

**EXHIBIT THREE**  
**EMISSIONS TEST REPORT AND PHOTOS**

# Intertek Testing Services

## PERMISSIVE CHANGE II APPLICATION FOR FCC 15.247 CERTIFICATION

**Symbol Technologies, Inc.**

**Wireless Laser Barcode Scanner**

**Model: PDT6810**

**FCC ID: H9P3800B**

**Job # J98025148**

**Number of Pages: 9 pp. + Supporting Data and Documents**

**Date of Report: September 23, 1998**

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The results contained in this report were derived from measurements performed on the identified test samples. Any implied performance of other samples on this report is dependent on the representative of the samples tested.



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1.0 Summary of Tests

**Symbol Technologies, Inc. - MODEL: PDT6810**

**FCC ID: H9P3800B**

TEST	REFERENCE	RESULTS
Radiated Emission in Restricted Bands	15.35(b)(c)	Pass
Radiated Emission from Receiver L.O.	15.109	Pass

Test Engineer:

Xi-Ming Yang  
Xi-Ming Yang

Date:

9-24-98

EMC Site Manager:

David Chernomordik  
David Chernomordik

Date:

9/25/98

## 2.0 General Description

### 2.1 Product Description

A production version of the sample was received on August 30, 1998 in good condition.

### Overview of Wireless Laser Barcode Scanner

Applicant	Symbol Technologies, Inc.
Trade Name & Model No.	Symbol Technologies, Inc., PDT6810
FCC Identifier	H9P3800B
Manufacturer & Model of Spread Spectrum Module	Symbol Technologies, Inc.
Type of Transmission	Direct Sequence
Rated RF Output (mW)	120 mW
Frequency Range (MHz)	903-927
Number of Channel(s)	49
Antenna(s) & Gain, dBi	-6 dBi
Processing Gain Measurements	<input checked="" type="checkbox"/> Will be provided to ITS for submission with the application <input type="checkbox"/> Will be provided directly to the FCC reviewing engineer by the client or manufacturer of the spread spectrum module
Antenna Requirement	<input checked="" type="checkbox"/> The EUT uses a permanently connected antenna. <input type="checkbox"/> The antenna is affixed to the EUT using a unique connector which allows for replacement of a broken antenna, but DOES NOT use a standard antenna jack or electrical connector. <input type="checkbox"/> The EUT requires professional installation (attach supporting documentation if using this option).
Manufacturer name & address	Symbol Technologies, Inc. 2145 Hamilton Avenue San Jose, California 95125

### 2.2 Related Submittal(s) Grants

None.

## 2.3 Test Methodology

Both AC mains line-conducted and radiated emissions measurements were performed according to the procedures in ANSI C63.4 (1992). Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Data Sheet**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

## 2.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is site 1. This test facility and site measurement data have been fully placed on file with the FCC and NVLAP accredited.

**3.0 System Test Configuration**

**3.1 Support Equipment and description**

None, the EUT was tested as a standalone device.

**3.2 Block Diagram of Test Setup**

Not applicable, the EUT was tested as a standalone device.

### 3.3 Justification

For emission testing, the equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). During testing, all cables were manipulated to produce worst case emissions.

For radiated emission measurements, the EUT is attached to a cardboard box (if necessary) and placed on the wooden turntable. If the EUT attaches to peripherals, they are connected and operational (as typical as possible). The EUT is wired to transmit full power without modulation.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Detector function is in peak mode. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance.

### 3.4 Software Exercise Program

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. For emissions testing, the units were setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing.

### 3.5 Mode of Operation During Test

Transmitting and receiving modes.

### 3.6 Modifications Required for Compliance

The following modifications were installed during compliance testing in order to bring the product into compliance (Please note that this list does not include changes made specifically by Symbol Technologies, Inc. prior to compliance testing):

No modifications were made to the EUT by Intertek Testing Services.

### 3.7 Additions, deviations and exclusions from standards

No additions, deviations or exclusion have been made from standard.



