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September 25, 2006

ELECTRONIC SUBMISSION

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: ET Docket No. 06-135
RM-11271
Ex Parte

Dear Ms. Dortch:

This is to inform you that, on Friday, September 22, 2006, in connection with the above-referenced docket, Dr. Larry Stotts, Jim Nelson, Paul Stadnik, and Mark Johnson, all of Biotronik, Inc., and the undersigned, met with Julius Knapp, Bruce Romano, Alan Scrime, Ron Repasi, Gary Thayer, and Jamison Prime, all of the Office of Engineering and Technology. The purpose of the meeting was to discuss the Commission's NPRM in the above-referenced proceeding. A copy of the presentation that was provided is attached hereto.

Please direct any questions regarding this matter to the undersigned.

Respectfully submitted,

Henry Goldberg

Henry Goldberg
Attorney for Biotronik, Inc.

cc: Julius Knapp
Bruce Romano
Alan Scrime
Ron Repasi
Gary Thayer
Jamison Prime

- Over 11,000 BIOTRONIK Home Monitoring Systems have been implanted in the US
- Pacemakers Implantable Cardioverter Defibrillator's and CHF devices

  ..with no reports of interference.
- These implants have generated over 5 million successful transmissions

FROST & SULLIVAN

2006 Cardiac Rhythm Management Product Innovation of the Year Award

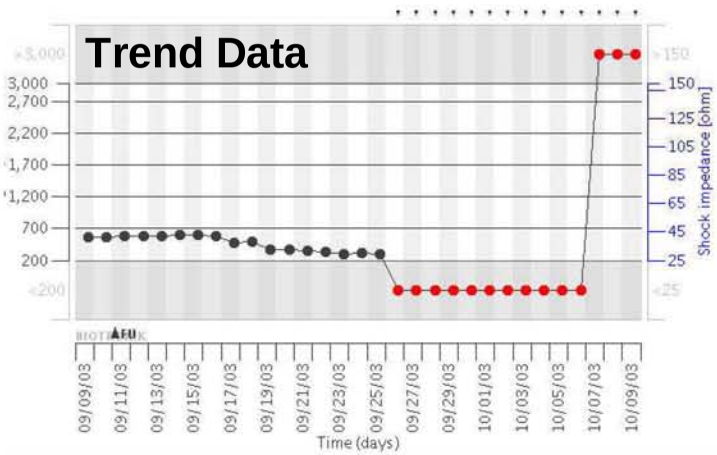
Award Recipient: Biotronik

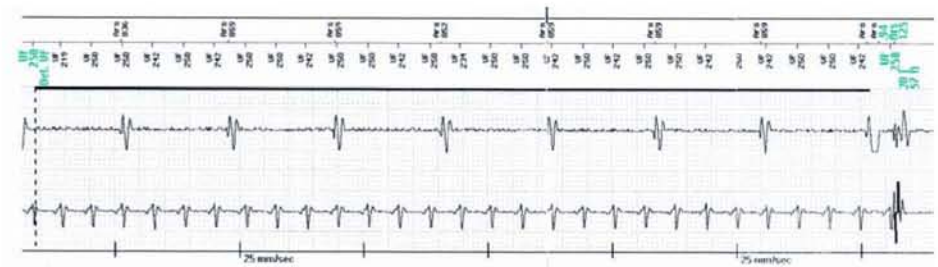
Heart Rhythm Society℠ **Recommendations**

‘To identify abnormal devices earlier, manufacturers should expand use of **wireless and remote monitoring technologies** that can track the implants daily’.

