



CERTIFICATION TEST REPORT
FOR THE
POWERSCAN RF, HANDHELD SCANNER
FCC PART 15 SUBPART C SECTION 15.109 & 15.249
COMPLIANCE

DATE OF ISSUE: OCTOBER 9, 2000

PREPARED FOR:

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Report No: FC00-097

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Date of test: September 13, 2000

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CKC Laboratories, Inc. has Letters of Acceptance through an MRA for the following agencies:
ACA/NATA (Australia); SABS (South Africa); SWEDAC (Sweden); TUV Rheinland-Germany; TUV Rheinland-Korea; TUV Rheinland-Russia; Radio Communications Agency (RA); NEMKO (Norway).

ADMINISTRATIVE INFORMATION

DATE OF TEST: September 13, 2000

PURPOSE OF TEST: To demonstrate the compliance of the PowerScan RF, Handheld Scanner, with the requirements for FCC Part 15 Subpart C Section 15.109 & 15.249 devices.

MANUFACTURER: PSC Scanning, Inc.
959 Terry Street
Eugene, OR 97402

REPRESENTATIVE: Jerry Kalina

TEST LOCATION: CKC Laboratories, Inc.
22105 Wilson River Hwy
Tillamook, OR 97141

TEST PERSONNEL: Mike Wilkinson

TEST METHOD: ANSI C63.4 1992

FREQUENCY RANGE TESTED: 150 kHz - 1000 MHz

EQUIPMENT UNDER TEST: **PowerScan RF**
Manuf: PSC Scanning, Inc.
Model: Handheld Scanner
Serial: R11
FCC ID: 09NPWRSCAN-HH

SUMMARY OF RESULTS

The PSC Scanning, Inc. PowerScan RF, Handheld Scanner, was tested in accordance with ANSI C63.4 1992 for compliance with FCC Part 15 Subpart C Section 15.109 & 15.249.

As received, the above equipment was found to be fully compliant with the limits of FCC Part 15 Subpart C Section 15.109 & 15.249. The results in this report apply only to the items tested, as identified herein.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

Handheld barcode scanner with base station.

MEASUREMENT UNCERTAINTY

Associated with data in this report is a ± 4 dB measurement uncertainty.

EUT OPERATING FREQUENCY

The EUT was operating at 904.29640, 916.133094 & 924.86 MHz.

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

REPORT OF MEASUREMENTS

The following tables report the highest worst case levels recorded during the tests performed on the PowerScan RF, Handheld Scanner. All readings taken are peak readings unless otherwise noted by a “Q” or “A”. The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: Fundamental Emission Levels									
FREQUENCY MHz	METER READING dBμV	CORRECTION FACTORS				CORRECTED READING dBμV/m	SPEC LIMIT dBμV/m	MARGIN DB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
904.268	90.8	22.1	-27.6	7.1		92.4	94.0	-1.6	V
916.123	91.0	22.2	-27.6	7.2		92.8	94.0	-1.2	H
924.800	90.2	22.3	-27.6	7.3		92.2	94.0	-1.8	H

Test Method: ANSI C63.4 1992
 Spec Limit : FCC Part 15.249
 Test Distance: 3 Meters
 Tested By: Mike Wilkinson

NOTES: H = Horizontal Polarization
 V = Vertical Polarization
 Q = Quasi Peak Reading
 A = Average Reading

COMMENTS: EUT is continuously transmitting with modulation on the following channels as indicated for each reading: **Ch 0 = 904.29640, MHz Ch 5 = 916.133094, Ch 9 = 924.86**. EUT tested in 3 orthogonal planes as indicated for each reading. The temperature was 21.6°C and the humidity was 53%.

Table 2: Six Highest Spurious Emission Levels - Transmit Mode (1 MHz - 10 GHz)

FREQUENCY MHz	METER READING dBμV	CORRECTION FACTORS				CORRECTED READING dBμV/m	SPEC LIMIT dBμV/m	MARGIN DB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
16.815	28.9	10.6	0.0	1.0		40.5	50.0	-9.5	N
17.780	23.5	10.5	0.0	1.0		35.0	50.0	-15.0	N
385.750	37.4	15.9	-27.3	4.0		30.0	46.0	-16.0	H
451.050	40.1	17.2	-27.7	4.9		34.5	46.0	-11.5	V
462.500	38.4	17.4	-27.8	5.0		33.0	46.0	-13.0	V
2712.800	38.0	29.2	-34.9	7.5		39.8	54.0	-14.2	V

