NPi®-200
Pupillometer System

Electronic Medical Record (EMR)
Technology Overview and Workflow Planning Guide

Our Technology

The NPi-200 Pupillometer System uses RFID (radio frequency identification) technology to transfer data between the pupillometer and the SmartGuard®. RFID facilitates data collection at high speed using low wattage (13.56 MHz) radio frequency to read from and write to the SmartGuard memory. Incorporated into the design of the NPi-200 Pupillometer is a radio frequency (RF) antenna which broadcasts patient data information to the SmartGuard®.

SmartGuard®

The disposable SmartGuard incorporates a 4K RFID technology manufactured by Mifare. The memory consists of a sequence of blocks each containing a pair of measurements from the left and right eye. Each pair is time-stamped and contains the pupillary variables from both the left and right eyes. The Mifare 4K memory can store up to 168 paired measurements. Data saved in the memory can be accessed using a RFID reader device (SmartGuard Reader).

Entering the Patient Identification Number

To program a new SmartGuard, attach a SmartGuard to the NPi-200 Pupillometer. Enter the patient identification (ID) number either by manual entry or by using the NeurOptics® Antimicrobial Barcode Scanner. If using the scanner, scan the barcode printed on the patient's wristband to write the patient ID into both the Pupillometer and the SmartGuard memory. Every valid pupillary measurement made with NPi-200 will be saved into the SmartGuard memory.

Barcode Scanning the Patient Identification Number

The NeurOptics Antimicrobial Barcode Scanner (BCS-CC-01) is compatible with 1D (one dimensional) linear barcode technology. The NeurOptics Antimicrobial Barcode Scanner (BCS-CC-02) is compatible with both 1D and 2D barcode technology. If your clinical staff prefers to enter the patient ID number by manual entry into the NPi-200 Pupillometer, they can as described in our **Instructions for Use** and our **Quick Start User Guide**.

SmartGuard Reader

The SmartGuard Reader (SGR-01-5022) is manufactured by Omnikey HID. CCID native driver from operating system (Windows/Linux/Mac). PC OS includes: Windows 10/8.1/8/7/ Vista/Server 2012/ Server 208R2, Windows CE (6/7) depending on hardware. Host interface is USB 2.0 Rull Speed Device (12 MBps); and USB 3.0 extended operability. Refer to Omnikey specification for more detail.

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Device Driver

The NPi-200 Pupillometer System is a point-of-care standalone device which is EMR-enabled but reliant on a driver interface to the hospital EMR system. Please contact your EMR or middleware provider to obtain the appropriate driver or software plug-in for the NeurOptics NPi-200 Pupillometer. If your EMR service provider has not already written the pupillometer interface, NeurOptics will provide the necessary data protocols upon request.

Workflow

The main EMR application runs in the background of the EMR module or computer and it can access and read data in the SmartGuard memory using the SmartGuard Reader and the associated driver for software interface. Data is then sent to the host computer using standard protocols (ie: HL7). The application in the host computer updates the EMR system with the uploaded information received from the EMR module.
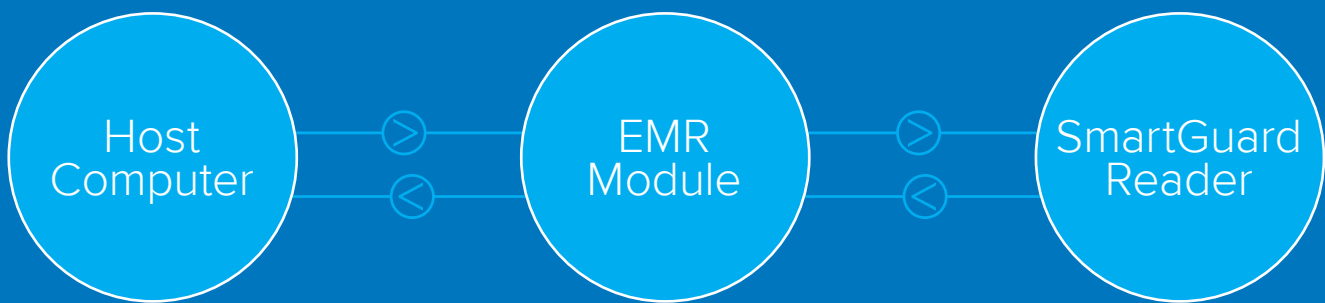
Installation Preparation

To prepare for the installation of the new technology into the clinical environment, please provide your NeurOptics representative with a non-confidential patient ID wristband which will allow us to validate and verify barcode data structure compatibility.