



Network Systems Organization

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Federal Communications Commission
Equipment Approval Services
P.O. Box 358315
Pittsburgh, PA 15251-5315

Re: FCC ID H9PLA4111 Ref # 11149

Date: December 21, 1999

Dear Reviewer,

In response to the following Email:

To: Norman Nelson, Symbol Technologies, Inc.
From: Joe Dichoso
jdichoso@fcc.gov
FCC Application Processing Branch

Re: FCC ID H9PLA4111
Applicant: Symbol Technologies Inc
Correspondence Reference Number: 11149
731 Confirmation Number: EA95624
Date of Original E-Mail: 12/21/1999

Please address the following RF safety items. Contact Kwok Chan at KChan@fcc.gov if you have any questions. Submit all exhibits in the RF exposure info folder when downloading your response.

***This inquiry is for RF safety purposes only. A technical review will be done separately.

This is a 2.4 GHz DSS from Symbol, EA 95624 -

1. This is a direct sequence PCMCIA module with a measured peak output of 58.9 mW at the antenna terminal. The cover letter indicates this filing is for the PCMCIA version but the operators manual also describes a PCI adapter. Please clarify if the PCI adapter is a part of this filing or not.

The PCI Adapter is not a part of this filing.

2. The manual describes a desktop dual-dipole antenna for the PCI adapter and a mountable F-plane antenna (ML-2499-HPA-00). Please identify these two antennas with respect to the antennas listed in the RF exposure info. There are no other antenna info, installation requirements or appropriate separation distances specified in the operating manual, indicating to users about MPE or SAR compliance requirements. Please revise manual information accordingly.

The part number ML-2499-HPA-00 is a typo in the operator's manual. It should be ML-2499-PSA-00, which is antenna #1 in the RF Exposure Section. The desktop dual dipole antenna is # X (Trilogy Access Point) in the RF Exposure Section.

See the attached pages of the operator's manual that display the warning for these antennas.

2. The operators manual describes a 100 mW or 500 mW device. The maximum measured output for this filing is only 60 mW, please clarify and revise manual information accordingly.

The operator's manual was changed to:

TX Max.Radiated EIRP

US:	FCC part 15.247
Europe :	ETS 300 320
Japan:	RCR STD-33

3. The RF exposure information identified 19 antennas, 11 external antennas intended for mobile operations that will provide 20 cm or more separation from persons, 6 antennas for integration with this PCMCIA card into specific hand-held computers and 2 antennas (rubber duck and end cap) that may not meet the 20 cm requirement for mobile operations. We cannot use the proposed SAR data submitted previously for a different device for the handheld computers because of different exposure and operating configurations and conditions.

The rubber duck will mount either on the back of a desktop PC or on an access point that is typically wall or ceiling mounted. Both applications will always be more than 20 cm from the operator.



4. The RF exposure info indicates a 16 cm separation distance for external antennas and 8 cm for handheld products. Since the provided RF exposure information is based on MPE limits for mobile transmitters, a minimum separation distance of 20 cm is required between the antenna and persons to satisfy compliance (2.1091). Please revise and include the appropriate operating requirements in the appropriate manual(s). It should also be stated in the manuals that the required distance is for purpose of satisfying FCC RF exposure requirements. In order to use a distance closer than 20 cm for handheld products, analysis with respect to SAR limits should be used; otherwise, all antenna configurations will be required to meet the 20 cm mobile separation requirement - through use of proper operating instructions and warnings, when appropriate or necessary, will be acceptable for 60 mW maximum output for the proposed antennas.

The following safety statement has been added to the operator's manual for the end cap antenna:

Always position the antenna so that it is at least 5 cm (2 inches) away from your body. This must be followed to ensure compliance with FCC RF exposure requirements.

The following safety statement will be included with the operator's manual for each hand held product:

Always hold the terminal using the grip illustrated in this operator's manual. This will ensure the maximum range performance and must be followed to ensure compliance with FCC RF exposure requirements.

6. FYI only - the MPE estimation should be based on maximum output and antenna gain(s) relevant to the particular filing, not previous or other filings.
7. FYI - there are no antenna photos uploaded, please check with the engineer in charge of this filing to determine if such photos are needed to complete the filing.

I hope these answers are satisfactory.

