

Technical Specifications

Temperature Monitor

Display
30° to 100°C in all lesion/pulsed modes

Temperature Probes
Wide range of NeuroTherm probes available

Impedance Monitor

Display
Reads biological impedance in all different modes throughout the procedure

Range
50-2000 Ohms (in 1 Ohm steps)

Self test
Internal 500 Ohm test resistor

Sound
Audible impedance monitoring available

Stimulation

Waveform
Balanced biphasic waveform with negative leading edge

Pulse width
0.1, 0.2, 0.5, 1.0 mSec

Pulse rate
Sensory 10, 20, 50, 75, 100, 150, 180, 200 Hz
Motor 2, 5 Hz

Amplitude
Constant Voltage 0-5.0 V
0-3.0 V
0-0.5 V
Constant Current 0-10 mAmp
0-6 mAmp
0-1 mAmp

Motor and sensory ranges are independent of each other

Continuous RF Lesion Mode

RF power
0-30 Watts into 200 Ohms

Frequency
480 kHz sine wave

Display
Voltage 0-99 Volts (RMS)
Current 0-999 mAmps (RMS)
Power 0-30 Watts
Impedance 50-2000 Ohms
Dynamic graphic display of temperature 30-100°C

Time
Selectable 0:30 to 10:00
Timer automatically starts when temperature is within 5°C of set temperature

Auto mode
By pressing the Auto start button the temperature will ramp up 8°C per second until set temperature is reached. The time will start when the temperature is within 5°C.

Maximum temperature set
Selectable 50-90°C in 5° or 1°C steps. Automatically adjusts RF power to not exceed temperature.

IDET
P1, P2 and P3 are three pre-programmed IDET Profiles. In custom step mode there is the possibility to set up different IDET profiles by setting Start temp, Step time, Step rise, Final temp, Final dwell time

Pulsed RF Mode

Output
User definable pulse bursts of RF power

Pulse burst width
5, 10, 20, 50 mSec

Pulse burst frequency
1, 2, 5, 10 Hz (Only 1, 2 Hz in multiple Probe Mode)

Amplitude range
Constant Voltage 30 – 70 Volts (RMS)
Constant Current 50 – 350 mAmps (RMS)

Maximum temperature set
Selectable in 42 – 90°C range

Time
Selectable 0:30 – 20:00 minutes

Pulsed Dose
In pulsed dose mode only pulses of the full pulse width and full amplitude will be delivered to the patient. The number of pulses to be delivered is chosen in place of time. A counter displays the delivered dose.
120 to 2400 Pulses

Multiple Probes

The NeuroTherm NT1100 can be used with 1, 2 or 3 probes simultaneously in RF lesion, Pulsed RF and Pulsed Dose modes. The "Intellipower" algorithm ensures a smooth and safe, synchronous temperature rise of each electrode.

Safety Features

Sterile probe test
Checks probe intraoperatively

Output lockout
Hardware and software lockout if voltage / current control is not initially set to zero in all stimulation and RF modes.

Maximum temperature
Lesion temperature is limited to 90°C
Additional hardware lockout should temperature exceed 95°C

Thermocouple
Lockout when a faulty thermocouple electrode is connected to one of the sockets

Operation

All settings are entered through the touch screen. When actually performing the procedure the touch screen is only used as display. All active controls are located on the control panel.

Data Input

User defined settings
Up to 12 different doctors can store their own unique settings in the internal memory of the generator.

Patient details

Patient details can be entered into internal memory and used in reports. After entering the patient details, the patients can be selected in a drop-down menu, when starting the procedure.

Data Acquisition

Data transfer
All procedure details can be exported out of the NT1100 in CSV file format. These files can be converted into for example Microsoft ExcelID files.

Instant procedure reports

Reports of all procedures performed are available on the NT1100. These reports can be viewed on the screen, printed on the Bluetooth printer or exported to the USB stick in TXT file format.

Procedure site labelling

Up to eight custom "site-labels" can be entered into the NT1100, to indicate the different treatment sites. Site labels can be assigned to a treatment by a simple touch on the screen, before or during the procedure.

Peripheral Accessories

USB connection
A USB memory stick (delivered with the NT1100) can be used to export the procedure details from the NT1100 to a computer.

Additional Screen
An external screen can be connected to the NT1100 giving a repeat view of the display screen. The output is isolated from the NT1100 with the NeuroTherm video unit (NFVD)

Printer
A printer can be connected to the NT1100 using a Bluetooth connection, to print procedure reports.

Defaults

Sensory stimulation
50 Hz, 1.0 mSec, 03 V

Motor stimulation
2 Hz, 1.0 mSec, 03 V

Continuous RF lesion mode
80°C, 1:00 min

Pulsed RF
20 mSec, 2 Hz, 42°C, 45 V, 2:00 min

Pulse Dose
20 mSec, 2 Hz, 42°C, 45 V, 240 pulses

Standards

EN60601-1:1997
IEC60601-1-2:1983
IEC60601-2-2:1998
IEC60601-2-10:With Canadian deviations

With respect to electrical shock, fire and mechanical hazards only in accordance with UL60601-1, IEC60601-1, CAN/CSA C22.2 No. 6011 and IEC60601-1

Protection for electrical shock
Class II type BF

Warranty

Two years

Any equipment connected to rear sockets must comply with IEC60950 and IEC60601-1

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Microsoft Excel™ is a registered trademark of Microsoft corporation, USA

NeuroTherm®

NT 1100

US Patent No. 7,574,257

The first
multi-Electrode
RF Generator
now has even
more to offer.



