Reg. No. DAT-P-061/95-10a

ACCREDITED
EMC/SAFETY

CERTIFICATION TEST REPORT

FOR THE

POWERSCAN RF, BASE STATION

FCC PART 15 SUBPART C SECTIONS 15.209, 15.207 & 15.249

COMPLIANCE

DATE OF ISSUE: OCTOBER 9, 2000

PREPARED FOR:

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Eugene, OR 97402

P.O. No: 50140
W.O. No: 75197

Report No: FC00-098

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Date of test: September 14, 2000

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DATech (Germany); A2LA (USA); FCC (USA); VCCI (Japan); BSMI (Taiwan); HOKLAS (Hong Kong).
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 14, 2000
PURPOSE OF TEST:	To demonstrate the compliance of the PowerScan RF, Base Station 900 MHz, with the requirements for FCC Part 15 Subpart C Sections 15.109, 15.207 & 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:	450 kHz - 10 GHz
EQUIPMENT UNDER TEST:	**PowerScan RF** Manuf: PSC Scanning, Inc. Model: Base Station 900 MHz Serial: 1305 FCC ID: 09NPWRSCAN-BS (pending)

SUMMARY OF RESULTS

The PSC Scanning, Inc. PowerScan RF, Base Station, was tested in accordance with ANSI C63.4 1992 for compliance with FCC Part 15 Subpart C Sections 15.109, 15.207 & 15.249.

As received, the above equipment was found to be fully compliant with the limits of FCC Part 15 Subpart C Sections 15.109, 15.207 & 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 ±4dB 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 tested with the following peripheral device(s):

Termination Box
Manuf: PSC Scanning, Inc.
Model: Keyboard Wedge/RS232
Serial: 854-105-001

REPORT OF MEASUREMENTS

The following tables report the highest worst case levels recorded during the tests performed on the PowerScan RF, Base Station 900 MHz. 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 Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN DB	NOTES
904.330	89.3	22.1	-27.6	7.1		90.9	94.0	-3.1	V
916.099	90.1	22.2	-27.6	7.2		91.9	94.0	-2.1	V
924.783	91.0	22.3	-27.6	7.3		93.0	94.0	-1.0	V

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 the wall mount position. This is the worst case as found during preliminary testing. The temperature was 21.3°C and the humidity was 55%.

Table 2: Six Highest Spurious Emission Levels - Transmit Mode (1 MHz - 10 GHz)									
	METER	CORRECTION FACTORS				CORRECTED	SPEC		
FREQUENCY MHz	READING dBµV	Ant dB	Amp dB	Cable dB	Dist dB	READING dBµV/m	LIMIT dBµV/m	MARGIN DB	NOTES
11.048	30.8	11.0	0.0	1.0		42.8	50.0	-7.2	N
44.170	38.1	12.1	-27.6	1.5		24.1	40.0	-15.9	V
55.090	41.4	7.6	-27.6	1.6		23.0	40.0	-17.0	V
185.100	41.5	9.6	-27.0	3.0		27.1	43.5	-16.4	V
1849.658	42.7	27.1	-36.6	5.7		38.9	54.0	-15.1	V
2712.800	40.5	29.2	-34.9	7.5		42.3	54.0	-11.7	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 the wall mount position. This is the worst case as found during preliminary testing. The temperature was 21.3°C and the humidity was 55%. 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)									
	METER	CORRECTION FACTORS				CORRECTED	SPEC		
FREQUENCY MHz	READING dBµV	Ant dB	Amp dB	Cable dB	Dist dB	READING dBµV/m	LIMIT dBµV/m	MARGIN DB	NOTES
44.170	38.1	12.1	-27.6	1.5		24.1	40.0	-15.9	V
55.090	41.4	7.6	-27.6	1.6		23.0	40.0	-17.0	V
185.100	41.5	9.6	-27.0	3.0		27.1	43.5	-16.4	V
915.016	37.9	22.2	-27.6	7.2		39.7	46.0	-6.3	V
926.841	37.6	22.3	-27.6	7.3		39.6	46.0	-6.4	V
935.575	37.7	22.4	-27.6	7.2		39.7	46.0	-6.3	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
N = No Polarization
Q = Quasi Peak Reading
A = Average Reading

COMMENTS: EUT is 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 the wall mount position. This is the worst case as found during preliminary testing. The temperature was 21.3°C and the humidity was 55%. Frequency range investigated was 30.0 MHz to 5.0 GHz. Lowest clock = 3.68 MHz. Highest tuned frequency = 924.86 MHz.

Table 4: Six Highest Conducted Emission Levels									
	METER	CORRECTION FACTORS				CORRECTED	SPEC		
FREQUENCY MHz	READING dBµV	Lisn dB	dB	Cable dB	dB	READING dBµV	LIMIT dBµV	MARGIN dB	NOTES
0.458358	44.1	0.1		0.1		44.3	48.0	-3.7	B
0.546117	42.2	0.1		0.1		42.4	48.0	-5.6	B
0.606713	41.0	0.1		0.1		41.2	48.0	-6.8	B
0.915959	41.2	0.2		0.2		41.6	48.0	-6.4	B
1.035060	40.4	0.0		0.5		40.9	48.0	-7.1	B
1.229383	39.3	0.0		0.2		39.5	48.0	-8.5	B

Test Method: ANSI C63.4 1992
Spec Limit: FCC Section 15.207
Tested By: Mike Wilkinson

NOTES: Q = Quasi Peak Reading
A = Average Reading
B = Black Lead
W = White Lead

COMMENTS: EUT is continuously transmitting with modulation on Ch 0 = 904.29640 MHz. EUT tested in the wall mount position. This is the worst case as found during preliminary testing. The temperature was 21.3°C and the humidity was 55%. Frequency range investigated was 450 kHz to 30 MHz. AC input is 120 V, 60 Hz.

