



ENGLISH (US)

# **PROVIZIO™ SEM SCANNER/SCANNER S GATEWAY SYSTEM SUPPORT MANUAL**

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## I. Warnings and Safety Precautions

The Provizio SEM Scanner and Provizio SEM Scanner S has been designed and constructed in accordance with applicable United States (US) regulations and requirements, as well as U.S. and international standards for operation of electrical equipment, electromagnetic compatibility, and stipulated safety requirements.

Improper use or handling, however, can result in damage and/or injury. To prevent damage to the equipment, please read these operating instructions carefully before using your Provizio SEM Scanner system. Keep these instructions in a safe place. Follow the instructions below to ensure safe and trouble-free operation of your system.

### **Rx ONLY**

Caution: Federal (US) law restricts this device to sale by or on the order of a physician or other licensed health practitioner.



#### ***I.1. Warnings***

- **WARNING:** The standard of care should be followed for reducing the risk of developing pressure ulcers. Readings from the Provizio SEM Scanners can be used to support increased intervention; but should never be the basis for decreasing intervention.
- **WARNING:** This device is not intended to be used for detecting or diagnosis of pressure ulcers.
- **WARNING:** Do not use the Provizio SEM Scanners on broken or otherwise compromised skin.
- **WARNING:** Only use with Provizio System components.
- **WARNING:** To prevent the spread of infection, the Provizio SEM Scanners should be properly cleaned and disinfected according to the instructions provided in this document after it is used on a patient.
- **WARNING:** To prevent cross-contamination of patients, use a new, unopened single-use sensor per patient, per session. Multiple anatomic locations may be scanned using the same sensor in one session, however, ensure a new sensor is used for each new session.

- **WARNING:** Do not attempt to clean or disinfect a contaminated single-use sensor.
- **WARNING:** Should the device contact contaminated surfaces (for example, if it falls on the floor) it should be cleaned and disinfected before obtaining another patient reading.
- **WARNING:** Do not attempt to disassemble or otherwise modify the Provizio SEM Scanner as this can result in unintended hazards. The Provizio SEM Scanner System can only be serviced by the manufacturer (Bruin Biometrics, BBI) or a BBI Authorized Service Center. Please contact your BBI Product Specialist or Customer Service regarding any device that is not functioning correctly.
- **WARNING:** To avoid the risk of electric shock, this equipment must only be connected to a supply main with protective earth.
- **WARNING:** To avoid the risk of explosion, the Provizio SEM Scanner should not be used in the presence of flammable anesthetic agents.
- **WARNING:** The Provizio SEM Scanner S will not operate correctly without first installing a single-use sensor head.
- **WARNING:** Ensure there is no foreign material in the Charging Base slot before placing the scanner in the Charging Base.

### **1.2. Cautions**

- **CAUTION:** Examine the Provizio SEM Scanner for damage or sharp edges prior to each use. If any damage or sharp edges are found, please contact Customer Service or your Product Specialist. Do not attempt to use the device.
- **CAUTION:** Ensure the power cord is plugged into the supply main and the device is fully charged prior to use.
- **CAUTION:** Do not immerse the Provizio SEM Scanner. Immersion may damage the scanner and prevent it from functioning normally.

## **2. General**

### **2.1. Purpose**

The purpose of this document is to describe the steps necessary to configure the Bruin Biometrics LLC (BBI) System in a Healthcare Information System (HIS) as well as support the system in use.



## **2.2. Requirements**

The BBI Webserver Virtual Machine (VM).

SQL Server installed.

## **2.3. Nomenclature**

Virtual Machine: The BBI Webserver VM that is installed on the hospital-provided server and provides a working environment for the BBI Web application.

Pressure ulcers also are called pressure injuries, decubitus ulcers, bed sores or pressure sores.

## **2.4. Indications for Use**

The Provizio SEM Scanner and Provizio SEM Scanner S are intended to be used by healthcare professionals as an adjunct to the standard of care when assessing the heels and sacrum of patients who are at increased risk for pressure ulcers.