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NeuroTherm®
30 Upton Drive, Suite 2
Wilmington, MA 01887
USA
Tel: +1 888 655 3500
Fax: +1 978 658 2378



NeuroTherm®
429 Brighton Road, Croydon
Surrey, CR2 6EU
United Kingdom
Tel: +44 20 8660 4374
Fax: +44 20 8660 9417

NeuroTherm®
Modemstraat 20
1033 RW Amsterdam
The Netherlands
Tel: +31 204 702 702
Fax: +31 204 702 701

Always
a step
ahead...

Customize your NT 1100 Radiofrequency Generator.

Program your personal preferences for every mode or procedure, add patient data at the start of your day or prior to their procedure, and label up to 8 anatomical sites.

NT 1100 comes with integrated data acquisition software so you can access your data when you want it.

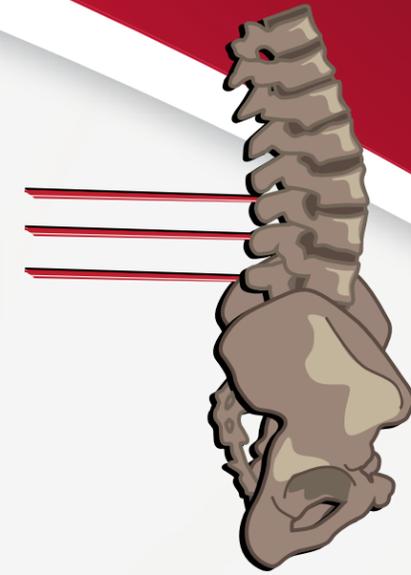
Data Management right at your fingertips.



NT 1100, the newest and most advanced Radiofrequency Generator, is the only machine compatible with the latest technologies designed by NeuroTherm. This software based generator sets the standard for innovation, efficiency, and safety.

Multiple Electrodes

The first to offer Multiple Electrodes in simultaneous use. Perform RF procedures more efficiently by treating up to 3 sites simultaneously in either Lesion, Pulsed, or Pulse Dose modes. Each electrode is controlled independently to maximize safety during your procedure.



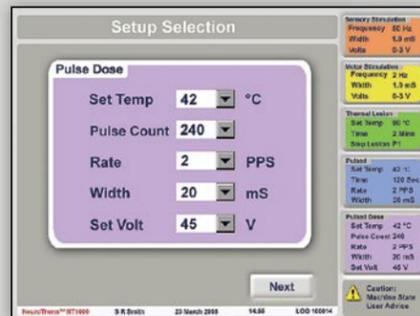
Simplicity III*

Simplicity III is a new probe designed with three distinct active areas. It is flexible enough to navigate challenging anatomical areas and the user can control the shape of lesion or electric field created in the nerve tissue. Harness the power of RF with Simplicity III.



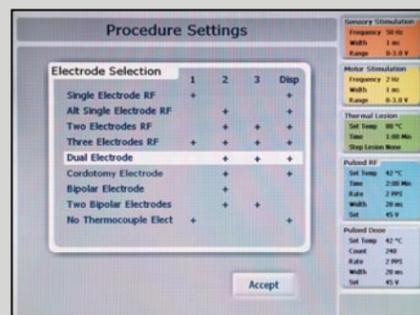
Pulse Dose*

The alternative that makes sense. For the first time ever, you can be sure of the voltage delivered with every pulse of radiofrequency. Using Pulse Dose will not compromise amplitude, pulse width, or pulse rate. Simply set your preferred voltage, press auto start, and count down the pulses.



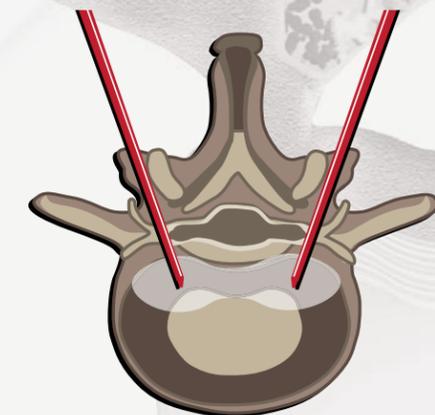
Dual Electrode

Only the NT 1100 has a dual electrode capability for Thermal Lesion and Pulsed Radiofrequency modes where RF energy is communicated between the two active tips. Optimal placement of the two electrodes can create a larger lesion size or electric field compared to using only one electrode. A safe and economical clinical option.



Diskit II

Diskit II offers a safe, simple, and effective alternative to disc treatments. The kit comprises of two easy to place 20 gauge introducers with matching electrodes. The unique algorithm in the NT 1100 directs the RF energy between the two active tips without the use of a dispersive plate. Diskit II can be used either in Thermal lesion or Pulsed RF to treat discogenic pain. The result is a larger lesion within the annulus or a wider electric field in Pulsed mode.



*Patents applied for by NeuroTherm