

## ***EXHIBIT B***

### ***Test Report***

|                                  |                                                                                                  |
|----------------------------------|--------------------------------------------------------------------------------------------------|
| Report No.                       | W0115276                                                                                         |
| Specifications                   | FCC Part 15 Class B                                                                              |
| Test Method                      | ANSI C63.4 1992                                                                                  |
| Applicant address                | 4F, NO.539-2 CHUNG CHENG RD.,<br>HSIN TIEN, TAIPEI, TAIWAN, R.O.C.                               |
| Applicant Items tested Model No. | WELL Communication Co.,<br>Internal 56K Fax/Data/Voice modem card<br>FM-56PC-L (Sample # W01276) |
| Results Sample received data     | As detailed within this report<br>04/20/1998 (month / day / year)                                |
| Prepared by                      | <u>Robert Chung</u> project engineer                                                             |
| Authorized by                    | <u>Jacob Lin</u> Vice General Manager<br>(Jacob Lin)                                             |
| Issue date                       | <u>Apr. 29, 1998</u> (month / day / year)                                                        |
| Modifications                    | None                                                                                             |
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- (1) This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.
- (2) This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.

★FCC ID : JCH-FM56PCL

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## ***Chapter 1 Introduction***

### ***Description of EUT:***

This Fax/Data/Voice modem card is a data communication device. It is designed to install in the personal computer and makes your data equipment available to transmit and receive data via the public telephone network.

### ***Connections of EUT:***

- (1) Put the EUT into a personal computer's bus and screw it.
- (2) Line jack of EUT connects with a line cable to the PABX located remotely.
- (3) Phone jack of EUT connects with a telephone set.
- (4) Spk jack of EUT connects a pairs of speakers.
- (5) Mic jack of EUT connects a microphone.

### ***Test method:***

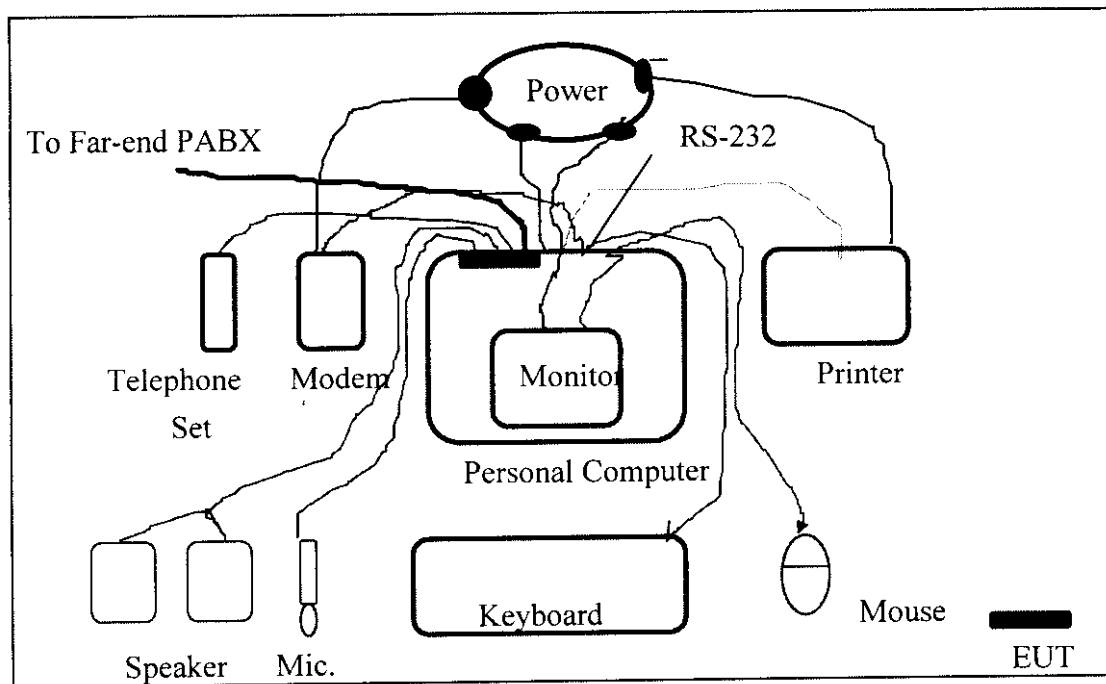
Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

During testing, the EUT was operated at "transmitting" and "receiving" mode simultaneously.