4.0 **Measurement Results**

4.1 Radiated Emissions from Digital Section of Transceiver (Transmitter), FCC Ref: 15.109

[ ] Not required - No digital part

[X] Test results are attached



# Intertek Testing Services

**Company:** Symbole  
**Project #:**  
**Model:** PDT 6810 SLICK (Tx @ 903 MHz)  
**Engineer:** Xi-Ming Yang  
**Date of test:** August 30, 1998

## FCC Part 15.247 Radiated Emissions

Frequency	Antenna	Reading	Antenna	Cable	Pre-amp	Distance	Corrected	Limit	Margin
MHz	Polarity	dB(uV)	Factor	Loss	dB	Factor	Reading	dB(uV/m)	dB
	H/V		dB(1/m)	dB		dB			
2709.6	V	55.0*	28.0	2.3	-28.4	0.0	56.9	74.0	-17.1
2709.6	V	46.7	28.0	2.3	-28.4	0.0	48.6	54.0	-5.4
3612.8	V	52.0*	31.3	2.8	-27.8	0.0	58.3	74.0	-15.7
3612.8	V	43.3	31.3	2.8	-27.8	0.0	49.6	54.0	-4.4
4516.0	V	39.0*	32.0	3.3	-27.9	0.0	46.4	74.0	-27.6
4516.0	V	30.0	32.1	3.3	-27.9	0.0	37.5	54.0	-16.5
5419.2	V	43.0*	34.4	3.6	-28.3	0.0	52.7	74.0	-21.3
5419.2	V	33.0	34.4	3.6	-28.3	0.0	42.7	54.0	-11.3
7225.5	V	37.0*	37.5	4.2	-28.0	0.0	50.7	74.0	-23.3
7225.5	V	27.0	37.5	4.2	-28.0	0.0	40.7	54.0	-13.3
8128.4	V	37.0*	37.1	4.6	-27.1	0.0	51.6	74.0	-22.4
8128.4	V	27.0	37.1	4.6	-27.1	0.0	41.6	54.0	-12.4
9031.4	H	37.0*	37.8	5.2	-27.0	0.0	53.0	74.0	-21.0
9031.4	H	27.0	37.8	5.2	-27.0	0.0	43.0	54.0	-11.0

- Note:**
1. All measurement were made at 3 meters
  2. Negative signs (-) in the margin column signify levels below the limit.
  3. Reading with \* is peak reading



**Company:** Symbole  
**Project #:**  
**Model:** PDT 6810 SLICK (Tx @ 915 MHz)  
**Engineer:** Xi-Ming Yang  
**Date of test:** August 30, 1998

### FCC Part 15.247 Radiated Emissions

Frequency	Antenna	Reading	Antenna	Cable	Pre-amp	Distance	Corrected	Limit	Margin
MHz	Polarity	dB(uV)	Factor	Loss	dB	Factor	Reading	dB(uV/m)	dB
2745.4	V	54.0*	28.0	2.3	-28.4	0.0	55.9	74.0	-18.1
2745.4	V	44.5	28.0	2.3	-28.4	0.0	46.4	54.0	-7.6
3659.4	V	51.0*	31.3	2.8	-27.8	0.0	57.3	74.0	-16.7
3659.4	V	42.6	31.3	2.8	-27.8	0.0	48.9	54.0	-5.1
4576.1	V	39.0*	32.0	3.3	-27.9	0.0	46.4	74.0	-27.6
4576.1	V	30.0	32.1	3.3	-27.9	0.0	37.5	54.0	-16.5
5491.2	V	42.0*	34.4	3.6	-28.3	0.0	51.7	74.0	-22.3
5491.2	V	32.0	34.4	3.6	-28.3	0.0	41.7	54.0	-12.3
7321.7	V	37.0*	37.5	4.2	-28.0	0.0	50.7	74.0	-23.3
7321.7	V	28.0	37.5	4.2	-28.0	0.0	41.7	54.0	-12.3
8235.6	V	37.0*	37.1	4.6	-27.1	0.0	51.6	74.0	-22.4
8235.6	V	27.0	37.1	4.6	-27.1	0.0	41.6	54.0	-12.4
9148.1	H	39.0*	37.8	5.2	-27.0	0.0	55.0	74.0	-19.0
9148.1	H	27.0	37.8	5.2	-27.0	0.0	43.0	54.0	-11.0

- Note:**
1. All measurement were made at 3 meters
  2. Negative signs (-) in the margin column signify levels below the limit.
  3. Reading with \* is peak reading