## **2.5. Contraindications**

Do not use on broken skin.

## **2.6. Intended User Profile**

The system is intended for use by healthcare professionals.

## **2.7. Adverse Effects**

There are no known adverse effects using the scanner.

## **2.8. Warranty and Disclaimer**

This manual is intended to provide instructions on the proper use of the SEM. It should be used in conjunction with the appropriate training. Bruin Biometrics LLC (BBI) warrants the Provizio SEM Scanner against defects in materials and workmanship for three (3) years from the date of purchase from BBI or its subsidiaries. This warranty is given only to the original purchaser of the SEM Scanner. BBI's obligation under the warranty is to provide for repair, or at its option, to provide a replacement product. No other remedy is obligated by this warranty. All special, incidental, and coincidental damages are excluded.

There are no conditions associated with varnishing, enameling, oxidation and similar protective finishes, as well as covering with sealing compounds that can re-plasticize at temperatures to be expected during normal operation.

To request repair or replacement under this warranty, purchasers should contact their local Customer Service provider.



Warranty conditions may differ in some countries. Contact your Customer Service provider for warranty terms.

Risk of loss or damage during shipments under this warranty shall be borne by the party shipping the Product. Products shipped by the Purchaser under this warranty shall be suitably packaged to protect the Product. If Purchaser ships a product to BBI in unsuitable packaging, any physical damage present in the Product on receipt and inspection by BBI, and not previously reported, will be presumed to have occurred in transit and will be the responsibility of the Purchaser.

**2.8.1. Exclusions**

The use of the instrument in a manner different than that described in this manual may result in improper function. This warranty is limited to defects and materials that can be attributed to a fault or defect within the SEM Scanner.

This warranty does not extend to any Warranted Products or parts thereof: (a) that have been subject to misuse, neglect or accident, (b) that have been damaged by causes external to the Warranted Product, (c) that have been used in violation of the BBI Instructions for Use, (d) on which the serial number has been removed or made illegible, (e) that have been modified by anyone other than BBI or its authorized service center, unless authorized prior to such service by BBI, (f) that are equipment sold as used, or (g) that are exposed to agents listed in

Table I, below.

Table I is not an exhaustive list of agents which may compromise the integrity of the SEM Scanner.

**Table I. Agents That Should Never Be Used on the SEM Scanner**

Severe Effect – NOT Recommended

Benzene	Cyclohexane	Kerosene	Nitric Acid – 70%
Carbon tetrachloride	Ethyl Chloride	Trichloroethylene	Perchloroethylene
Chlorobezene	Freon	Lacquer	Toluene
Chloroform	Gasoline, unleaded	Naphtha	Xylene





















**2.8.2. Disclaimer of Additional Warranties**

No distributor, dealer or other party is authorized to make any warranty on behalf of BBI, or to assume for BBI any other liability with respect to the SEM Scanner.

The contents of these Instructions for Use do not constitute a warranty.

## 2.9. Table of Symbols

Table 2. Table of Symbols

Symbol	Meaning
	Manufacturer's Catalog designation or number
	Serial number
	Lot Number
	CE mark in accordance to the European Medical Device Directive
	European Union Authorized Representative
	CAUTION: Federal (USA) law restricts this device to sale by or on the order of a physician or other licensed health practitioner
	Instructions are included and must be followed
	Caution or warning
	Dispose of this equipment according to local regulations for electrical and electronic waste disposal
	Manufactured By
	Drip Proof Equipment-IPX1: The Provizio SEM Scanner enclosure provides protection against the harmful effects of the ingress of liquids. (IPX1, per IEC 60529)
	Type BF Applied Part with IEC-60601-I
	Keep away from sunlight
	Keep dry
	Do not use if package is damaged and the device inside appears physically broken, cracked, or does not charge and start up following the Instructions for Use
	Temperature limits (example limits shown)
	Humidity limits (example limits shown)
	Package contents
	Single Patient Use Only
	Non-Sterile