Test Method: ANSI C63.4 1992
Spec Limit: FCC Part 15.249/209
Test Distance: 3 Meters
Tested By: Mike Wilkinson

NOTES: H = Horizontal Polarization
V = Vertical Polarization
N = No Polarization
Q = Quasi Peak Reading
A = Average Reading

COMMENTS: EUT is continuously transmitting with modulation on the following channels as indicated for each reading: Ch 0 = 904.29640, MHz Ch 5 = 916.133094, Ch 9 = 924.86. EUT tested in side position orthogonal plane. The temperature was 21.6 deg C and the humidity was 53%. Frequency range investigated was 1.0 MHz to 10.0 GHz. Lowest clock = 3.68 MHz.

Table 3: Six Highest Radiated Emission Levels - Receive Mode (30 MHz - 5 GHz)

FREQUENCY MHz	METER READING dBμV	CORRECTION FACTORS				CORRECTED READING dBμV/m	SPEC LIMIT dBμV/m	MARGIN DB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
385.750	37.4	15.9	-27.3	4.0		30.0	46.0	-16.0	H
451.050	40.1	17.2	-27.7	4.9		34.5	46.0	-11.5	V
462.500	38.4	17.4	-27.8	5.0		33.0	46.0	-13.0	V
914.999	48.4	24.2	-39.9	4.8		37.5	46.0	-8.5	H
926.825	51.0	24.3	-39.9	4.7		40.1	46.0	-5.9	H
935.576	48.4	24.3	-39.8	4.5		37.4	46.0	-8.6	H

Test Method: ANSI C63.4 1992
Spec Limit: FCC Part 15.109
Test Distance: 3 Meters
Tested By: Mike Wilkinson

NOTES: H = Horizontal Polarization
V = Vertical Polarization
Q = Quasi Peak Reading
A = Average Reading

COMMENTS: EUT is operating in the receive only mode on the following channels as indicated for each reading: Ch 0 = 904.29640, MHz Ch 5 = 916.133094, Ch 9 = 924.86. EUT tested in side position orthogonal plane. The temperature was 21.6°C and the humidity was 53%. Frequency range investigated was 30.0 MHz to 5.0 GHz. Highest tuned frequency = 924.86 MHz.

TABLE A

LIST OF TEST EQUIPMENT

Function	S/N	Calibration Date	Cal Due Date
HP 8574A EMI Receiver	3010A01076	07/25/2000	07/25/2001
HP 8447D Amplifier	2727A05392	02/14/2000	02/14/2001
Chase CBL6111C Bilog Antenna	2455	06/17/2000	06/17/2001
HP 83017A Amplifier	3123A00321	10/21/1999	10/21/2000
EMCO 3115 1-18 GHz Horn Antenna	9006-4854	02/17/2000	02/17/2001
EMCO 6502 Mag Loop Antenna	2156	01/26/2000	01/26/2001
HP 8593EM EMC Analyzer	3624A00159	10/05/1999	10/05/2000

EUT SETUP

The equipment under test (EUT) listed was set up in a manner that represented its normal use. Any special conditions required for the EUT to operate normally are identified in the comments that accompany Table 1 for fundamental emission levels, Table 2 for spurious emission levels and Table 3 for receive mode levels. Additionally, a complete description of the EUT is included on the information sheets contained in Appendix A.

During radiated emissions testing, the EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters. This configuration is typical for radiated emissions testing of table top devices.

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect the radiated emissions data for the PowerScan RF, Handheld Scanner. For frequencies below 30 MHz, the magnetic loop antenna was used. For radiated measurements between 30 to 1000 MHz, the biconilog antenna was used. Above 1000 MHz, the horn antenna was used. All antennas were located at a distance of 3 meters from the edge of the EUT.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dB μ V, and a vertical scale of 10 dB per division.

TABLE B: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	1 MHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	10 GHz	1 MHz

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in Tables 1, 2 and 3 indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data for the PowerScan RF, Handheld Scanner.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

TEST METHODS

The radiated emissions data of the PowerScan RF, Handheld Scanner, was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the "Sample Calculations". The corrected data was then compared to the FCC Part 15, Subpart C, Sections 15.249 & 15.109 emissions limits to determine compliance.

Preliminary and final measurements were taken in order to better ensure that all emissions from the EUT were found and maximized.