While testing, the transmitting rate was set to "AUTO" which means it transmitted the test file depending on the telephone line condition, normally the operating rate is the highest speed. The test placement as the photographs showed is the worst case emission placed. (If the emission is close to the ambient, the resolution BW and view resolution will be reduced and the data will be recorded by detection of maximum hold peak mode.)

***The testing configuration of test setup is showing in the next page.***

### Configuration of test setup



**Connections:**

PC:

- \*Serial A port --- a external modem
  - \*Serial B port --- a 76 cm shielded RS232 cable
  - \*Printer port --- a Printer
  - \*Keyboard port --- a Keyboard
  - \*Mouse port --- a Mouse
  - \*Monitor port --- a monitor
- (Each port on PC is connected with suitable device)

**EUT:**

- \*Line jack --- via 15 m RJ11C cable to PABX located remotely
- \*Phone jack --- via a 7 feet RJ11C cable to telephone set
- \*Spk. jack --- a pairs of speakers with 1.2 m long wire
- \*Mic. Jack --- a dynamic microphone with 3 m long wire

**List of support equipment****Conducted (Radiated) test:****PC : HP**

Model : Vectra VE2  
Serial No. : SG61803151 (SG61802786)  
FCC ID : HCJVECTRAVL5  
Power type : AC 117 VAC, switching  
Power cord : non-Shielded, 1.7m long, Plastic, no ferrite core

**Monitor : HP**

Model No. : D2084 (D2813)  
Serial No. : KR4397004 (TW63803597)  
FCC ID : CSYSC-428VSP (A3KM043)  
Power type : 117VAC, Switching  
Power cord : Non-Shielded, 3m long, no ferrite core  
Data cable : Shielded, 1.8m long, with ferrite core

**Keyboard : HP**

Model No. : C3757 #ABO (C3346A #ABO)  
Serial No. : C3757-60423 (C3346-60231)  
FCC ID : CIGE03614  
Power type : By PC  
Data cable : Shielded, 1.8m long, with ferrite core

**Printer : EPSON**

Model No. : P78PA (P70RA)  
Serial No. : 0EE0014030 (10010386)  
FCC ID : BKM9A8P70RA  
Power type : Linear  
Power cord : Non-shielded, 2m long, no ferrite core  
Data cable : Shielded, 1.84m long, no ferrite core (1.7m)

**Modem** : **ACEEX**  
Model No. : XDM-9624  
FCC ID : IFAXDM-9624  
Power type : Linear  
Power cord : Non-shielded, 1.9m long, no ferrite cord  
Data cable : RS232, Shielded, 1.2m long, no ferrite core  
RJ11C x 2, 7' long non-shielded, no ferrite core

**PABX** : **King Design**  
Model No. : KD8705-A  
Serial No. : GV101101186  
Power type : 110 VAC 50/60Hz  
Power cord : Non - Shielded

**Microphone** : **KOKA**  
Model : DM-515  
Power type : Dynamic  
Data cable : non-Shielded, 3m

**Speaker** : **J-S**  
Model : J-006  
Data cable : non-Shielded, 1.2 m

**Mouse** : **Hewlett Packard mouse**  
Model No. : C3751B  
Serial No. : LCA52707170  
FCC ID : DZL210582  
Power type : Powered by PC  
Power Cable : Non – Shielded. 5.5' long, Plastic hoods, No ferrite bead

## ***Chapter 2 Conducted emission test***

### ***Test condition and setup:***

All the equipment is placed and setup according to the ANSI C63.4 - 1992.

The EUT is assembled on a wooden table which is 80 cm high, is placed 40 cm from the back-wall which is a vertical conducting plane. One LISN is for EUT, the other LISN is for support equipment. They are all placed on the conductive ground. The EUT's LISN connect a line switch box for selecting L1 or L2, then connect to a preamplifier and spectrum.

The spectrum scans from 450KHz to 30MHz. Conducted emission levels are detected at max. peak mode. But if the max. peak mode failed, it will be measured by CISPR's quasi-peak detection mode.

While testing, there is a the worst-emission plot printed at peak detection mode, and there are more than 6 highest emissions relative to limit recorded. The plot is kept as the original data, not included in test report.