**Company:** Symbole  
**Project #:**  
**Model:** PDT 6810 SLICK (Tx @ 927 MHz)  
**Engineer:** Xi-Ming Yang  
**Date of test:** August 30, 1998

**FCC Part 15.247 Radiated Emissions**

Frequency	Antenna	Reading	Antenna	Cable	Pre-amp	Distance	Corrected	Limit	Margin
MHz	Polarity	dB(uV)	Factor	Loss	dB	Factor	Reading	dB(uV/m)	dB
	H/V		dB(1/m)	dB			dB(uV/m)		
2781.6	V	50.0*	28.0	2.3	-28.4	0.0	51.9	74.0	-22.1
2781.6	V	41.0	28.0	2.3	-28.4	0.0	42.9	54.0	-11.1
3708.6	V	51.0*	31.3	2.8	-27.8	0.0	57.3	74.0	-16.7
3708.6	V	42.3	31.3	2.8	-27.8	0.0	48.6	54.0	-5.4
4633.7	V	44.0*	32.0	3.3	-27.9	0.0	51.4	74.0	-22.6
4633.7	V	36.0	32.1	3.3	-27.9	0.0	43.5	54.0	-10.5
5560.3	V	44.0*	34.4	3.6	-28.3	0.0	53.7	74.0	-20.3
5560.3	V	36.0	34.4	3.6	-28.3	0.0	45.7	54.0	-8.3
7414.4	V	48.0*	37.5	4.2	-28.0	0.0	61.7	74.0	-12.3
7414.4	V	29.0	37.5	4.2	-28.0	0.0	42.7	54.0	-11.3
8345.3	V	38.0*	37.1	4.6	-27.1	0.0	52.6	74.0	-21.4
8345.3	V	28.0	37.1	4.6	-27.1	0.0	42.6	54.0	-11.4
9273.8	H	38.0*	37.8	5.2	-27.0	0.0	54.0	74.0	-20.0
9273.8	H	27.0	37.8	5.2	-27.0	0.0	43.0	54.0	-11.0

- Note:**
1. All measurement were made at 3 meters
  2. Negative signs (-) in the margin column signify levels below the limit.
  3. Reading with \* is peak reading

**Company:** Symbole  
**Project #:**  
**Model:** PDT 6810 SLICK (Tx mode)  
**Engineer:** Xi-Ming Yang  
**Date of test:** August 30, 1998

## FCC Part 15.247 Radiated Emissions

### Low ch.

Frequency	Antenna Polarity	Reading	Antenna Factor	Cable Loss	Pre-amp	Distance Factor	Corrected Reading	Limit	Margin
MHz	H/V	dB(uV)	dB(1/m)	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
973.0	V	25.0	22.9	1.0	0.0	0.0	48.9	54.0	-5.1
1946.1	V	35.0	27.5	2.3	-29.1	0.0	35.7	54.0	-18.3
2919.0	V	39.0	30.2	2.8	-28.0	0.0	44.0	54.0	-10.0
3892.0	V	32.0	32.0	2.8	-27.8	0.0	39.0	54.0	-15.0

### Mid ch.

985.0	V	24.0	22.9	1.0	0.0	0.0	47.9	54.0	-6.1
1970.0	V	37.0	27.5	2.3	-29.1	0.0	37.7	54.0	-16.3
2955.0	V	38.0	30.2	2.8	-28.0	0.0	43.0	54.0	-11.0
3940.0	V	33.0	32.0	2.8	-27.8	0.0	40.0	54.0	-14.0

### High ch.

973.0	V	26.0	22.9	1.0	0.0	0.0	49.9	54.0	-4.1
1946.1	V	36.0	27.5	2.3	-29.1	0.0	36.7	54.0	-17.3
2919.0	V	40.0	30.2	2.8	-28.0	0.0	45.0	54.0	-9.0
3892.0	V	31.0	32.0	2.8	-27.8	0.0	38.0	54.0	-16.0

- Note:**
1. All measurement were made at 3 meters
  2. Negative signs (-) in the margin column signify levels below the limit.
  3. Reading with \* is peak reading

4.2 Radiated Emissions from Receiver Section of Transceiver (L.O. Radiation), FCC Ref: 15.109, 15.111

Not required - EUT operation above 960 MHz only

Not required - EUT is transmitter only

Not performed; exempt until June 1999

Test results are attached .

5.0 **Photographs**

See attached.