



# Forsythe Technologies Worldwide Telemetry System Operating Manual





*\*Read prior to implanting and operating your telemetry system \**

The System measures physiological parameters in laboratory animals and is used exclusively for medical research. It consists of a minimum of two transceiver devices, one implanted (pressure/temperature Transceiver) and one connected to a computer (Base Station Transceiver). The transceiver connected to the computer may communicate with multiple implant devices. In each System, the Base Station sends commands to the implanted device(s), which in turn measures the animal's physiological parameters and stores the data in memory. When the computer is ready to receive the data, the Base Station sends an upload command to the implant and the implant sends the data.

Typically, the command to instruct the implant on what to measure takes about 4.5 milliseconds and the data is uploaded in a few seconds. Both the implant and the Base Station device are in standby mode 99% of the time, with the Base Station device turning on its radio only when needed. Every few seconds the implant turns its receiver on for 4.5ms to listen for commands.



***System consists of following components – Please check your system and report any missing items.***

***Transmitter/implants***

***Receiver/Antenna***

***Software***

***USB Cable***

**Transmitter –**

***The pressure transducer is extremely sensitive!***

1. Implant will be supplied with any of the following leads – Pressure catheter, Biopotential leads.
2. Temperature built into implant
3. Antenna – Short clear lead
4. Battery permanently built in into implant housing. Do attempt to remove.
5. Serial number located on outside of implant

**Receiver-**

1. Small white case has a USB and Antenna connection located on both ends
2. Attached to the back of Antenna unit, can be removed (fastened with Velcro for easy removal)
3. USB cable supplied for computer connection
4. Receiver driver software - CD

-When attaching or removing tips if the above instructions are not followed the internal load cell can or will become permanently damaged (bent) and will require repair and replacement. -

***Care and Handling –***

Extreme caution should be used when handling any implant.

Pressure catheter has a small, glass tip which can be broken if mishandled rendering the implant unusable to measure pressure.



**DO NOT** – Grab, pinch, squeeze, drop the glass enclosed pressure tip under any circumstances. This applies to surgery also.

We recommend only handling the pressure lead approximately 1cm from glass/pressure catheter tip.

### **SET UP –**

Unpack the system to assure all parts and items are intact and no damage in shipment has occurred. Report any errors in shipping or damage immediately upon inspections of goods.

### **Connecting Receiver to computer -**

Plug supplied USB cable into the port located on your receiver and into an available USB port on your computer.

**Once connection has been made, Windows should recognize “a new device” window pops up.**

**If Windows does not auto-install the driver – Point to driver which is located on the supplied software CD.**

**Follow supplied Data Acquisition Software Manual and surgery protocol video and manuals supplied with your system to begin your experiment.**

### **RF Exposure –**

User must maintain a separation distance of 20cm between the device and the body at times when device is operational.



### **FCC Notice (for U.S. Customers):**

*This device complies with Part 15 of the FCC Rules:*

*Operation is subject to the following conditions:*

- 1. This device may not cause harmful interference, and*
- 2. This device must accept any interference received, including interference that may cause undesired operation*

*Changes and Modifications not expressly approved by **Forsythe Technologies Ltd.** can void your authority to operate this equipment under Federal Communications Commission's rules.*

### **IC Notice:**

**RSS-Gen Issue 3 – Required Notices to the User:**

***This device complies with Industry Canada license-exempt RSS standard(s).** Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.*

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### **IC Notice Antenna:**

*Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.*

*Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.*



*“These radio transmitters have been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.*

*Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.*

**Antenna approved: IC: 12302A-AP430001REC – Patch Antenna 8DBi**