TABLE A

LIST OF TEST EQUIPMENT

Industry Canada File No. IC 3082-A

Function	S/N	Calibration Date	Cal Due Date
HP 8593EM EMC Analyzer	3624A00159	10/05/1999	10/05/2000
Fischer LISN	none	12/28/1999	12/28/2000
Fischer LISN	none	12/28/1999	12/28/2000
HP 8447D Amplifier	2727A05392	02/14/2000	02/14/2001
Chase CBL6111C Bilog Antenna	2455	06/17/2000	06/17/2001
HP 8593EM EMC Analyzer	3624A00159	10/05/1999	10/05/2000
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

EUT SETUP

The equipment under test (EUT) and the peripheral listed were set up in a manner that represented their 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, Table 3 for receive mode levels and Table 4 for conducted emssions. 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.

During conducted emissions testing, the EUT was located 80 centimeters above the conducting ground plane on the same nonconducting table as was used for radiated testing. The metal plane was grounded to the earth through the green wire safety ground. Power to the EUT was provided via 3 meters of shielded power cable from a filter grounded to the metal plane to a LISN. The LISN was also grounded to the plane and attached to the LISN was a 4 ganged grounded outlet whose source was also shielded and 60 cm in length. All other objects were kept a minimum of 1 meter away from the EUT during the conducted test.

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect both the radiated and conducted emissions data for the Base Station, PowerScan RF. 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. Conducted emissions tests required the use of the FCC type LISN's.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBµV, and a vertical scale of 10 dB per division.

TABLE B: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE

TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
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, 3 & 4 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 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, Base Station 900 MHz.

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 and conducted emissions data of the Base Station, PowerScan RF, 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, 15.207 & 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.

Conducted Emissions Testing

For conducted emissions testing, a 30 to 50 second sweep time was used for automated measurements in the frequency bands of 450 kHz to 1.705 MHz, 1.705 MHz to 3 MHz, and 3 MHz to 30 MHz. All readings within 20 dB of the limit were recorded. At frequencies where the recorded emissions were close to the limit, further investigation was performed manually at a slower sweep rate.

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, utilitzing 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 4. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula:

Meter reading (dBµV)
+ Antenna Factor (dB)
+ Cable Loss (dB)
- Distance Correction (dB)
- Pre-amplifier Gain (dB)

= Corrected Reading(dBµV/m)

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

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

			Amp-A	Cable	Bilog	Cable						T1 co	L13w	L14b
#	Freq	Rdng	Cbl-2	Horn	Mag L	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 dBµV.
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 dBµV/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.
T1 co is the cable loss in dB of the coaxial cable used for conducted emissions testing.
L13w is the LISN factor for the white lead.
L14b is the LISN factor for the black lead.

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:	120 VAC

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
Handheld and Base Station Boards		14.7456		Y2

REQUIRED EUT CHANGES TO COMPLY:
None

CABLE INFORMATION

Cable #:	1	Cable(s) of this type:	1
Cable Type:	AC/DC Power Supply to Base Station	Shield Type:	
Construction:		Length In Meters:	1.6
Connected To End (1):		Connected To End (2):	Tied directly to power supply
Connector At End (1):		Connector At End (2):	Metal to Base Station
Shield Grounded At (1):		Shield Grounded At (2):	
Part Number:	4004-0705 (115 VAC)	Number of Conductors:	3
Notes:			

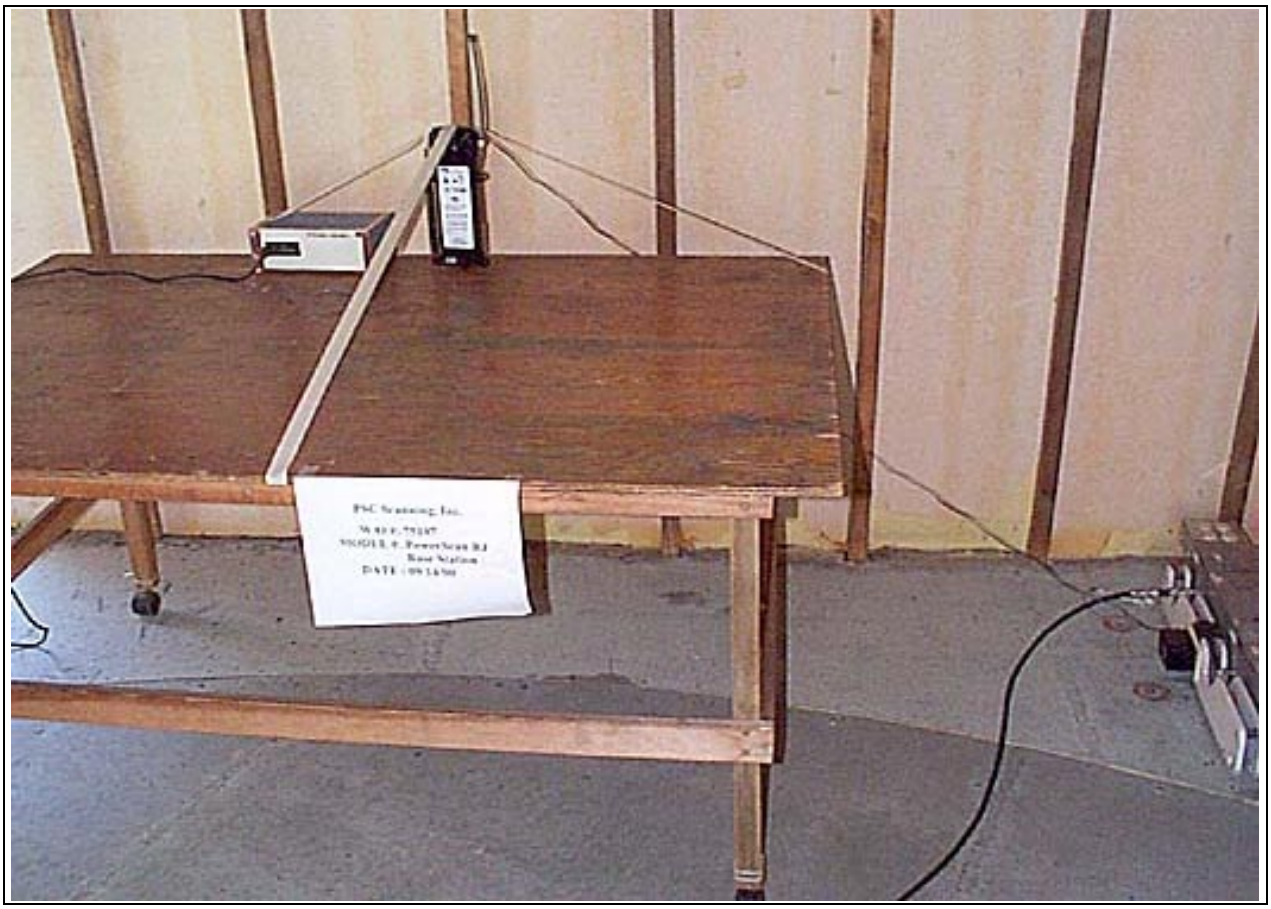
PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Back View

