

Technical Bulletin

Ref. TB-11001

Issue date: **February 2011**

Product: INOmax[®] DS_{IR} / INOmeter[®]

Priority: Low

Affected parts: INOmax DS_{IR}

Classification: Information

Subject: INOmax DS_{IR} / INOmeter[®] Infrared (IR) Communication

WARNING: Loss of communication between the INOmax DS_{IR} and the INOMAX[®] cylinder for more than one hour will result in interruption of INOMAX delivery.

Caution: High frequency and/or high intensity light emission, in the area of the INOmeter, may interfere with communication between the INOmax DS_{IR} and the INOmeter on the INOMAX cylinder.

Background:

The INOmax DS_{IR} has an interface using infrared technology which will allow the INOmax DS_{IR} to communicate with the INOmeter (which is mounted to each INOMAX cylinder). The INOmax DS_{IR} checks the INOMAX cylinder for the correct expiration date and cylinder concentration. The INOmax DS_{IR} also transmits a confirmed patient identifier and dose settings to the INOmeter on any open INOMAX cylinder.

The INOmax DS_{IR} cart has a cover with an infrared transceiver mounted directly above each INOMAX cylinder (see Figure #1). When INOMAX cylinders are loaded, communication will take place between the INOmax DS_{IR} and the INOmeter (after the boot up phase of the INOmax DS_{IR} is complete). A cylinder icon will be displayed on the main screen when an INOMAX cylinder is recognized by the INOmax DS_{IR}.

Figure #1



There are typically three questions regarding INOmax DS_{IR} communication within a hospital:

IR Communication Interference:

Question: Will the INOmax DS_{IR} communication with the INOmeter on the INOMAX cylinder be affected by other IR devices within the hospital?

Answer: It is possible under extreme conditions to experience a loss of the cylinder icon on the user screen and/or a “Cylinder Not Detected” alarm to activate.

The INOmax DS_{IR} transceiver is located under the cart cover and should be protected from outside IR sources. There may be a slight chance that an outside IR source could interfere with the INOmax DS_{IR}/INOmeter communication.

The following actions can remedy this issue should it occur:

- Move the external IR source
- Move the INOmax DS_{IR} cart to reduce the external IR source in the area of the INOmeter
- Shield the INOmeter from the suspect IR source

In an unlikely case of extreme interference, the Transport Regulator/Cap Assembly could be utilized.

Question: Will the INOmax DS_{IR} negatively affect other IR devices within the hospital?

Answer: It is unlikely given the following information.

The INOmax DS_{IR} transceiver transmits via a 30 degree transmission cone projecting towards the floor (see dotted lines in Figure #1). The IR beam is specified to have a range of 20 cm (7.9 in) which should not affect other devices in the vicinity of the INOmax DS_{IR}. The INOmax DS_{IR} cart was designed to protect the INOmeter from external light/IR energy sources. The INOmeter uses a lower energy source which results in a lower IR beam range than the INOmax DS_{IR} cart. The INOmeter does not transmit IR signals unless it mounted on the INOmax DS_{IR} cart.

External Light Interference:

Question: Will light sources affect INOmax DS_{IR} communication with the INOmeter on the INOMAX cylinder?

Answer: It is possible under extreme conditions to experience a loss of the cylinder icon on the user screen and/or a “Cylinder Not Detected” alarm to activate.

High frequency and/or high intensity light emission, in the area of the INOmeter, may interfere with communication between the INOmax DS_{IR} and the INOmeter on the INOMAX cylinder.

The following actions can remedy this issue should it occur:

- Move the interfering light source
- Move the INOmax DS_{IR} cart to reduce the high intensity light in the area of the INOmeter
- Shield the INOmeter from the suspect light source

In an unlikely case of extreme interference, the Transport Regulator/Cap Assembly could be utilized.

Test results have demonstrated some susceptibility to unintended infrared energy from artificial light sources. Most notably, various lighting fixtures that focus or reflect light increasing the light intensity in the vicinity of the INOmax DS_{IR} cart could affect INOmeter communications. Compact fluorescent light caused loss of communications under some conditions.

If you have further questions, please contact technical support at 1-877-566-9466.