### 3. Setup Instructions – Install VMware Player

1. Using PN-XXXX VMware Player v15.5.0 Installer, launch the VMware player 15.5.0.exe executable.
2. When the “VMware Workstation 15 Player Setup” Wizard is displayed, select “Next” to continue.
3. Select the checkbox next to “I accept the terms in the License Agreement” and then select “Next” to continue.
4. Select the checkbox next to “Enhanced Keyboard Driver” and then select “Next” to continue.
5. Uncheck both checkboxes on the “User Experience Settings” section and select “Next” to continue.
6. On the next screen, select “Next” to continue.
7. Select “Install” to continue.
8. Once the installation is complete, select the “Finish” button.
9. A dialog box will display prompting the user to restart now. Select “Yes” to restart. After the reboot, continue to the next steps.

## 4. Create Virtual Machine:

1. Copy the contents of PN-XXXX Windows Server 2019 Iso to the local disk.
2. Launch VMware Player
3. Select “Continue” and then “Finish” when prompted with the first-time “Welcome to VMware Workstation 15 Player” window.
4. Select the “Create a New Virtual Machine” button.
5. Select the “Installer Disc image file (iso):” option and then select the Browse button. Navigate to the PN-XXXX folder and select the iso file.  
(*Windows\_Server\_2019\_EVAL.iso*)
6. Select “Next >” to continue.
7. Identify the Guest Operating system:
  - a. Set the “Guest operating system” option to: Microsoft Windows.
  - b. Set the “Version” to: Windows Server 2016
  - c. Select “Next >” to continue.
8. Enter the following for the “Virtual machine name”: *BBI\_SEM250\_WEB*  
*Note: the location is arbitrary.*
9. Select “Next >” to continue.
10. Set the “Maximum disk size (GB):” to 60.0 GB.
  - a. Leave the default setting: “Split virtual disk into multiple files”.
  - b. Select “Next >” to continue.
11. Select the “Customize Hardware...” button.
  - a. Edit the “Memory” to be 4 GB (4096 MB)
  - b. Set the “Number of processor cores:” to be 2.
  - c. Select “Close” to continue.
  - d. Select “Finish” to continue.
12. Power on the VM by selecting the “Play virtual machine” button.
13. In the Windows Setup window, leave all of the default settings as such:
  - a. Language to install: English (United States)
  - b. Time and currency format: English (United States)
  - c. Keyboard or input method: US
14. Select “Next” to continue.
15. Select “Install now”.
16. Select the “Windows Server 2019 Standard Evaluation (Desktop Experience):” option.
  - a. Select “Next” to continue.
17. Select the “I accept the license terms” checkbox.
  - a. Select “Next” to continue.
18. Select the “Custom: Install Windows only (advanced)” option.
19. In the “Where do you want to install Windows?” screen, select “Next” to continue.
20. Allow time for the Operating System (OS) to install.



- a. When it is complete, it will boot up the Windows Server OS and require a password to be input.
  - b. Enter the following Password (twice): *BBIweb!1*
  - c. Select "Finish" to continue.
21. Use the CTRL-ALT-DEL key on VMware Player menu bar to bypass the lock screen.
22. Enter the password to continue.
23. When the "Networks" window is displayed, select the "Yes" option.
24. Right-click the windows start button and select "System"
25. Select the "Rename this PC" button.
26. Enter the following PC name: *BRUINWEB*
27. Select "Next" to continue.
28. Select the "Restart now" button and then the "Continue" button.
29. Allow the VM to restart.