### ***List of test Instrument:***

| Instrument Name   | Model No. | Brand | Serial No. | <u>Calibration Date</u> |           |
|-------------------|-----------|-------|------------|-------------------------|-----------|
|                   |           |       |            | Last time               | Next time |
| Spectrum analyzer | 8591EM    | H P   | 3619A00821 | 10/06/97                | 10/06/98  |
| LISN (EUT)        | 3825/2    | EMCO  | 9411-2284  | 05/15/97                | 05/15/98  |
| Preamplifier      | 8447F     | H P   | 2944A03706 | 05/13/97                | 05/15/98  |
| Line switch box   | AC1-003   | TRC   | -----      | 05/15/97                | 05/15/98  |
| Line selector     | AC1-002   | TRC   | -----      | 05/15/97                | 05/15/98  |

The level of confidence of 95%, the uncertainty of measurement of conducted emission is  $\pm 2.4$  dB.

### ***Test Result: Pass (Appendix A)***

### ***Chapter 3 Radiated emission test***

#### ***Test condition and setup:***

**Pretest:** Prior to the final test (OATS test), the EUT is placed in a shielded enclosure, GTEM, and scan from 30MHz to 1GHz. This is done to ensure the radiation exactly emits from the EUT.

**Final test:** Final radiation measurements is made on a **3 - meter, open-field** test site. The EUT is placed on a nonconductive table which is 0.8 m height, the top surface is 1.0 x 1.5 meter. All the placement is according to ANSI C63.4 - 1992.

The spectrum is examined from 30 MHz to 1000 MHz measured by HP spectrum.

The EMCO whole range Antenna is used to measure frequency from 30 MHz to 1GHz. The final test is used the spectrum HP 8594EM.

Measure more than six top marked frequencies generated from pretest by computer step by step at each frequency. The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meters to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier which is made by TRC is used for improving sensitivity and precautions is taken to avoid overloading. The spectrum analyzer's 6dB bandwidth is set to 120 KHz, and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambient, the data will be rechecked by the tester and the corrected data will be written in the test data sheet. If the emission is just within the ambient, the data from GTEM will be taken as the final data.

#### ***List of test Instrument:***

#### **Calibration Date**

| <u>Instrument Name</u>                                       | <u>Model No.</u> | <u>Brand</u> | <u>Serial No.</u> | <u>Last</u> | <u>Next</u> |
|--------------------------------------------------------------|------------------|--------------|-------------------|-------------|-------------|
| Spectrum analyzer                                            | 8568B            | H P          | 3004A18617        | 05/15/97    | 05/15/98    |
| Quasi-peak Adapter                                           | 85650A           | H P          | 2521A00984        | 05/15/97    | 05/15/98    |
| RF Pre-selector                                              | 85685A           | H P          | 2947A01011        | 05/15/97    | 05/15/98    |
| Spectrum analyzer                                            | 8594EM           | H P          | 3619A00198        | 08/13/97    | 08/13/98    |
| Antenna (30M-2G Hz)                                          | 3142             | EMCO         | 9610-1094         | 10/30/97    | 10/30/98    |
| Open test side (Antenna, Amplify, cable calibrated together) |                  |              |                   | 05/15/97    | 05/15/98    |

The level of confidence of 95%, the uncertainty of measurement of radiated emission is  $\pm 4.96$  dB.

#### **Test Result: Pass (Appendix B)**

## Appendix A

### Conducted Emission Test Result:

Testing room : Temperature : 24.2 ° C Humidity : 80.7 % RH

#### Line 1

| Frequency<br>(MHz) | Amplitude<br>(dBuV) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|--------------------|---------------------|-------------------|----------------|
| 1.484              | 33.79               | 48.00             | -14.21         |
| 2.075              | 32.33               | 48.00             | -15.67         |
| 10.469             | 31.69               | 48.00             | -16.31         |
| 11.130             | 34.79               | 48.00             | -13.21         |
| 12.085             | 37.38               | 48.00             | -10.62         |
| 16.117             | 46.95               | 48.00             | -1.05          |
| 16.776             | 30.17               | 48.00             | -17.83         |
| 20.068             | 35.77               | 48.00             | -12.23         |
| 24.082             | 37.91               | 48.00             | -10.09         |
| 28.088             | 40.25               | 48.00             | -7.75          |
| ***                |                     |                   |                |