Radiated Emissions Testing

During the preliminary radiated scan, the EUT was powered up and operating in its defined test mode. The magnetic loop antenna was used to scan for frequencies below 30 MHz. The frequency range of 30 MHz - 1000 MHz was scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical polarity. During this scan, the turntable was rotated and all peaks, which were at or near the limit, were recorded. Lastly, a scan of the FM band from 88 - 110 MHz was made, using a reduced resolution bandwidth and a reduced frequency span. The biconilog antenna was changed to the horizontal polarity and the above steps were repeated. The horn antenna was used to scan for frequencies above 1000 MHz. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

For the final radiated scan, a thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable as needed. Comparison with the previously recorded measurements was then made.

Using the peak readings from both scans as a guide, the test engineer then maximized the readings with respect to the table rotation, and antenna height. Photographs showing the final worst case configuration of the EUT are contained in Appendix A.

TRANSMITTER CHARACTERISTICS

Band Edge Measurements

The fundamental frequency was kept within the permitted band 902 – 928 MHz. Refer to Appendix B for the band edge plots.

Power Output FCC Part 15.249 (a)

The maximum ERP of this transmitter was measured at a test distance of three meters, utilizing all three channels. This measurement was made with the EUT's integral antenna, for there is no provision for connecting an external antenna.

SAMPLE CALCULATIONS

The basic spectrum analyzer reading was converted using correction factors as shown in the six highest emissions readings in Tables 1 through 3. For radiated emissions in dB μ V/m, the spectrum analyzer reading in dB μ V was corrected by using the following formula:

$$\begin{aligned} & \text{Meter reading (dB}\mu\text{V)} \\ & + \text{Antenna Factor (dB)} \\ & + \text{Cable Loss (dB)} \\ & - \text{Distance Correction (dB)} \\ & - \text{Pre-amplifier Gain (dB)} \\ & = \text{Corrected Reading (dB}\mu\text{V/m)} \end{aligned}$$

This reading was then compared to the applicable specification limit to determine compliance.

A typical data sheet will display the following in column format:

#	Freq	Rdng	Amp-A Cbl-2	Cable Horn	Bilog Mag L	Cable 26.5	Dist	Corr	Spec	Margin	Polar
---	------	------	----------------	---------------	----------------	---------------	------	------	------	--------	-------

means reading number

Freq is the frequency in MHz of the obtained reading.

Rdng is the reading obtained on the spectrum analyzer in dB μ V.

Amp-A is short for the preamplifier factor or gain in dB.

Bilog is the biconilog antenna factor in dB.

Horn is the horn antenna factor in dB.

Mag L is the magnetic loop antenna factor in dB.

26.5 is the high frequency preamplifier factor or gain in dB.

Cable is the cable loss in dB of the coaxial cable on the OATS.

Cbl-2 is the cable loss in dB of the high frequency coaxial cable on the OATS.

Dist is the distance factor (in dB). It is used when testing at a different test distance than the one stated in the spec.

Corr is the corrected reading which is now in dB μ V/m (field strength).

Spec is the specification limit (dB) stated in the agency's regulations.

Margin is the closeness to the specified limit in dB; + is over and - is under the limit.

Polar is the Polarity of the antenna with respect to earth.

APPENDIX A

INFORMATION ABOUT THE EQUIPMENT UNDER TEST

INFORMATION ABOUT THE EQUIPMENT UNDER TEST	
Test Software/Firmware:	N/A
CRT was displaying:	N/A
Power Supply Manufacturer:	Ault
Power Supply Part Number:	4004-0705
AC Line Filter Manufacturer:	N/A
AC Line Filter Part Number:	N/A
The AC power cord is removable and is NOT shielded	
Line voltage used during testing: VDC	

I/O PORTS	
Type	#
N/A	1

CRYSTAL OSCILLATORS	
Type	Freq. In MHz
Y2	14.7456

PRINTED CIRCUIT BOARDS				
Function	Model & Rev	Clocks, MHz	Layers	Location
Four Slot Battery Charger				

