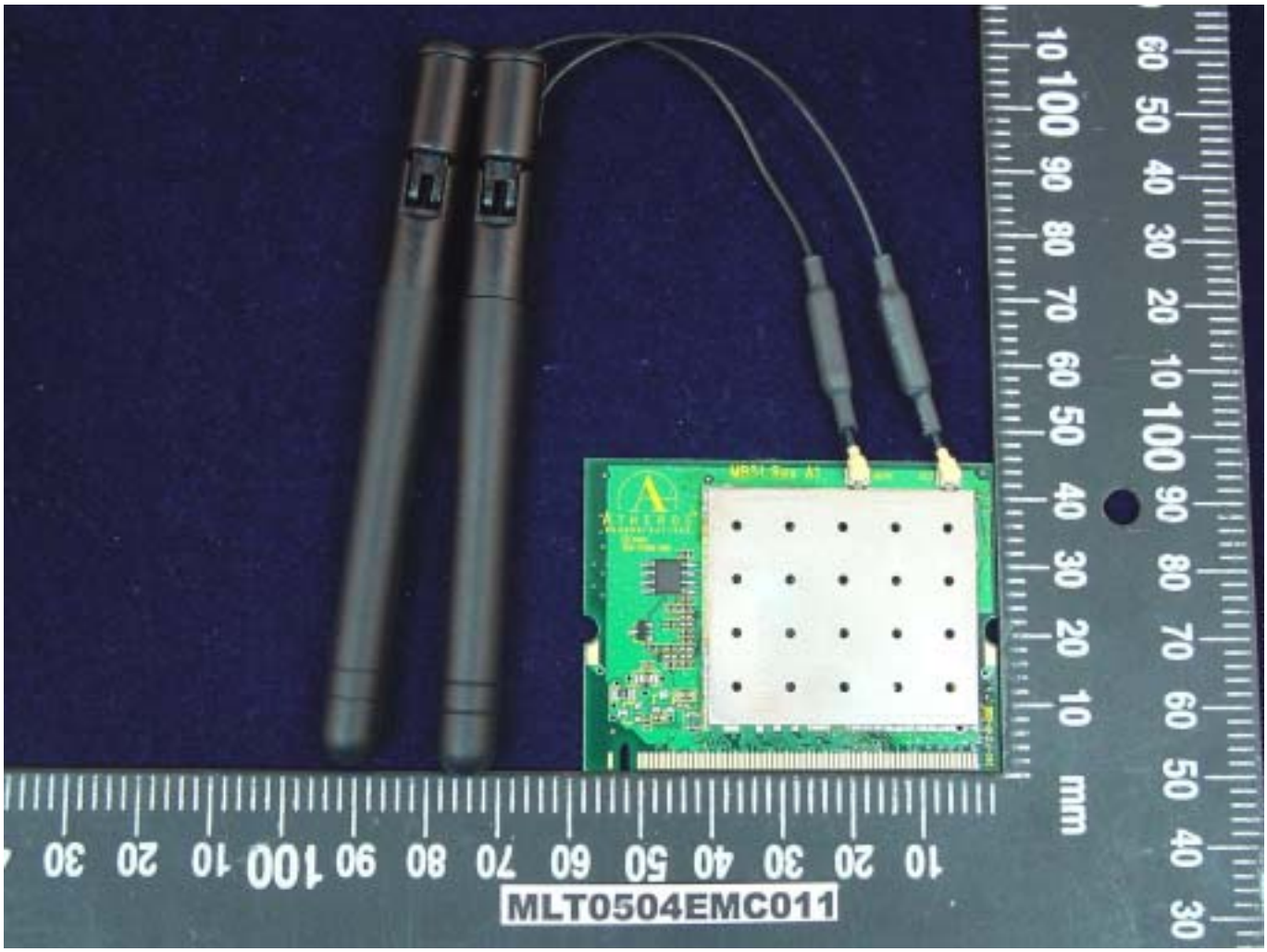


Appendix IV- EUT Photographs (iWavePort WLM54G1A)

Appendix IV- EUT Photographs (iWavePort WLM54G1A)



Appendix IV- EUT Photographs (iWavePort WLM54G1B)



Appendix IV- EUT Photographs (iWavePort WLM54G1B)

Appendix IV- EUT Photographs (iWavePort WLM54G1B)