#### Line 2

| Frequency<br>(MHz) | Amplitude<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) |
|--------------------|---------------------|-----------------|----------------|
| 1.410              | 35.83               | 48.00           | -12.17         |
| 2.001              | 33.67               | 48.00           | -14.33         |
| 4.951              | 31.67               | 48.00           | -16.33         |
| 10.396             | 31.82               | 48.00           | -16.18         |
| 12.011             | 37.28               | 48.00           | -10.72         |
| 16.044             | 46.35               | 48.00           | -1.65          |
| 20.068             | 36.26               | 48.00           | -11.74         |
| 21.748             | 32.61               | 48.00           | -15.39         |
| 24.082             | 37.68               | 48.00           | -10.32         |
| 28.088             | 40.37               | 48.00           | -7.63          |

**Appendix B****Radiated Emission Test Result: (Horizontal)**

Test Conditions:

Testing room : Temperature : 18.80° C Humidity : 68 % RH

Testing site : Temperature : 18.90° C Humidity : 80 % RH

| Frequency | Reading Amplitude | Ant. Height | Table  | Correction Factors | Corrected Amplitude | Class B limit | Margin |
|-----------|-------------------|-------------|--------|--------------------|---------------------|---------------|--------|
| MHz       | dBuV              | m           | degree | dB/m               | dBuV/m              | dBuV/m        | dB     |

|         |       |      |     |        |       |       |        |
|---------|-------|------|-----|--------|-------|-------|--------|
| 112.897 | 47.68 | 1.00 | 24  | -12.60 | 35.08 | 43.50 | -8.42  |
| 141.121 | 47.95 | 1.00 | 222 | -12.41 | 35.54 | 43.50 | -7.96  |
| 169.349 | 47.70 | 1.00 | 142 | -11.40 | 36.30 | 43.50 | -7.20  |
| 366.913 | 51.87 | 1.00 | 124 | -17.42 | 34.45 | 46.00 | -11.55 |
| 423.361 | 55.77 | 1.00 | 94  | -16.66 | 39.11 | 46.00 | -6.89  |
| 451.585 | 49.76 | 1.00 | 164 | -15.99 | 33.77 | 46.00 | -12.23 |
| 663.377 | 38.69 | 1.00 | 3   | -8.42  | 30.27 | 46.00 | -15.73 |
| 705.604 | 39.04 | 1.00 | 253 | -7.04  | 32.00 | 46.00 | -14.00 |
| ***     |       |      |     |        |       |       |        |
|         |       |      |     |        |       |       |        |
|         |       |      |     |        |       |       |        |

Note:

1. Margin = Amplitude - limit, *if margin is minus means under limit.*
  2. Corrected Amplitude = Reading Amplitude + Correction Factors
  3. Correction factor = Antenna factor + ( Cable Loss - Amplitude gain)
- (For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

**Radiated Emission Test Result: (Vertical)**

| Frequency | Reading Amplitude | Ant. Height | Table  | Correction Factors | Corrected Amplitude | Class B limit | Margin |
|-----------|-------------------|-------------|--------|--------------------|---------------------|---------------|--------|
| MHz       | dBuV              | m           | degree | dB/m               | dBuV/m              | dBuV/m        | dB     |

|         |       |      |     |        |       |       |        |
|---------|-------|------|-----|--------|-------|-------|--------|
| 112.897 | 53.55 | 1.00 | 206 | -12.60 | 40.95 | 43.50 | -2.55  |
| 141.121 | 53.15 | 1.00 | 65  | -12.41 | 40.74 | 43.50 | -2.76  |
| 169.349 | 46.30 | 1.00 | 291 | -11.40 | 34.91 | 43.50 | -8.60  |
| 366.913 | 44.76 | 1.00 | 189 | -17.42 | 27.34 | 46.00 | -18.66 |
| 423.361 | 50.39 | 1.00 | 188 | -16.66 | 33.73 | 46.00 | -12.27 |
| 4510585 | 49.68 | 1.00 | 159 | -15.99 | 33.69 | 46.00 | -12.31 |
| 663.377 | 37.41 | 1.00 | 301 | -8.42  | 29.00 | 46.00 | -17.00 |
| 705.601 | 38.02 | 1.00 | 358 | -7.04  | 30.98 | 46.00 | -15.02 |
| ***     |       |      |     |        |       |       |        |
|         |       |      |     |        |       |       |        |
|         |       |      |     |        |       |       |        |

**Final statement :**

***This test report, measurements made by TRC are traceable to the NIST.***