

APPLICANT: Telian Corporation

FCC ID: NPQBA909

TABLE OF CONTENTS

TEST REPORT CONTAINING:

PAGE 1.....15.214(d) - SECURITY CODING INFORMATION AND TEST PROC.  
PAGE 2.....TEST PROCEDURE CONTINUED AND CIRCUIT DESCRIPTION  
PAGE 3.....RADIATION INTERFERENCE TEST DATA - BASE  
PAGE 4.....RADIATION INTERFERENCE TEST DATA - HANDSET  
PAGE 5.....OCCUPIED BANDWIDTH TEST DATA  
PAGE 6.....POWERLINE CONDUCTED TEST DATA

EXHIBITS CONTAINING:

EXHIBIT 1.....POWER OF ATTORNEY LETTER  
EXHIBIT 2.....BLOCK DIAGRAM - BASE MAIN  
EXHIBIT 3.....BLOCK DIAGRAM - BASE RF  
EXHIBIT 4.....BLOCK DIAGRAM - HANDSET RF  
EXHIBIT 5.....BLOCK DIAGRAM - HANDSET MAIN  
EXHIBIT 6.....SCHEMATIC - BASE MAIN  
EXHIBIT 7.....SCHEMATIC - BASE RF  
EXHIBIT 8.....SCHEMATIC - HANDSET MAIN  
EXHIBIT 9.....SCHEMATIC - HANDSET RF  
EXHIBIT 10.....FCC ID LABEL SAMPLES  
EXHIBIT 11.....SKETCH OF FCC ID LABEL LOCATIONS  
EXHIBIT 12.....EXTERNAL PHOTO FRONT VIEW HANDSET AND BASE  
EXHIBIT 13.....EXTERNAL PHOTO REAR VIEW HANDSET AND BASE  
EXHIBIT 14.....INTERNAL PHOTO - SOLDER HANDSET, COMPONENT BASE  
EXHIBIT 15.....INTERNAL PHOTO - COMPONENT HANDSET, SOLDER BASE  
EXHIBIT 16A-16L....CIRCUIT DESCRIPTIONS  
EXHIBIT 17A-17J....INSTRUCTION MANUAL  
EXHIBIT 18A....POWERLINE CONDUCTED INTERFERENCE PLOT - LINE 1  
EXHIBIT 18B....POWERLINE CONDUCTED INTEFERENCE PLOT - LINE 2  
EXHIBIT 19A....OCCUPIED BANDWIDTH PLOT - HANDSET - NO MODULATION  
EXHIBIT 19B....OCCUPIED BANDWIDTH PLOT - HANDSET - LOUD VOICE

APPLICANT: Telian Corporation

FCC ID: NPQBA909

REPORT #: F:\CUS\T\TELIAN\TEL239BK.RPT

PAGE: TABLE OF CONTENTS

SECURITY CODING INFORMATION

15.214(d) - THIS DEVICE COMPLIES WITH THE SECURITY CODE REQUIREMENTS OF 15.214(d)(1)(2) AND (3) BY MEANS OF THE FOLLOWING:

THIS PHONE IS EQUIPPED WITH A DIGITAL SECURITY SYSTEM WITH OVER 1 MILLION CODE COMBINATIONS.

WHEN MAKING A CALL, THE TELEPHONE SEARCHES THROUGH ITS 60 AVAILABLE CHANNELS AUTO CHANNEL SCAN TO FIND THE CLEAREST ONE.

THE RECEIVER PORTION OF THIS TELEPHONE, FCC ID: NPQBA909, WAS TESTED WITH PASSING RESULTS. A VERIFICATION REPORT HAS BEEN ISSUED PER FCC RULES PART 15.109.

TEST EQUIPMENT LIST

1. Spectrum Analyzer: Hewlett Packard 8566B - Opt 462, w/ preselector 85685A, & Quasi-Peak Adapter HP 85650A, & HP 8449B - OPT H02 Cal. 6/26/98
2. Signal Generator, Hewlett Packard 8640B, cal. 10/1/98
3. Eaton Biconnical Antenna Model 94455-1  
20-200 MHz Serial No. 0997 Cal. 5/15/98
4. Electro-Metric Dipole Kit, 20-1000 MHz, Model TDA-30 10/15/98
5. Electro-Metric Horn 1-18 GHz, Model RGA-180, Cal. 8/15/98
6. Electro-Metric Antennas Model TDS-25-1, TDS-25-2, 5/15/97
7. Electro-Metric Line Impedance Stabilization Network Model No. EM-7821, Serial No. 101; 100KHz-30MHz 50uH. 12/3/97
8. Electro-Metric Line Impedance Stabilization Network Model No. EM-7820, Serial No. 2682; 10KHz-30MHz 50uH. 12/3/97
9. Special low loss cable was used above 1 GHz
10. Tenney Temperature Chamber

TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD spectrum analyzer with a preselector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300KHz. The ambient temperature of the UUT was 47oF with a humidity of 52%.