PHOTOGRAPH SHOWING CONDUCTED EMISSIONS



Conducted Emissions - Front View

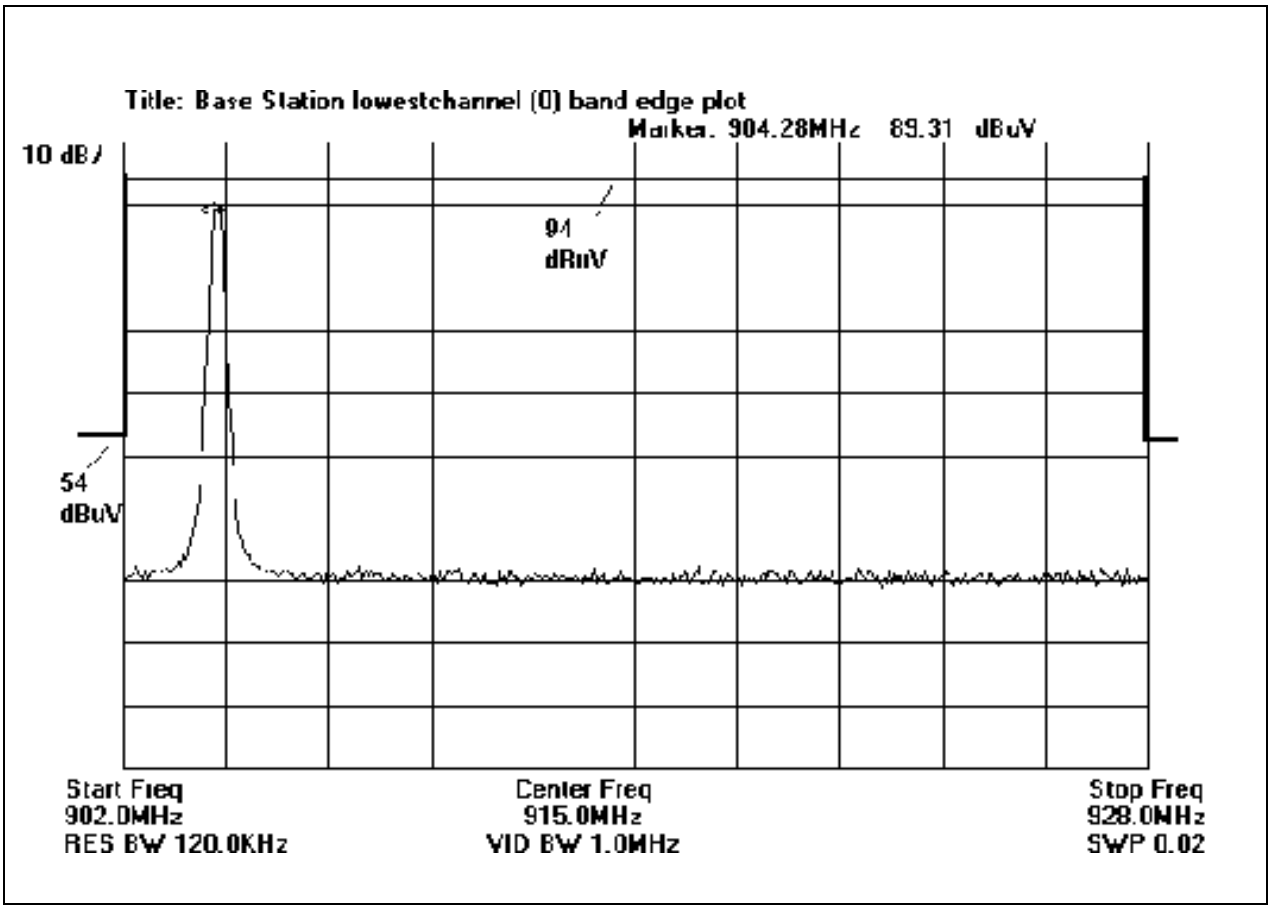
PHOTOGRAPH SHOWING CONDUCTED EMISSIONS

Conducted Emissions - Side View

APPENDIX B

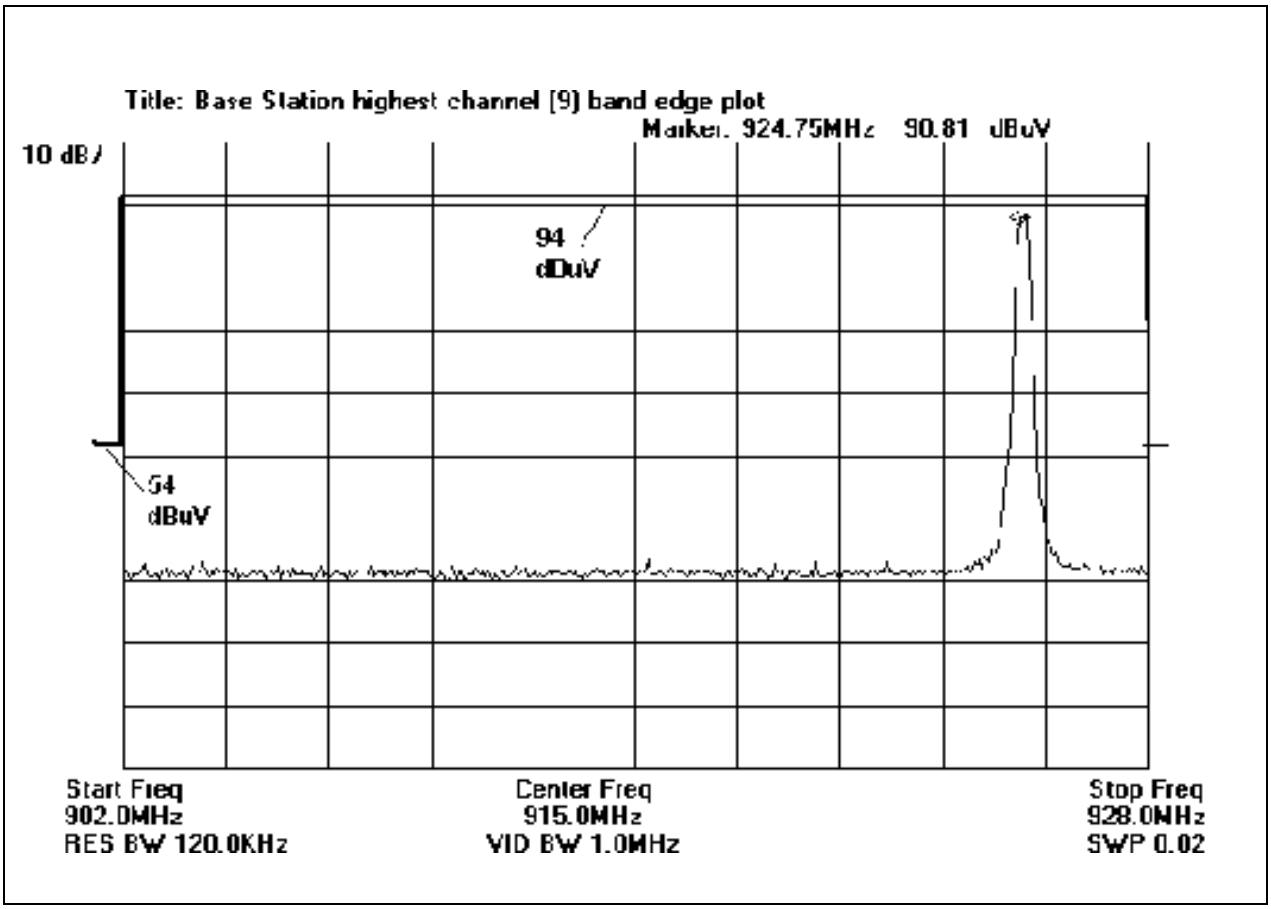
MEASUREMENT DATA SHEETS

Band Edge Plot



Lowest Channel

Band Edge Plot



Highest Channel

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: 09/14/2000
Test Type: **Fundamental Power** Time: 15:17:32
Equipment: **Base Station 900 MHz** Sequence#: 5
Manufacturer: PSC Scanning, Inc. Tested By: Mike Wilkinson
Model: PowerScan RF Base Station
S/N: 1305

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Base Station 900 MHz*	PSC Scanning, Inc.	PowerScan RF Base Station	1305

Support Devices:

Function	Manufacturer	Model #	S/N
Termination Box	PSC Scanning, Inc.	Keyboard Wedge/RS232	854-105-001

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 the wall mount position. This is the worst case as found during preliminary testing. The temperature was 21.3°C and the humidity was 55%.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp-A dB	Cable dB	Bilog dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	924.783M	91.0	-27.6	+7.3	+22.3		+0.0	93.0	94.0 Ch 9	-1.0	Vert
2	916.099M	90.1	-27.6	+7.2	+22.2		+0.0	91.9	94.0 Ch 5	-2.1	Vert
3	904.330M	89.3	-27.6	+7.1	+22.1		+0.0	90.9	94.0 Ch 0	-3.1	Vert
4	916.099M	84.8	-27.6	+7.2	+22.2		+0.0	86.6	94.0 Ch 5	-7.4	Horiz
5	924.829M	84.6	-27.6	+7.3	+22.3		+0.0	86.6	94.0 Ch 9	-7.4	Horiz
6	904.338M	83.6	-27.6	+7.1	+22.1		+0.0	85.2	94.0 Ch 0	-8.8	Horiz