REQUIRED EUT CHANGES TO COMPLY:
None

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Face View

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Side View

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back Vertical View

PHOTOGRAPH SHOWING RADIATED EMISSIONS

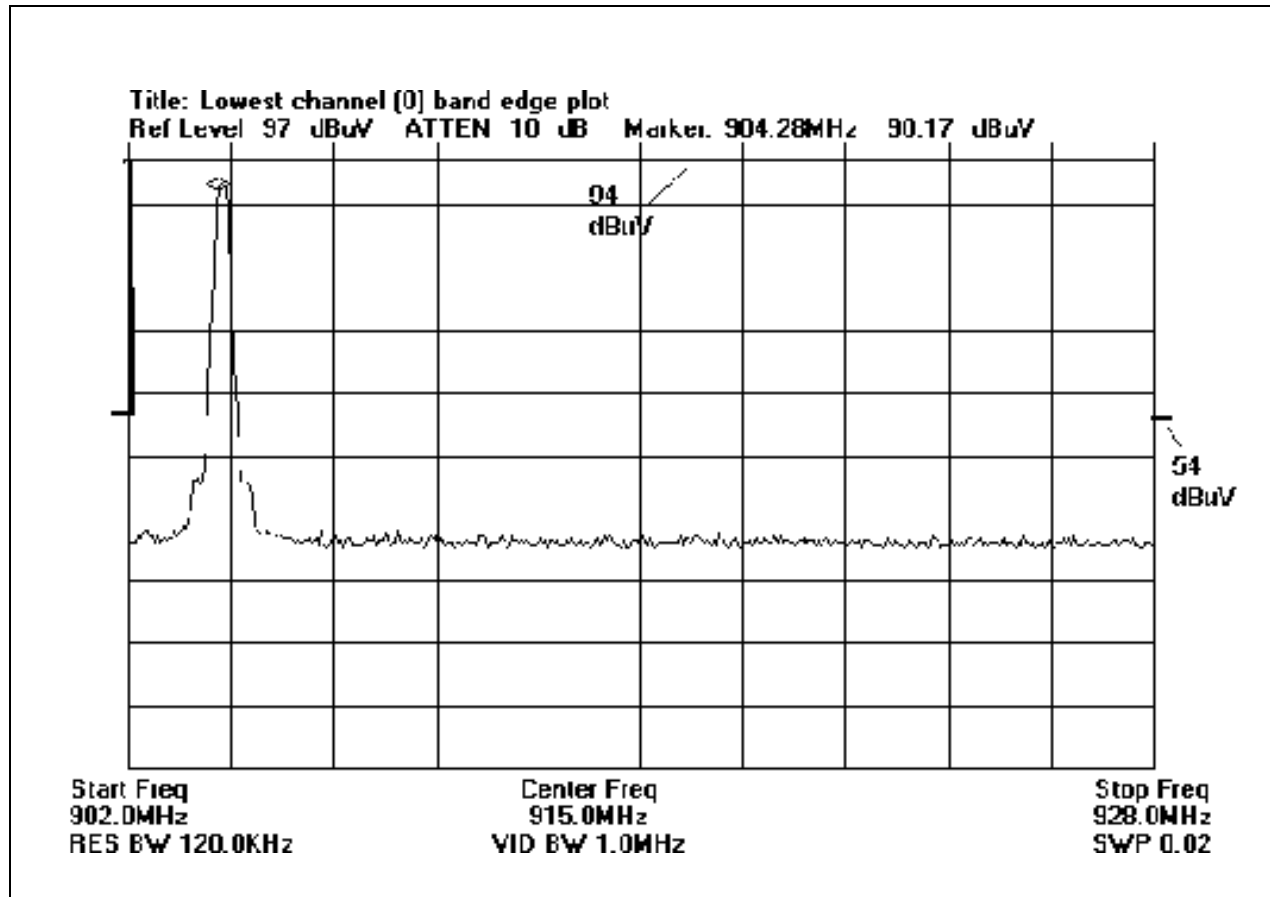


Radiated Emissions - Front Vertical View

APPENDIX B

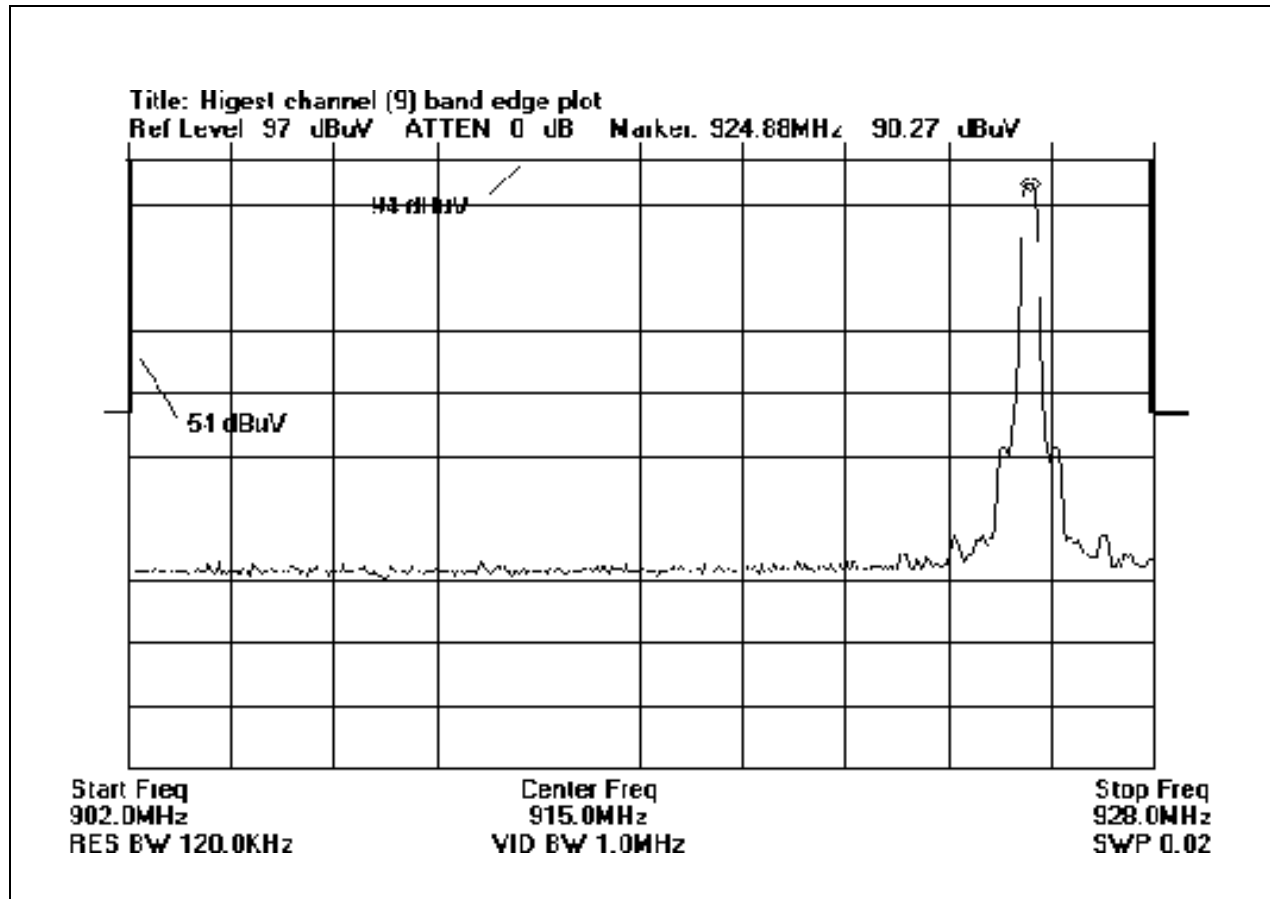
MEASUREMENT DATA SHEETS

Band Edge Plot - Channel 0



Channel 0 - 904.29640 MHz

Band Edge Plot - Channel 9



Channel 9 - 924.86 MHz

Test Location: CKC Laboratories, Inc. • 22105 Wilson River Hwy • Tillamook, OR 97141 • 800 500-4EMC

Customer: **PSC Scanning, Inc.**

Specification: **FCC15.249**

Work Order #: **75197**

Date: 09/13/2000

Test Type: **Fundamental Power**

Time: 10:08:19

Equipment: **Handheld BAR Scanner 900 MHz**

Sequence#: 2

Manufacturer: PSC Scanning, Inc.

Tested By: Mike Wilkinson

Model: PowerScan RF Handheld

S/N: R11

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Handheld BAR Scanner 900 MHz*	PSC Scanning, Inc.	PowerScan RF Handheld	R11

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

EUT is continuously transmitting with modulation on the following channels as indicated for each reading: Ch 0 = 904.29640, MHz Ch 5 = 916.133094, Ch 9 = 924.86. EUT tested in 3 orthogonal planes as indicated for each reading. The temperature was 21.6°C and the humidity was 53%.