APPLICANT: Telian Corporation

FCC ID: NPQBA909

REPORT #: F:\CUS\T\TELIAN\TEL239BK.RPT

PAGE #: 1

TEST PROCEDURE (CONT)

ANSI STANDARD C63.4-1992 10.1.7 MEASUREMENT PROCEDURES: The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The UUT was placed flush with the back of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSIC63.4-1992 with the EUT 40 cm from the vertical ground wall.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz)	METER READING + ACF = FS
33	20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-1992 using a 50uH LISN. Both lines were observed. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The ambient temperature of the UUT was 47oF with a humidity of 52%.

CIRCUIT\_DESCRIPTION:

SEE EXHIBIT 16A-16L.

APPLICANT: Telian Corporation  
FCC ID: NPQBA909  
REPORT #: F:\CUS\T\TELIAN\TEL239BK.RPT  
PAGE #: 2

APPLICANT: Telian Corporation  
 FCC ID: NPQBA909 (BASE)  
 NAME OF TEST: RADIATION INTERFERENCE  
 RULES PART NO.: 15.249  
 REQUIREMENTS: Carrier frequency will not exceed 94.0 dBuV/m

FREQUENCY	LEVEL
____MHz____	____dBuV/M____
902- 928 MHz:	54.0 dBuV/M
ABOVE 960 MHz:	54.0 dBuV/M

TEST DATA:

EMISSION	METER READING	COAX	ANTENNA	FIELD	MARGIN	ANT.
FREQUENCY	AT 3 METERS	LOSS	CORRECTION	STRENGTH	dB	POL.
MHz	dBuV	dB	FACTOR dB	dBuV/m@3m		
BASE TUNED FREQUENCY 902.23MHz						
902.67	43.40	2.90	24.19	70.49	9.51	V
1805.34	8.40	1.00	27.22	36.62	17.38	H
2708.01	0.80	1.14	29.77	31.71	22.29	V
3610.68	0.41	1.27	32.03	33.71	20.29	V
4513.35	0.40	1.41	33.58	35.38	18.62	V
5416.02	0.60	1.54	34.59	36.74	17.26	V
5416.02	0.60	1.54	34.59	36.74	17.26	V
6318.69	2.90	1.68	35.61	40.19	13.81	V
7221.36	2.50	1.81	36.62	40.94	13.06	H
8124.03	3.10	1.95	37.57	42.62	11.38	V
9026.70	2.70	2.05	38.18	42.93	11.07	V
BASE TUNED FREQUENCY 903.64MHz						
903.62	43.20	2.90	24.19	70.29	23.71	V
1807.24	8.30	1.00	27.23	36.53	17.47	H
2710.86	0.90	1.14	29.78	31.81	22.19	V
3614.48	0.80	1.27	32.04	34.11	19.89	V
4518.10	0.25	1.41	33.58	35.24	18.76	V
5421.72	0.60	1.54	34.60	36.74	17.26	V
6325.34	2.50	1.68	35.62	39.80	14.20	V
7228.96	2.50	1.82	36.63	40.95	13.05	H
8132.58	2.90	1.95	37.58	42.43	11.57	V
9036.20	3.00	2.05	38.18	43.24	10.76	V

SAMPLE CALCULATION: FSdBuV/m = MR(dBuV) + ACFdB.

METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD. Measurements were made at Timco Engineering, Inc. 6051 N.W. 19th Lane, Gainesville, FL 32605.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: S.S .SANDERS DATE: May 25, 1999

REPORT #: F:\CUS\T\TELIAN\TEL239BK.RPT  
 PAGE #: 3

APPLICANT: Telian Corporation  
 FCC ID: NPQBA909 (HANDSET)  
 NAME OF TEST: RADIATION INTERFERENCE PAGE 1 OF 1  
 RULES PART NO.: 15.249  
 REQUIREMENTS: Carrier frequency will not exceed 94.0 dBuV/m

FREQUENCY	LEVEL
____MHz____	____dBuV/M____
902- 928 MHz:	54.0 dBuV/M
ABOVE 960 MHz:	54.0 dBuV/M

TEST DATA:

EMISSION	METER READING	COAX	ANTENNA	FIELD	MARGIN	ANT.
FREQUENCY	AT 3 METERS	LOSS	CORRECTION	STRENGTH		
MHz	dBuV	dB	FACTOR dB	dBuV/m@3m	dB	POL.
HANDSET TUNED FREQUENCY 926.16MHz						
926.69	34.00	2.90	24.11	61.01	32.99	V
1853.38	19.90	1.01	27.41	48.32	5.68	V
2780.07	1.20	1.15	29.95	32.30	21.70	V
3706.76	0.80	1.29	32.27	34.35	19.65	V
4633.45	1.10	1.43	33.71	36.24	17.76	V
5560.14	0.90	1.56	34.76	37.22	16.78	V
6486.83	2.50	1.70	35.80	40.00	14.00	V
7413.52	3.00	1.84	36.84	41.68	12.32	V
8340.21	3.00	1.98	37.72	42.70	11.30	V
9266.90	2.80	2.08	38.34	43.22	10.78	V
HANDSET TUNED FREQUENCY 927.60MHz						
927.58	33.80	2.90	24.12	60.82	33.18	V
1855.16	20.00	1.01	27.42	48.43	5.57	V
2782.74	1.60	1.15	29.96	32.70	21.30	V
3710.32	0.60	1.29	32.28	34.16	19.84	V
4637.90	1.60	1.43	33.72	36.74	17.26	V
5565.48	0.90	1.57	34.76	37.23	16.77	V
6493.06	2.10	1.70	35.80	39.61	14.39	V
7420.64	3.30	1.84	36.85	41.99	12.01	V
8348.22	2.90	1.98	37.72	42.61	11.39	V
9275.80	3.20	2.08	38.34	43.62	10.38	V

SAMPLE CALCULATION:  $FSD_{BuV/m} = MR(dBuV) + ACF_{dB}$ .

METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD C63.4-1992 with the following exception: the unit was operated into its own antenna with the antenna at a height of four feet. Measurements were made at Timco Engineering, Inc. 6051 N.W. 19th Lane, Gainesville, FL 32605.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: S. S. SANDERS DATE: May 25, 1999

REPORT #: F:\CUS\T\TELIAN\TEL239BK.RPT  
 PAGE #: 4

APPLICANT: Telian Corporation  
FCC ID: NPQBA909  
NAME OF TEST: Occupied Bandwidth  
RULES PART NO.: 15.233  
REQUIREMENTS: The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits of 15.209, whichever permits the higher emission levels.

THE GRAPHS IN EXHIBITS 19A-19B REPRESENT THE EMISSIONS TAKEN FOR THIS DEVICE.

METHOD OF MEASUREMENT: A small sample of the transmitter output was fed into the spectrum analyzer and the above photo was taken. The vertical scale is set to -10 dBm per division. The horizontal scale is set to 5 kHz per division.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: S. S. SANDERS May 25, 1999

APPLICANT: Telian Corporation  
FCC ID: NPQBA909  
REPORT #: F:\CUS\T\TELIAN\TEL239BK.RPT  
PAGE #: 5

APPLICANT: Telian Corporation  
FCC ID: NPQBA909  
NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE  
RULES PART NUMBER: 15.207  
MINIMUM REQUIREMENTS: FREQUENCY LEVEL  
                          \_\_\_MHz\_\_\_        \_uV\_  
                          0.450-30        250  
TEST PROCEDURE: ANSI STANDARD C63.4-1992

THE HIGHEST EMISSION READ FOR LINE 1 WAS 28.475 uV @ 3.29 MHz.  
THE HIGHEST EMISSION READ FOR LINE 2 WAS 14.272 uV @ 1.16 MHz.

THE GRAPHS IN EXHIBITS 18A-18B REPRESENT THE EMISSIONS READ FOR  
POWERLINE CONDUCTED FOR THIS DEVICE.

TEST RESULTS: Both lines were observed. The measurements in-  
dicate that the unit DOES appear to meet the FCC requirements for  
this class of equipment.

PERFORMED BY: S. S. SANDERS DATE: May 25, 1999

APPLICANT: Telian Corporation  
FCC ID: NPQBA909  
REPORT #: F:\CUS\T\TELIAN\TEL239BK.RPT  
PAGE #: 6