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: 09/14/2000
Test Type: **Harmonics & Spurious** Time: 15:52:34
Equipment: **Base Station 900 MHz** Sequence#: 6
Manufacturer: PSC Scanning, Inc. Tested By: Mike Wilkinson
Model: PowerScan RF Base Station
S/N: 1305

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Base Station 900 MHz*	PSC Scanning, Inc.	PowerScan RF Base Station	1305

Support Devices:

Function	Manufacturer	Model #	S/N
Termination Box	PSC Scanning, Inc.	Keyboard Wedge/RS232	854-105-001

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 the wall mount position. This is the worst case as found during preliminary testing. The temperature was 21.3°C and the humidity was 55%. 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 Cable dB	Cable Cbl-2 dB	Bilog Mag L dB	26.5 Horn dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	924.900M	91.0	-27.6	+7.3	+22.3	+0.0	+0.0	93.0	94.0	-1.0	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 9 Fundamental		
2	916.099M	90.1	-27.6	+7.2	+22.2	+0.0	+0.0	91.9	94.0	-2.1	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 5 Fundamental		
3	904.338M	89.3	-27.6	+7.1	+22.1	+0.0	+0.0	90.9	94.0	-3.1	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 0 Fundamental		
4	11.048M	30.8	+0.0	+1.0	+0.0	+0.0	+0.0	42.8	50.0	-7.2	None
			+0.0	+0.0	+11.0	+0.0			Ch 0		
5	11.045M	30.4	+0.0	+1.0	+0.0	+0.0	+0.0	42.4	50.0	-7.6	Vert
			+0.0	+0.0	+11.0	+0.0			Ch 9		
6	11.050M	29.3	+0.0	+1.0	+0.0	+0.0	+0.0	41.3	50.0	-8.7	None
			+0.0	+0.0	+11.0	+0.0			Ch 5		
7	2712.800M	40.5	+0.0	+0.0	+0.0	-34.9	+0.0	42.3	54.0	-11.7	Vert
			+1.0	+6.5	+0.0	+29.2			Ch 0		
8	2774.710M	40.3	+0.0	+0.0	+0.0	-35.0	+0.0	41.9	54.0	-12.1	Vert
			+0.8	+6.7	+0.0	+29.1			Ch 9		
9	1849.658M	42.7	+0.0	+0.0	+0.0	-36.6	+0.0	38.9	54.0	-15.1	Vert
			+0.5	+5.2	+0.0	+27.1			Ch 9		
10	2748.532M	36.8	+0.0	+0.0	+0.0	-35.0	+0.0	38.5	54.0	-15.5	Vert
			+0.9	+6.6	+0.0	+29.2			Ch 5		
11	1808.555M	41.9	+0.0	+0.0	+0.0	-36.8	+0.0	38.1	54.0	-15.9	Vert
			+0.7	+5.0	+0.0	+27.3			Ch 0		
12	44.170M	38.1	-27.6	+1.5	+12.1	+0.0	+0.0	24.1	40.0	-15.9	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 0		

13	1832.227M	41.5	+0.0	+0.0	+0.0	-36.7	+0.0	37.7	54.0	-16.3	Vert
			+0.6	+5.1	+0.0	+27.2			Ch 5		
14	185.100M	41.5	-27.0	+3.0	+9.6	+0.0	+0.0	27.1	43.5	-16.4	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 5		
15	55.090M	41.4	-27.6	+1.6	+7.6	+0.0	+0.0	23.0	40.0	-17.0	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 5		
16	49.290M	39.2	-27.5	+1.5	+9.5	+0.0	+0.0	22.7	40.0	-17.3	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 5		
17	42.180M	35.4	-27.6	+1.4	+13.2	+0.0	+0.0	22.4	40.0	-17.6	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 9		
18	126.600M	38.1	-27.4	+2.4	+11.9	+0.0	+0.0	25.0	43.5	-18.5	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 5		
19	125.700M	35.1	-27.4	+2.4	+11.9	+0.0	+0.0	22.0	43.5	-21.5	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 0		
20	185.500M	35.6	-27.0	+3.0	+9.6	+0.0	+0.0	21.2	43.5	-22.3	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 0		
21	185.500M	35.2	-27.0	+3.0	+9.6	+0.0	+0.0	20.8	43.5	-22.7	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 9		
22	376.500M	30.0	-27.2	+4.0	+15.7	+0.0	+0.0	22.5	46.0	-23.5	Vert
			+0.0	+0.0	+0.0	+0.0			Ch 5		
23	185.100M	33.7	-27.0	+3.0	+9.6	+0.0	+0.0	19.3	43.5	-24.2	Horiz
			+0.0	+0.0	+0.0	+0.0			Ch 5		

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: 09/14/2000
Test Type: **Maximized Emissions** Time: 15:49:59
Equipment: **Base Station 900 MHz** Sequence#: 7
Manufacturer: PSC Scanning, Inc. Tested By: Mike Wilkinson
Model: PowerScan RF Base Station
S/N: 1305

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Base Station 900 MHz*	PSC Scanning, Inc.	PowerScan RF Base Station	1305

Support Devices:

Function	Manufacturer	Model #	S/N
Termination Box	PSC Scanning, Inc.	Keyboard Wedge/RS232	854-105-001

Test Conditions / Notes:

EUT is 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 the wall mount position. This is the worst case as found during preliminary testing. The temperature was 21.3°C and the humidity was 55%. Frequency range investigated was 30.0 MHz to 5.0 GHz. Lowest clock = 3.68 MHz. Highest tuned frequency = 924.86 MHz.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp-A dB	Cable dB	Bilog dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	935.575M	37.7	-27.6	+7.2	+22.4		+0.0	39.7	46.0 Ch 9	-6.3	Horiz
2	915.016M	37.9	-27.6	+7.2	+22.2		+0.0	39.7	46.0 Ch 0	-6.3	Vert
3	926.841M	37.6	-27.6	+7.3	+22.3		+0.0	39.6	46.0 Ch 5	-6.4	Vert
4	926.841M	37.4	-27.6	+7.3	+22.3		+0.0	39.4	46.0 Ch 5	-6.6	Horiz
5	935.575M	37.1	-27.6	+7.2	+22.4		+0.0	39.1	46.0 Ch 9	-6.9	Vert
6	915.001M	37.3	-27.6	+7.2	+22.2		+0.0	39.1	46.0 Ch 0	-6.9	Horiz
7	44.170M	38.1	-27.6	+1.5	+12.1		+0.0	24.1	40.0 Ch 5	-15.9	Vert
8	185.100M	41.5	-27.0	+3.0	+9.6		+0.0	27.1	43.5 Ch 5	-16.4	Vert
9	55.090M	41.4	-27.6	+1.6	+7.6		+0.0	23.0	40.0 Ch 5	-17.0	Vert
10	49.290M	39.2	-27.5	+1.5	+9.5		+0.0	22.7	40.0 Ch 5	-17.3	Vert
11	42.180M	35.4	-27.6	+1.4	+13.2		+0.0	22.4	40.0 Ch 9	-17.6	Vert
12	126.600M	38.1	-27.4	+2.4	+11.9		+0.0	25.0	43.5 Ch 5	-18.5	Vert

13	125.700M	35.1	-27.4	+2.4	+11.9	+0.0	22.0	43.5 Ch 5	-21.5	Vert
14	185.500M	35.6	-27.0	+3.0	+9.6	+0.0	21.2	43.5 Ch 5	-22.3	Vert
15	185.500M	35.2	-27.0	+3.0	+9.6	+0.0	20.8	43.5 Ch 9	-22.7	Vert
16	376.500M	30.0	-27.2	+4.0	+15.7	+0.0	22.5	46.0 Ch 5	-23.5	Vert
17	185.100M	33.7	-27.0	+3.0	+9.6	+0.0	19.3	43.5 Ch 5	-24.2	Horiz

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

Customer: **PSC Scanning, Inc.**
Specification: **FCC 15.207 COND**
Work Order #: **75197** Date: 09/14/2000
Test Type: **Conducted Emissions** Time: 16:21:02
Equipment: **Base Station 900 MHz** Sequence#: 8
Manufacturer: PSC Scanning, Inc. Tested By: Mike Wilkinson
Model: PowerScan RF Base Station
S/N: 1305

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Base Station 900 MHz*	PSC Scanning, Inc.	PowerScan RF Base Station	1305

Support Devices:

Function	Manufacturer	Model #	S/N
Termination Box	PSC Scanning, Inc.	Keyboard Wedge/RS232	854-105-001

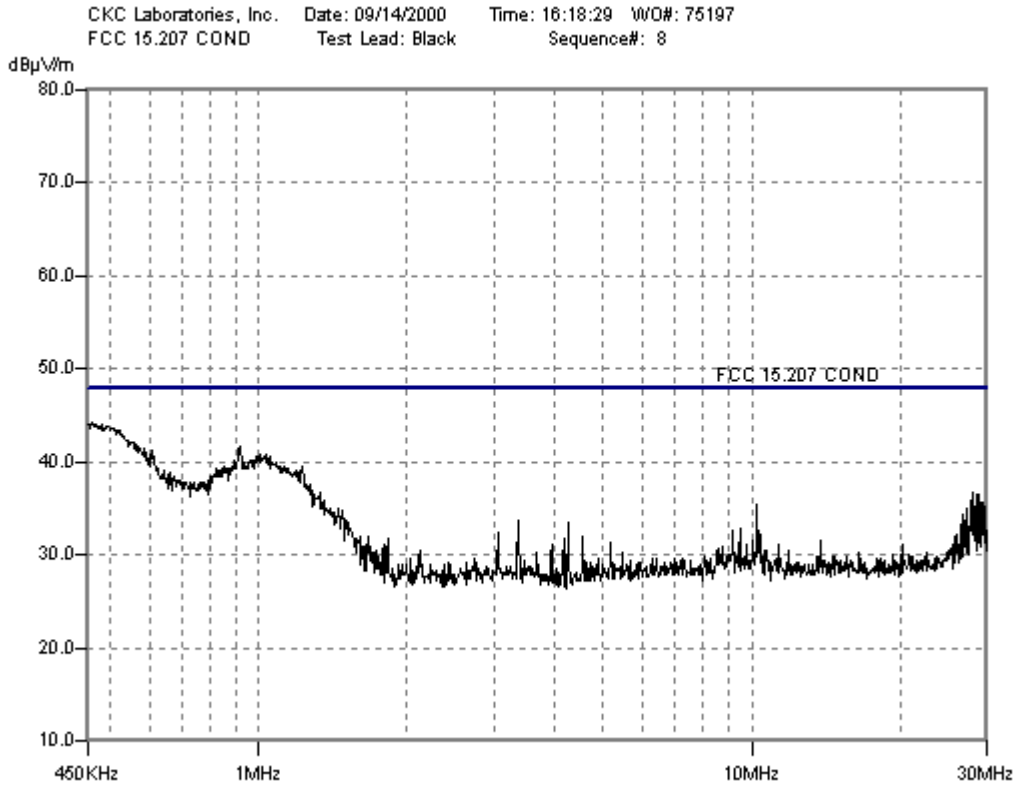
Test Conditions / Notes:

EUT is continuously transmitting with modulation on Ch 0 = 904.29640 MHz. EUT tested in the wall mount position. This is the worst case as found during preliminary testing. The temperature was 21.3°C and the humidity was 55%. Frequency range investigated was 450 kHz to 30 MHz. AC input is 120 V, 60 Hz.