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	Amp-A Cable Bilog			Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
			dB	dB	dB					
1	916.123M	91.0	-27.6	+7.2	+22.2	+0.0	92.8	94.0	-1.2	Horiz
								CH 5, Side Position		
2	916.063M	90.9	-27.6	+7.2	+22.2	+0.0	92.7	94.0	-1.3	Vert
								Ch 5, Vertical Postion		
3	904.268M	90.8	-27.6	+7.1	+22.1	+0.0	92.4	94.0	-1.6	Vert
								Ch 0, Vertical Postion		
4	904.323M	90.6	-27.6	+7.1	+22.1	+0.0	92.2	94.0	-1.8	Horiz
								Ch 0, Side Postiion		
5	924.800M	90.2	-27.6	+7.3	+22.3	+0.0	92.2	94.0	-1.8	Horiz
								Ch 9, Side Postion		
6	916.093M	90.3	-27.6	+7.2	+22.2	+0.0	92.1	94.0	-1.9	Horiz
								Ch 5, Face Postion		
7	924.773M	89.8	-27.6	+7.3	+22.3	+0.0	91.8	94.0	-2.2	Vert
								Ch 9, Vertical Postion		
8	904.323M	89.4	-27.6	+7.1	+22.1	+0.0	91.0	94.0	-3.0	Horiz
								Ch 0, Face Postiion		
9	924.895M	85.8	-27.6	+7.3	+22.3	+0.0	87.8	94.0	-6.2	Horiz
								Ch 9, Face Postiion		
10	916.093M	84.9	-27.6	+7.2	+22.2	+0.0	86.7	94.0	-7.3	Vert
								Ch 5, Face Postion		
11	904.255M	84.6	-27.6	+7.1	+22.1	+0.0	86.2	94.0	-7.8	Vert
								Ch 0, Side Postiion		

12	904.330M	84.5	-27.6	+7.1	+22.1	+0.0	86.1	94.0	-7.9	Vert
								Ch 0, Face Postiion		
13	924.795M	81.2	-27.6	+7.3	+22.3	+0.0	83.2	94.0	-10.8	Vert
								Ch 9, Side Postion		
14	916.113M	81.2	-27.6	+7.2	+22.2	+0.0	83.0	94.0	-11.0	Vert
								Ch 5, Side Postiion		
15	916.103M	80.7	-27.6	+7.2	+22.2	+0.0	82.5	94.0	-11.5	Horiz
								Ch 5 Vertical Position		
16	904.330M	80.7	-27.6	+7.1	+22.1	+0.0	82.3	94.0	-11.7	Horiz
								Ch 0, Vertical Postiion		
17	924.810M	77.4	-27.6	+7.3	+22.3	+0.0	79.4	94.0	-14.6	Vert
								Ch 9, Face Postiion		
18	924.780M	75.3	-27.6	+7.3	+22.3	+0.0	77.3	94.0	-16.7	Horiz
								Ch 9, Vertical Postion		

Test Location: CKC Laboratories, Inc. • 22105 Wilson River Hwy • Tillamook, OR 97141 • 800 500-4EMC

Customer: **PSC Scanning, Inc.**

Specification: **FCC15.249**

Work Order #: **75197**

Date: 09/13/2000

Test Type: **Harmonics & Spurious**

Time: 15:51:10

Equipment: **Handheld BAR Scanner 900 MHz**

Sequence#: 3

Manufacturer: PSC Scanning, Inc.

Tested By: Mike Wilkinson

Model: PowerScan RF Handheld

S/N: R11

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Handheld BAR Scanner 900 MHz*	PSC Scanning, Inc.	PowerScan RF Handheld	R11

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

EUT is continuously transmitting with modulation on the following channels as indicated for each reading: Ch 0 = 904.29640, MHz Ch 5 = 916.133094, Ch 9 = 924.86. EUT tested in side position orthogonal plane. The temperature was 21.6°C and the humidity was 53%. Frequency range investigated was 1.0 MHz to 10.0 GHz. Lowest clock = 3.68 MHz.