## 5. Web Server Virtual Machine Setup

1. Use the CTRL-ALT-DEL key on VMware Player menu bar to bypass the lock screen.
2. Enter the password to continue.
3. The Server Manager window will open after boot-up.
4. Select the “Add roles and features” button.
  - a. In the “Add Roles and Features Wizard”, select “Next >” to continue.
  - b. Make sure “Role-based or feature-based installation” is checked and select “Next >” to continue.
  - c. Make no changes in the “Server Selection” section and select “Next >” to continue.
  - d. In the “Server Roles” section, locate and check the box for the “Web Server (IIS)”.
    - i. In the new dialog box: “Add features that are required for Web Server (IIS)?” select the “Add Features” button.
  - e. Select the “Next >” button to continue.
  - f. In the “Features” section, locate and check the box the following options
    - i. ASP.NET 4.7 (found in .NET Framework 4.7)
    - ii. HTTP Activation (found in .NET Framework 4.7/WCF Services)
      1. In the new dialog box: “Add features that are required for HTTP Activation?” select the “Add Features” button.
    - iii. IIS Hostable Web Core
  - g. Select the “Next >” button to continue.
  - h. In the “Web Server Role (IIS)” section, select “Next >” to continue.
  - i. Make no changes in the “Role Services” section and select “Next >” to continue.
  - j. Select “Install” to continue.
5. Allow time for roles and features to install.
  - a. Select “Close” on the “Add Roles and Features Wizard” when the installation is complete.
6. Copy the contents of PN-XXXX BBI Web Server Binaries to the following directory:
  - a. C:\inetpub\wwwroot
    - i. The file should look like: C:\inetpub\wwwroot\SEM250
7. Go to the bin folder and right-click the empty “BruinSEM” folder. Select “Properties” in the drop-down menu.
  - a. In the “BruinSEM Properties” window, navigate to the “Security” tab
  - b. In the “Group or user names” window, select the “Edit...” button.
    - i. Select “Add...”
      1. Select “Advanced”.
        - a. Select “Find Now”.
        - b. Select the “IIS\_IUSERS” name in the search results and select “OK”.
        - c. Select “OK”.

- d. Select "Full Control" under "Allow" in the Permissions for IIS\_IUSRS section.
      - e. Select "Apply".
      - f. Select "OK".
    2. Select "OK" to continue.
  8. Go back to the SEM250 folder and right-click the "App\_Data" folder. Select "Properties" in the drop-down menu.
    - a. In the "App\_Data Properties" window, navigate to the "Security" tab
    - b. In the "Group or user names" window, select the "Edit..." button.
      - i. Select "Add..."
        1. Select "Advanced".
          - a. Select "Find Now".
          - b. Select the "IIS\_IUSERS" name in the search results and select "OK".
          - c. Select "OK".
          - d. Select "Full Control" under "Allow" in the Permissions for IIS\_IUSRS section.
          - e. Select "Apply".
          - f. Select "OK".
        - ii. Select "OK" to continue.
9. Select the "Windows" button in the bottom left corner and type "inetmgr"
  - a. Open the "Internet Information Services (IIS) Manager".
10. In the "Connections" section of the IIS manager, locate and expand the "BRUINWEB (BRUINWEB\Administrator)" option.
  - a. Expand the "Sites" option.
  - b. Right click the "Default Web Site" option and select "Add Application"
  - c. Enter the following information as follows:
  - d. "Alias": sem250
  - e. "Physical path": C:\inetpub\wwwroot\SEM250
  - f. Select "OK" to continue.
11. Note: To test the success of this process, use an internet browser and navigate to the following URL:
  - a. Localhost/sem250/
12. If you see the Bruin Biometrics login page, the process was a success.



## 6. Additional Setup Steps

1. Copy the contents of PN-XXXX BBI Socket Installer to the Web VM.
2. Launch the “BruinSocket.Setup” install file.
  - a. Select “Next >”.
  - b. Select “Next >”.
  - c. Select “Next >”.
  - d. Select “Close”.



## 7. Web Server Virtual Machine Export

1. Shutdown the VM.
2. Insert a blank (PN-XXXX) USB thumb drive into the host.
3. Navigate to the file location of the saved BBI\_SEM250\_WEB VM.
  - a. *ie: C:\Users\Host\Documents\Virtual Machines\BBI\_SEM250\_WEB*
4. Copy the BBI\_SEM250\_WEB folder.
5. Paste the BBI\_SEM250\_WEB folder to the blank (PN-XXXX) USB thumb drive
6. Once the data transfer is complete, the output is a PN-XXXX (finished thumb drive)

## 8. SQL Server Set-Up and Connection

### 8.1. Identify IP address and port

1. Navigate to the SQL Server and identify the IP address and the inbound port associated with the SQL Server (1443) to be used in later steps.