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBµV	T1 co dB	dB	L14b dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	458.358k	44.1	+0.1		+0.1		+0.0	44.3	48.0	-3.7	Black
2	481.343k	43.7	+0.3		+0.1		+0.0	44.1	48.0	-3.9	Black
3	450.000k	44.0	+0.0		+0.1		+0.0	44.1	48.0	-3.9	Black
4	516.864k	43.0	+0.3		+0.1		+0.0	43.4	48.0	-4.6	Black
5	546.117k	42.2	+0.1		+0.1		+0.0	42.4	48.0	-5.6	Black
6	554.475k	42.0	+0.1		+0.1		+0.0	42.2	48.0	-5.8	Black
7	571.191k	41.5	+0.1		+0.1		+0.0	41.7	48.0	-6.3	Black
8	915.959k	41.2	+0.2		+0.2		+0.0	41.6	48.0	-6.4	Black
9	585.818k	41.2	+0.1		+0.1		+0.0	41.4	48.0	-6.6	Black
10	606.713k	41.0	+0.1		+0.1		+0.0	41.2	48.0	-6.8	Black
11	1.035M	40.4	+0.5		+0.0		+0.0	40.9	48.0	-7.1	Black
12	1.008M	40.1	+0.6		+0.0		+0.0	40.7	48.0	-7.3	Black

13	594.176k	40.5	+0.1	+0.1	+0.0	40.7	48.0	-7.3	Black
14	1.058M	40.1	+0.4	+0.0	+0.0	40.5	48.0	-7.5	Black
15	995.360k	40.0	+0.5	+0.0	+0.0	40.5	48.0	-7.5	Black
16	987.002k	40.1	+0.4	+0.0	+0.0	40.5	48.0	-7.5	Black
17	1.041M	40.0	+0.4	+0.0	+0.0	40.4	48.0	-7.6	Black
18	964.017k	39.9	+0.2	+0.1	+0.0	40.2	48.0	-7.8	Black
19	886.706k	39.7	+0.3	+0.2	+0.0	40.2	48.0	-7.8	Black
20	938.943k	39.7	+0.1	+0.1	+0.0	39.9	48.0	-8.1	Black
21	1.123M	39.4	+0.2	+0.0	+0.0	39.6	48.0	-8.4	Black
22	1.112M	39.4	+0.2	+0.0	+0.0	39.6	48.0	-8.4	Black
23	853.274k	39.2	+0.2	+0.2	+0.0	39.6	48.0	-8.4	Black
24	1.229M	39.3	+0.2	+0.0	+0.0	39.5	48.0	-8.5	Black
25	880.437k	39.0	+0.3	+0.2	+0.0	39.5	48.0	-8.5	Black
26	1.140M	39.2	+0.2	+0.0	+0.0	39.4	48.0	-8.6	Black
27	824.021k	38.9	+0.2	+0.2	+0.0	39.3	48.0	-8.7	Black
28	840.737k	38.8	+0.2	+0.2	+0.0	39.2	48.0	-8.8	Black
29	640.145k	38.8	+0.1	+0.2	+0.0	39.1	48.0	-8.9	Black
30	1.196M	38.8	+0.2	+0.0	+0.0	39.0	48.0	-9.0	Black


CKC Laboratories, Inc. Date: 09/14/2000 Time: 16:18:29 WO#: 75197
FCC 15.207 COND Test Lead: Black Sequence#: 8
dBµV/m
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC 15.207 COND
450KHz
1MHz
10MHz
30MHz

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

Customer: **PSC Scanning, Inc.**
Specification: **FCC 15.207 COND**
Work Order #: **75197** Date: 09/14/2000
Test Type: **Conducted Emissions** Time: 16:31:09
Equipment: **Base Station 900 MHz** Sequence#: 9
Manufacturer: PSC Scanning, Inc. Tested By: Mike Wilkinson
Model: PowerScan RF Base Station
S/N: 1305

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Base Station 900 MHz*	PSC Scanning, Inc.	PowerScan RF Base Station	1305

Support Devices:

Function	Manufacturer	Model #	S/N
Termination Box	PSC Scanning, Inc.	Keyboard Wedge/RS232	854-105-001