Respectfully,

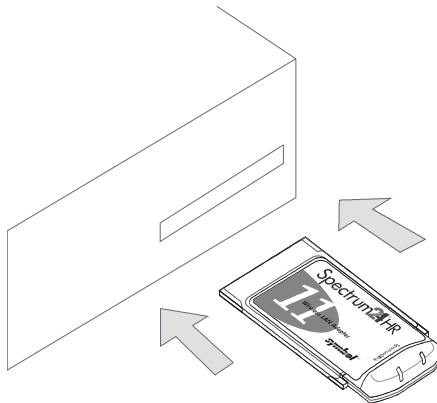
Norman H. Nelson

To install the PC Card:

1. Insert the PC Card into the PC slot. Arrows on the front of the PC Card indicate the insertion point to the slot.
2. Slide in the PC Card until it firmly seats.

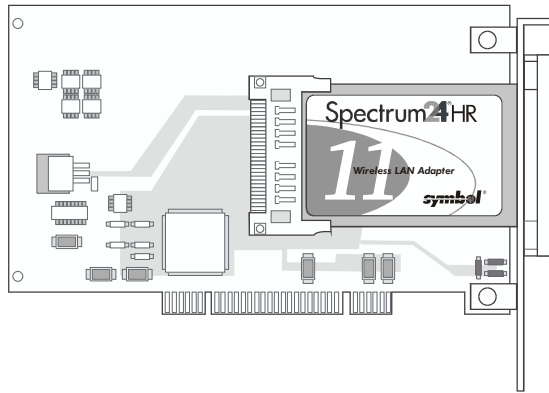


Align the card properly when inserting. Insert the card firmly without forcing. Forcing the card into the slot can damage the device or the card.



Always position the antenna so that it is at least 5 cm (2 inches) away from your body. This must be followed to ensure compliance with FCC RF exposure requirements.

3.3 Installing the PCI Adapter



Caution

Use proper grounding for the environment when handling computer components.



Note

Using PC 98 compliant system hardware increases the performance of the PCI adapter.

1. Power off the computer before installing the adapter.
If the system has a PCMCIA adapter installed, the PCI adapter can function as a second controller.
2. Remove the computer cover.
3. Locate an available PCI slot in the computer.
4. Remove the retaining screw and bracket for the slot.
5. Align the adapter with the slot and insert firmly.
Verify the adapter seats in the slot evenly.

6. Verify that the antenna connectors in the back of the PC are exposed.
7. Secure the adapter to the chassis with a retaining screw.
8. Replace the computer cover.

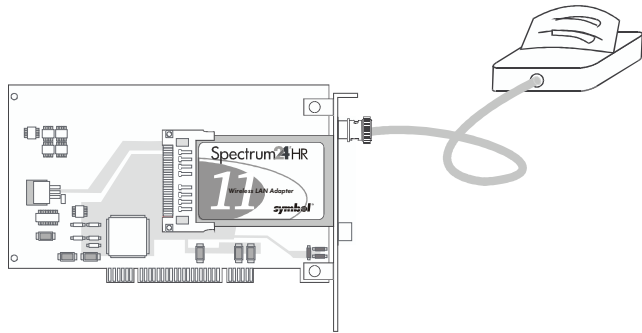
3.3.1 External Antenna Connection

The PCI adapter includes a desktop dual-dipole antenna.



Install the antenna parallel to the ground for optimal performance.

Attach the antenna to the antenna connector as shown:



The Mountable F-Plane Antenna (ML-2499-HPA-00) can also be used with the LA-4113 PCI adapter.

The Spectrum24 Wireless LAN adapter hardware installation is complete.



Always position the external antenna so that it is at least 20 cm (8 inches) away from your body. This must be followed to ensure compliance with FCC RF exposure requirements.

Radio

<i>Frequency Range</i>	country dependent. Typically 2402 MHz to 2480 MHz
<i>Radio Data Rate</i>	5.5 and 11 Mbps - Optional 1 and 2 Mbps - Required
<i>Range</i>	open environment over 100 ft (at 11 Mbps). Typical office or retail environment 30 - 50 ft (at 11 Mbps).
<i>TX Max. Radiated EIRP</i>	US: FCC part 15.247 Europe: ETS 300 320 Japan: RCR STD-33
<i>Modulation</i>	Binary GFSK
<i>TX Out-of-Band Emissions</i>	US: FCC part 15.247, 15.205, 15.209 Europe: ETS 300 320 Japan: RCR STD-33