### 8.2. Open SQL Management Studio

1. Connect to the desired SQL Server Database Engine via Client Credentials.
2. Right-click the database engine server and select “Properties”.
3. Select the “Security” page.
4. If “SQL Server and Windows Authentication mode” is not already selected, select this mode to proceed.
5. Select “OK” to continue and close this window.
6. At this time, if changes were made, restart the database engine server by right clicking the database engine and selecting “Restart”.
7. Once the restart is complete, expand the “Security” folder in the database engine, right-click the “Logins” folder and select “New Login...”.
8. Select the “SQL Server authentication” option.
9. De-select the “enforce password expiration” and “User must change password at next login” options.
10. Enter a login name and password. Record this information for later use, hereby to be referenced as the “BBI SQL username and password”.
11. Select the “Server Roles” page.
12. Set the “Server Roles” such that only the following roles are checked:
  - a. dbcreator
  - b. public
  - c. serveradmin
13. Select “OK” to save and close the window.

### 8.3. Verification of Set-Up

To verify the success of the above steps, run the following steps:

2. Select the “Connect” button in the left pane tool bar and select the “Database Engine...” option.





3. Set the Server name to the same desired SQL Server Database Engine as used in the previous steps.
4. Select “SQL Server Authentication” for Authentication.
5. Enter the “BBI SQL username and password” and select “Connect”
6. If authentication was successful and the “BBI SQL username” is referenced next to the SQL Database Engine name, then proceed with the following steps.

## 9. LDAP Server Set-Up and Connection

The following steps shall be performed on the LDAP server

### 9.1. Identify IP Address and Port

Identify the IP address of and the Inbound port associated with the LDAP server for later use.

1. Identify two LDAP Server roles as follows:
  - a. Users with access to BBI Administrator functionality
  - b. Users with access to BBI Client functionality
2. If these roles already exist, disregard the optional steps below.

### 9.2. Optional – Create BBI LDAP Server Roles

1. Login to the LDAP Server as an administrator
2. Launch the Windows® tool, “Active Directory Users and Computers”.
3. Identify and navigate to the desired forest to contain the new BBI LDAP server roles (e.g.: cpx.local).
4. Right-click the “Users” folder and select “New” and then “Group”.
5. Enter “BRUINADMIN” as the Group Name:
  - a. Make sure “Global” is set for the Group Scope and “Security” is selected for the Group Type
6. Select “OK” to save and continue.
7. Right-click the “Users’ folder and select “New” and then “Group”.
8. Enter “BRUINCLINICAL” as the Group Name:
  - b. Make sure “Global” is set for the Group Scope and “Security” is selected for the Group Type
9. Select “OK” to save and continue.

### 9.3. Assigning Roles

There are two roles in the Gateway:

- BRUINADMIN (“Admin”) – for administration of the server
- BRUINCLINICAL (“Clinical”) – for clinical access and data viewing

Assign at least one hospital user to each role.

## 10. BBI Webserver Set-Up and Configuration

### 10.1. Install the Webserver

1. Import the BBI Webserver VM into VSX.
2. Power on the BBI Webserver VM.
3. To verify that the SQL Server and LDAP will communicate properly with the Web Server VM, perform the following steps:
  - a. Launch a Windows command prompt window.
  - b. Enter the following command:
  - c. telnet <IP of SQL server> <port of SQL Server>  
e.g.: telnet 192.168.1.10 1433
  - d. If the command prompt displays a blank command prompt screen with the title “Telnet <IP of SQL server>” then proceed with the next steps.
  - e. Launch a new Windows command prompt window.
  - f. Enter the following command:
  - g. telnet <IP of LDAP server> <port of LDAP Server>  
e.g.: telnet 192.168.1.11 389
  - h. If the command prompt displays a blank command prompt screen with the title “Telnet <IP of LDAP server>” then proceed with the next steps.