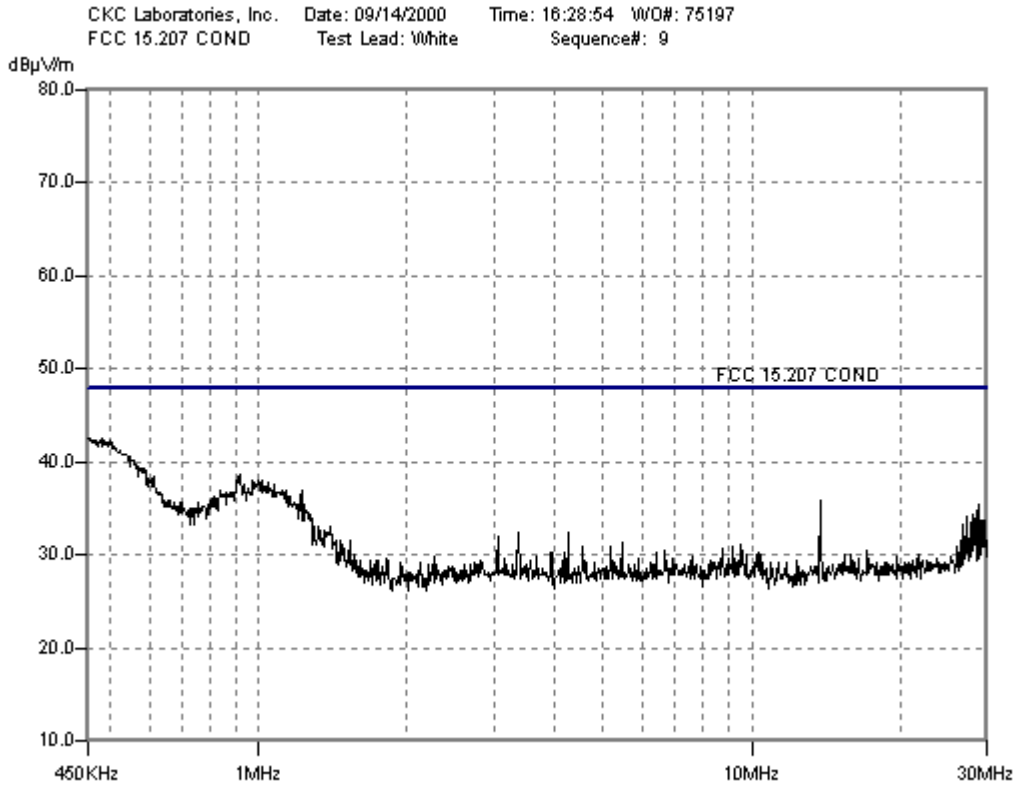
Test Conditions / Notes:

EUT is continuously transmitting with modulation on Ch 0 = 904.29640 MHz. EUT tested in the wall mount position. This is the worst case as found during preliminary testing. The temperature was 21.3°C and the humidity was 55%. Frequency range investigated was 450 kHz to 30 MHz. AC input is 120 V, 60 Hz.

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBµV	T1 co dB	L13w dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	479.253k	42.4	+0.2	+0.0			+0.0	42.6	48.0	-5.4	White
2	452.090k	42.6	+0.0	+0.0			+0.0	42.6	48.0	-5.4	White
3	498.059k	41.9	+0.4	+0.0			+0.0	42.3	48.0	-5.7	White
4	487.611k	42.0	+0.3	+0.0			+0.0	42.3	48.0	-5.7	White
5	506.417k	41.6	+0.4	+0.0			+0.0	42.0	48.0	-6.0	White
6	550.296k	40.4	+0.1	+0.0			+0.0	40.5	48.0	-7.5	White
7	564.923k	39.7	+0.1	+0.0			+0.0	39.8	48.0	-8.2	White
8	571.191k	39.3	+0.1	+0.0			+0.0	39.4	48.0	-8.6	White
9	915.959k	38.5	+0.2	+0.0			+0.0	38.7	48.0	-9.3	White
10	610.892k	38.4	+0.1	+0.0			+0.0	38.5	48.0	-9.5	White
11	598.355k	38.1	+0.1	+0.0			+0.0	38.2	48.0	-9.8	White
12	999.539k	37.5	+0.6	+0.0			+0.0	38.1	48.0	-9.9	White

13	903.422k	37.8	+0.3	+0.0		+0.0	38.1	48.0	-9.9	White
14	1.023M	37.5	+0.5	+0.0		+0.0	38.0	48.0	-10.0	White
15	976.554k	37.7	+0.3	+0.0		+0.0	38.0	48.0	-10.0	White
16	1.008M	37.3	+0.6	+0.0		+0.0	37.9	48.0	-10.1	White
17	1.048M	37.3	+0.4	+0.0		+0.0	37.7	48.0	-10.3	White
18	1.073M	37.2	+0.3	+0.0		+0.0	37.5	48.0	-10.5	White
19	936.854k	37.4	+0.1	+0.0		+0.0	37.5	48.0	-10.5	White
20	955.659k	37.1	+0.1	+0.0		+0.0	37.2	48.0	-10.8	White
21	1.137M	36.8	+0.2	+0.0		+0.0	37.0	48.0	-11.0	White
22	838.647k	36.8	+0.2	+0.0		+0.0	37.0	48.0	-11.0	White
23	1.223M	36.7	+0.2	+0.0		+0.0	36.9	48.0	-11.1	White
24	1.121M	36.7	+0.2	+0.0		+0.0	36.9	48.0	-11.1	White
25	884.616k	36.5	+0.3	+0.0		+0.0	36.8	48.0	-11.2	White
26	863.721k	36.6	+0.2	+0.0		+0.0	36.8	48.0	-11.2	White
27	631.787k	36.7	+0.1	+0.0		+0.0	36.8	48.0	-11.2	White
28	1.129M	36.5	+0.2	+0.0		+0.0	36.7	48.0	-11.3	White
29	876.258k	36.4	+0.3	+0.0		+0.0	36.7	48.0	-11.3	White
30	1.158M	36.1	+0.2	+0.0		+0.0	36.3	48.0	-11.7	White


CKC Laboratories, Inc. Date: 09/14/2000 Time: 16:28:54 WO#: 75197
FCC 15.207 COND Test Lead: White Sequence#: 9
dBµV/m
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC 15.207 COND
450KHz
1MHz
10MHz
30MHz