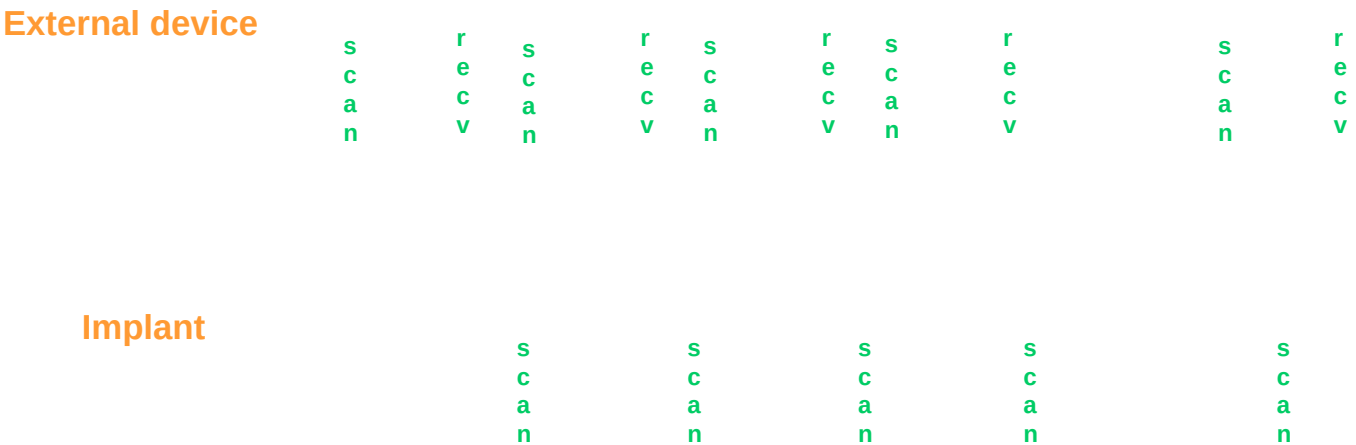
Remote access: LPLDC

Implant and Follow-up: LBT





Both use cases can exist on the same frequency and in the same device



The result is additional RF transmissions during search and additional current drain from implant

External device

Listens on LPLDC Channel

s c a n

r e c v

Implant

s c a n

The result is a simplified search process, fewer transmissions and better implant longevity

External device

Listens on LPLDC Channel

Implant

The result is smaller, less complex, and longer lasting devices

The low power involved and the nature of the home, ambulatory and clinic use make interference extremely unlikely.

Scenario: LPLDC Implants

Waiting Room with LP-LDC Implant Patients

Physician's Office with MICS LBT System

Interference

100 nW

Up to 10 LP-LDC implants randomly distributed in this region.

Patient
100 nW

Physician's programmer randomly distributed in this region.

2 meters

LP-LDC implants can be as close as 2 meters to the Physician's programmer. Maximum separation is 10 meters.

SEAMCAT
Spectrum Engineering Advanced Monte Carlo Analysis Tool

Simulation Parameters

Simulation Parameter	Value
LPLDC Implant Power	100 nW, 0.1% duty cycle
LBT MICS Implant Power	100 nW
Physician's Programmer Power	25 uW
Physician's programmer duty cycle	100%
Number of Transmitters	Up to 100
Distance between patient and physician's programmer	0.4 to 2.0 meters, random
Distance between waiting room patients and physician's programmer	2 to 10 meters, random
Antenna Gains	0 dBi, omni-directional
Receiver Sensitivity	-100 dBm
C/I for BER = 1×10^{-03}	14 dB
Channel Bandwidth	300 kHz
Monitoring System Threshold Power, as per FCC 95.628(a)(3)	-95 dBm
MICS Channels available	10
Indoor Path Loss Model	Extended Hata (SRD) with 1 wall

Sensitivity Analysis: Number of Transmitters

# LPLDC Transmitters	Probability of Interference
1	1.66×10^{-5}
2	3.32×10^{-5}
4	6.64×10^{-5}
6	9.96×10^{-5}
10	1.66×10^{-4}
20	3.32×10^{-4}
50	8.27×10^{-4}
100	1.65×10^{-3}

Sensitivity Analysis: Transmitter Power

Transmitter Power	Probability of Interference
100 nW	9.96×10^{-5}
250 nW	1.41×10^{-4}
1 µW	2.17×10^{-4}
2.5 µW	2.82×10^{-4}
25 µW	4.27×10^{-4}

LPLDC

LBT

The low power translates into the 9.96 x 10^{-5} probability of interfering with MICS users even if there are many LPLDC systems in the vicinity.

LPLDC can coexist on the same frequencies with LBT MICS systems.