### 10.2. Navigate to the Gateway

Using the Google Chrome browser, navigate to the Gateway application.

### 10.3. Configure the Gateway

Log in to the web server user interface with the Client Admin Username and Password created earlier.

1. In the Application Setup window, in the Database Info section, input the following information (some of which was identified in the above steps):
  - a. Server Address: <IP of SQL server> (from Section 3.1)
  - b. Server Port: <port of SQL server> (from Section 3.1)
  - c. Database Name: sem250b
  - d. Username: BBI SQL username (from Section 3.3)
  - e. Password: BBI SQL username (from Section 3.3)

2. Select the “Test DB Connection” button and verify that a dialog box is displayed that says: “Connection was successfully established”
3. Select “Next” to continue
4. In the LDAP Info section, input the following information (some of which was identified in the above steps):
  - a. LDAP Server: <IP of LDAP server> (from Section 4.1)
  - b. LDAP Port: <port of LDAP> (from Section 4.1)
  - c. Database Name: sem250b
  - d. Username: LDAP Administrator username
  - e. Password: Corresponding LDAP Administrator’s password
5. Select the “Test LDAP Connection” button and verify that a dialog box is displayed that says: “Connection was successfully established”
6. Select “Next” to continue.
7. Confirm the values and select “Finish” to proceed.
8. Logout of the BBI Webserver Interface

#### **10.4. Assign roles**

Log back in as an administrator of the BBI Webserver Interface

1. Select the “LDAP Mapping” page and complete the following steps:
  - a. With “Admin” selected in Local Roles, use the right-hand section to identify all LDAP Roles to be granted BBI Admin functionality.
  - b. Select “Save” to continue
  - c. With “Clinical” selected in the Local Roles, use the right-hand section to identify all LDAP Roles to be granted BBI Clinical functionality.
  - d. Select “Save” to continue.
2. Log out. Configuration is complete.

## II. Handheld Support

These data are included pursuant to IEC 60601-1 labelling requirements.

### II.1. Electromagnetic Environment

The Provizio SEM Scanners are intended for use in the electromagnetic environment specified in Table 3. Electromagnetic Environment. Users should ensure that the Provizio SEM Scanners are used in such an environment.


**Table 3. Electromagnetic Environment**

Emissions Test	Compliance	Electromagnetic Environment – Guidance
RF emissions CISPR11	Group 1	The Provizio SEM Scanner 250 device uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR11	Class B	The Provizio SEM Scanner 250 is suitable for use in all establishments other than domestic and in establishments connected to a low-voltage power supply network which supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Complies	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

## 11.2. Electromagnetic Immunity

Table 4. Electromagnetic Immunity

Immunity Test	IEC 60601 Test Level	Compliance	Electromagnetic Environment - Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 15 kV air	± 8 kV contact ± 15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines n/a (unit does not contain any signal, control, or telcom lines)	Mains power quality should be that of a typical commercial or institution environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV lines to earth	± 1 kV line(s) to line(s) ± 2 kV lines to earth	Mains power quality should be that of a typical commercial or institution environment.
Voltage dips, short interruptions, and voltage variations on power supply input lines IEC 61000-4-11	<5% UT (>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles 70% UT (30% dip in UT) for 30 cycles <5% UT (>95% dip in UT) for 5s	<5% UT (>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles 70% UT (30% dip in UT) for 30 cycles <5% UT (>95% dip in UT) for 5s	Mains power quality should be that of a typical commercial or institution environment. If the user of the SEM Scanner 200 charging system requires continued operation during power mains interrupts, it is recommended that the SEM Scanner 200 system be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be a level characteristic of a typical location in a typical commercial or institution environment.
Conducted RF IEC 61000-4-6	3 V <sub>rms</sub> 150 kHz to 80 MHz	3 V <sub>rms</sub>	Portable and mobile RF communications equipment should be used no closer to any part of the SEM Scanner 200 system, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