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp-A Cbl-2 dB	Cable Horn dB	Bilog Mag L dB	Cable 26.5 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	916.242M	91.0	-27.6 +0.0	+7.2 +0.0	+22.2 +0.0	+0.0 +0.0	+0.0	92.8	94.0 Ch 5 Fundamental	-1.2	Horiz
2	924.908M	90.2	-27.6 +0.0	+7.3 +0.0	+22.3 +0.0	+0.0 +0.0	+0.0	92.2	94.0 Ch 9 Fundamental	-1.8	Horiz
3	904.334M	90.6	-27.6 +0.0	+7.1 +0.0	+22.1 +0.0	+0.0 +0.0	+0.0	92.2	94.0 Ch 0 Fundamental	-1.8	Horiz
4	16.815M	28.9	+0.0 +0.0	+1.0 +0.0	+0.0 +10.6	+0.0 +0.0	+0.0	40.5	50.0 Ch 0	-9.5	None
5	451.050M	40.1	-27.7 +0.0	+4.9 +0.0	+17.2 +0.0	+0.0 +0.0	+0.0	34.5	46.0 Ch 0	-11.5	Vert
6	462.500M	38.4	-27.8 +0.0	+5.0 +0.0	+17.4 +0.0	+0.0 +0.0	+0.0	33.0	46.0 Ch 5	-13.0	Vert
7	2712.800M	38.0	+0.0 +6.5	+0.0 +29.2	+0.0 +0.0	+1.0 -34.9	+0.0	39.8	54.0 Ch 0	-14.2	Vert
8	2748.533M	37.5	+0.0 +6.6	+0.0 +29.2	+0.0 +0.0	+0.9 -35.0	+0.0	39.2	54.0 Ch 5	-14.8	Vert
9	17.780M	23.5	+0.0 +0.0	+1.0 +0.0	+0.0 +10.5	+0.0 +0.0	+0.0	35.0	50.0 Ch 5	-15.0	None
10	2774.471M	37.2	+0.0 +6.6	+0.0 +29.1	+0.0 +0.0	+0.8 -35.0	+0.0	38.7	54.0 Ch 9	-15.3	Vert
11	385.750M	37.4	-27.3 +0.0	+4.0 +0.0	+15.9 +0.0	+0.0 +0.0	+0.0	30.0	46.0 Ch 5	-16.0	Horiz
12	15.978M	22.2	+0.0 +0.0	+1.0 +0.0	+0.0 +10.6	+0.0 +0.0	+0.0	33.8	50.0 Ch 9	-16.2	None

13	1849.646M	41.5	+0.0 +5.2	+0.0 +27.1	+0.0 +0.0	+0.5 -36.6	+0.0	37.7	54.0 Ch 9	-16.3	Vert
14	1832.353M	41.2	+0.0 +5.1	+0.0 +27.2	+0.0 +0.0	+0.6 -36.7	+0.0	37.4	54.0 Ch 5	-16.6	Vert
15	495.800M	34.0	-28.0 +0.0	+5.2 +0.0	+17.9 +0.0	+0.0 +0.0	+0.0	29.1	46.0 Ch 0	-16.9	Horiz
16	1808.668M	40.5	+0.0 +5.0	+0.0 +27.3	+0.0 +0.0	+0.7 -36.8	+0.0	36.7	54.0 Ch 0	-17.3	Vert
17	1832.330M	40.0	+0.0 +5.1	+0.0 +27.2	+0.0 +0.0	+0.6 -36.7	+0.0	36.2	54.0 Ch 5	-17.8	Horiz
18	1849.648M	39.8	+0.0 +5.2	+0.0 +27.1	+0.0 +0.0	+0.5 -36.6	+0.0	36.0	54.0 Ch 9	-18.0	Horiz
19	1808.701M	38.1	+0.0 +5.0	+0.0 +27.3	+0.0 +0.0	+0.7 -36.8	+0.0	34.3	54.0 Ch 0	-19.7	Horiz
20	324.880M	34.5	-26.8 +0.0	+4.1 +0.0	+14.5 +0.0	+0.0 +0.0	+0.0	26.3	46.0 Ch 5	-19.7	Horiz
21	324.190M	34.4	-26.8 +0.0	+4.1 +0.0	+14.4 +0.0	+0.0 +0.0	+0.0	26.1	46.0 Ch 5	-19.9	Vert
22	388.500M	32.7	-27.4 +0.0	+4.0 +0.0	+16.0 +0.0	+0.0 +0.0	+0.0	25.3	46.0 Ch 0	-20.7	Horiz
23	280.500M	33.1	-26.7 +0.0	+3.9 +0.0	+13.4 +0.0	+0.0 +0.0	+0.0	23.7	46.0 Ch 0	-22.3	Horiz
24	269.600M	31.9	-26.7 +0.0	+3.8 +0.0	+13.1 +0.0	+0.0 +0.0	+0.0	22.1	46.0 Ch 5	-23.9	Vert
25	272.000M	31.4	-26.7 +0.0	+3.8 +0.0	+13.2 +0.0	+0.0 +0.0	+0.0	21.7	46.0 Ch 9	-24.3	Horiz
26	235.925M	31.2	-26.8 +0.0	+3.5 +0.0	+12.0 +0.0	+0.0 +0.0	+0.0	19.9	46.0 Ch 9	-26.1	Horiz
27	236.448M	30.8	-26.8 +0.0	+3.5 +0.0	+12.0 +0.0	+0.0 +0.0	+0.0	19.5	46.0 Ch 9	-26.5	Vert