<p>Radiated RF IEC 61000-4-3</p>	<p>3 V/m 80 MHz to 2.7 GHz</p>	<p>3 V/m</p>	<p>Recommended separation distance:</p> $d = 1.2 \cdot \sqrt{P} \quad 150\text{kHz to } 80 \text{ MHz}$ $d = 1.2 \cdot \sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2.3 \cdot \sqrt{P} \quad 800\text{MHz to } 2.7 \text{ GHz}$ <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitter, as determined by an electromagnetic site survey a, should be less than the compliance level in each frequency range b.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
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### 11.3. Separation Distance

The Provizio SEM Scanner is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The user of the Provizio SEM Scanner can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Provizio SEM Scanner as recommended below, according to the maximum output power of the communications equipment. The recommended separation distance between portable and mobile RF communications equipment and the Provizio SEM Scanner is listed in Table 5.

**Table 5. Separation Distance**

Separation distance according to frequency of transmitter (meters)			
Rated maximum output power of transmitter (W)	150 kHz to 80 MHz $d = 1.2 \cdot \sqrt{P}$	80 MHz to 800 MHz $d = 1.2 \cdot \sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3 \cdot \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where  $P$  is the maximum output rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.



## 11.4. Specifications

**Table 6. Specifications**

Item	Specifications
Applied Part	Type BF
Battery Life	3 hours (typical)
Method of Cleaning and Disinfection	Clean the device as defined in User Manual
Water ingress protection	IPX1
Duty Cycle	Continuous operation
Power Source	Internally powered equipment
SEM Value Range	0.3 to 3.9 SEM Value units
SEM Value Repeatability* <sup>1</sup>	+/- 0.2 SEM Value units
Storage	The Provizio SEM Scanner should only be stored at temperatures ranging from -4°F (-20°C) to 113°F (45°C) at 5% to 90% relative humidity (non-condensing).
Operating Conditions	The Provizio SEM Scanner should only be operated at temperatures ranging from 59°F (15°C) to 95°F (35°C) at 5% to 90% relative humidity (non-condensing).
Charging Mat AC Mains Voltage	100-240 V
Charging Mat Mains Current	0.5 A

<sup>1</sup> Repeatability is the variation of a single device in measuring the same location by the same person when multiple measurements are taken one after the other (“repeat”) at that time.

## 12. Troubleshooting

If any situation cannot be resolved, please contact your system administrator or institutional Information Technology Department. If the situation can still not be resolved, please contact your Product Specialist or BBI Customer Service.

**Table 7. Troubleshooting**

Problem	Resolution
<b>SQL Server Set-Up and Connection</b>	
We do not have SQL Server installed.	SQL Server is required for the operation of the Gateway.
I cannot find the SQL Server URL/port.	Contact your system administrator for the correct URL for your institutions installation.
I cannot save settings to the SQL Server.	Ensure you have sufficient SQL Server privileges to update settings.
SQL settings were not verified.	Re-enter the SQL settings and re-verify. Ensure you have sufficient SQL Server privileges to update settings.
<b>LDAP Server Set-Up and Connection</b>	
I cannot find the LDAP Server URL/port.	Contact your system administrator for the correct URL for your institutions installation
I cannot save settings to the LDAP Server.	Ensure you have sufficient LDAP Server privileges to update settings.
LDAP settings were not verified.	Re-enter the SQL settings and re-verify. Ensure you have sufficient LDAP Server privileges to update settings.



Problem	Resolution
BBI Webserver Set-Up and Configuration	
The Virtual Machine (VM) does not start.	Ensure the VM was installed with no errors. Ensure you have sufficient privileges to start the VM.
Telnet connection to the SQL Server fails.	Re-enter the SQL settings and re-verify. Ensure you have sufficient SQL Server privileges to update settings.
Telnet connection to the LDAP server fails.	Re-enter the SQL settings and re-verify. Ensure you have sufficient LDAP Server privileges to update settings.
DB Connection test failed.	Ensure the database connection information in the Gateway is correct and current.
LDAP Connection test failed.	Ensure the LDAP connection information in the Gateway is correct and current.



ENGLISH (US)

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