Test Location: CKC Laboratories, Inc. • 22105 Wilson River Hwy • Tillamook, OR 97141 • 800 500-4EMC

Customer: **PSC Scanning, Inc.**

Specification: **FCC 15.109**

Work Order #: **75197**

Date: 09/13/2000

Test Type: **Maximized Emissions**

Time: 16:35:58

Equipment: **Handheld BAR Scanner 900 MHz**

Sequence#: 3

Manufacturer: PSC Scanning, Inc.

Tested By: Mike Wilkinson

Model: PowerScan RF Handheld

S/N: R11

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Handheld BAR Scanner 900 MHz*	PSC Scanning, Inc.	PowerScan RF Handheld	R11

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

EUT is operating in the receive only mode on the following channels as indicated for each reading: Ch 0 = 904.29640, MHz Ch 5 = 916.133094, Ch 9 = 924.86. EUT tested in side position orthogonal plane. The temperature was 21.6°C and the humidity was 53%. Frequency range investigated was 30.0 MHz to 5.0 GHz. Highest tuned frequency = 924.86 MHz.

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp-A Cbl-2 dB	Cable Horn dB	Bilog 26.5 dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	926.825M	51.0	+0.0 +4.0	+0.0 +24.3	+0.0 -39.9	+0.7	+0.0	40.1	46.0 Ch 5	-5.9	Horiz
2	914.999M	48.4	+0.0 +4.2	+0.0 +24.2	+0.0 -39.9	+0.6	+0.0	37.5	46.0 Ch 0	-8.5	Horiz
3	935.576M	48.4	+0.0 +3.8	+0.0 +24.3	+0.0 -39.8	+0.7	+0.0	37.4	46.0	-8.6	Horiz
4	451.050M	40.1	-27.7 +0.0	+4.9 +0.0	+17.2 +0.0	+0.0	+0.0	34.5	46.0 Ch 0	-11.5	Vert
5	462.500M	38.4	-27.8 +0.0	+5.0 +0.0	+17.4 +0.0	+0.0	+0.0	33.0	46.0 Ch 5	-13.0	Vert
6	385.750M	37.4	-27.3 +0.0	+4.0 +0.0	+15.9 +0.0	+0.0	+0.0	30.0	46.0 Ch 5	-16.0	Horiz
7	495.800M	34.0	-28.0 +0.0	+5.2 +0.0	+17.9 +0.0	+0.0	+0.0	29.1	46.0 Ch 0	-16.9	Horiz
8	324.880M	34.5	-26.8 +0.0	+4.1 +0.0	+14.5 +0.0	+0.0	+0.0	26.3	46.0 Ch 5	-19.7	Horiz
9	324.190M	34.4	-26.8 +0.0	+4.1 +0.0	+14.4 +0.0	+0.0	+0.0	26.1	46.0 Ch 5	-19.9	Vert
10	388.500M	32.7	-27.4 +0.0	+4.0 +0.0	+16.0 +0.0	+0.0	+0.0	25.3	46.0 Ch 0	-20.7	Horiz
11	280.500M	33.1	-26.7 +0.0	+3.9 +0.0	+13.4 +0.0	+0.0	+0.0	23.7	46.0 Ch 0	-22.3	Horiz
12	269.600M	31.9	-26.7 +0.0	+3.8 +0.0	+13.1 +0.0	+0.0	+0.0	22.1	46.0 Ch 5	-23.9	Vert

13	272.000M	31.4	-26.7 +0.0	+3.8 +0.0	+13.2 +0.0	+0.0	+0.0	21.7	46.0 Ch 9	-24.3	Horiz
14	235.925M	31.2	-26.8 +0.0	+3.5 +0.0	+12.0 +0.0	+0.0	+0.0	19.9	46.0 Ch 9	-26.1	Horiz
15	236.448M	30.8	-26.8 +0.0	+3.5 +0.0	+12.0 +0.0	+0.0	+0.0	19.5	46.0 Ch 9	-26.5	Vert