



SEPTEMBER 30, 2015

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NEUROSCIENCE 2015, MOBILE APP, DIGITAL HEADSTAGE COMMUTATOR, LIME LED, PC SECURITY AND MORE!

COUNTDOWN TO NEUROSCIENCE 2015

In less than three weeks it all comes together! We spend months preparing the booth, designing materials, building equipment and the staging demonstrations – all for you. This month's newsletter provides a small taste of what is in store from new products to the Plexon App to the Workshop raffle to new job openings. Don't miss a beat! Plexon will be in our usual multi-space, island booth #1163.

We have several additional surprises for you as we get closer to the big event, so watch your inbox!



NEW PLEXON MOBILE APP

Plexon is thrilled to once again be the industry leader with the launch of its first mobile application. The Plexon App has one purpose only – and that is to keep researchers informed of new software, firmware and hardware releases to keep their products current, secure and at peak performance.

Plexon is constantly offering new releases for its products – and the overwhelming majority of those releases are FREE of charge. The releases often contain new functionality, improved performance, increased security, and possibly most importantly, bug fixes in response to the evolving world of third party equipment interaction and the ever advancing demands of research. Last year alone, Plexon made available 16 new software releases, eight new demonstration executables, one new software development kit (SDK) and one hardware upgrade – across seven different products – and all at no cost to users of the equipment. In addition to the complementary releases, we also launched the new version of NeuroExplorer®.

Researchers may download the Plexon App from either the Google Play® store or the iTunes® store. The Plexon App runs on Android devices, as well as Apple devices running OS 8.3 or higher.

Registering through the Plexon App, although optional, has its benefits. A registered researcher will have the ability to customize the products for which he or she receives alerts. Information available through the Plexon App will include:

- Immediate notices of new software, firmware or hardware releases, and
- A link to the related, technically detailed news release with important notes and considerations.

For more information, click to the Plexon App page or contact support@plexon.com. Check out the FREE give-away on page three for showing us the app on your phone at Neuroscience . . .

NEW CAROUSEL™ COMMUTATOR FOR DIGITAL HEADSTAGES, OPTOGENETICS

Introducing the Carousel™ Commutator for use with digital headstages in neural recording and/or PlexBright® LED Modules for optogenetics - the newest in a line of sophisticated Plexon commutators.

Plexon offers a range of robust, low-torque commutators that dependably keeps multiple types of cables untangled. The newest in Plexon's commutator line is the Carousel Commutator. It is a passive device for use with up to two digital headstages and up to two PlexBright Compact LED Modules. The commutator supports up to 64 channels with any combination of 16 and 32 channel digital headstages. As a bonus, digital headstage cables are also particularly lightweight requiring fewer wires, yielding a less encumbered subject with which to begin. This is especially beneficial with higher channel counts.

The new Carousel Commutator is designed for use with the Plexon OmniPlex® D Neural Data Acquisition System utilizing a Digital Headstage Processor (DHP), as well as with the PlexBright Optogenetic Stimulation System – combined or either system alone.

The Carousel Commutator will be on display at Neuroscience 2015 along with several of Plexon's other commutators: passive and motorized, for use with analog headstages, and for use with optogenetics. For more information, visit our Commutator page or contact info@plexon.com.

NEW PLEXBRIGHT LIME LED MODULES, HIGH POWER, BROAD ACTIVATION SPECTRUM

Plexon has once again expanded its robust spectrum of LED modules for optogenetics research by launching new PlexBright Lime LED Modules (550nm) just in time for Neuroscience 2015 in Chicago next month.

The new Lime LED Modules offer high power and a broad wavelength activation spectrum that will be attractive to researchers working with halorhodopsins (typically using green LEDs) or archaerhodopsins (typically using yellow or orange LEDs).

PlexBright LED Modules are known for generating the industry's highest power outputs, and the new Lime LED Modules are no exception. With the new Lime LED Module, researchers will experience 19.8mW of power emanating from either the Compact LED Module form factor for use with PlexBright LED Commutators, or from the Table-top LED Module form factor when commutators are not necessary.

For more information or to see the supporting power output table or the spectral power distribution charts, read the news release posted online.

New PlexBright Lime LED Modules will be compatible with all PlexBright Optogenetic Stimulation System equipment, including the newly launched Carousel Commutator mentioned above. Check them both out the booth!

BRING YOUR DATA, DEMO OFFLINE SORTER™ V4

In April this year, we launched the newest, most robust Offline Sorter™ Neural Spike Sorting Software (OFS) yet. If you have not experienced it already, this is a great time to bring your data and give it a whirl! OFS v4 will be loaded on all computers in the Plexon booth for convenient access. As a brief reminder, OFS v4 now offers: Overlaps analysis,

- Signal-to-noise ratio (SNR) computations,
- High-cut filtering application to continuous channels,
- Digital referencing, and
- Many more features including expanded sorting methods.

For more information regarding the above and more, stop by the booth or just email us at info@plexon.com.

NEW DOCUMENT - PYTHON GUIDE FOR PLEXSTIM™ STIMULATOR

Plexon recently posted the new PyPlexStim Technical Guide, a Python package for controlling the Plexon PlexStim™ Electrical Stimulator. Up to four PlexStim stimulators, thus 64 channels, can be controlled through this package, as long as none of the stimulators are simultaneously being controlled by the PlexStim GUI.

PyPlexStim is only for Python 2 (2.7.3+) in Windows® 7, 32 or 64-bit, and is only compatible with PlexStim stimulators with hardware number 14-20-A-10-F (written on the bottom of the stimulator). The document can be found on either the PlexStim webpage, Resources tab or on the Documentation page under the PlexStim Electrical Stimulator header.

IT'S BACK . . . WORKSHOP RAFFLE WORTH \$900

Week of: April 11, 2016 Almost a standing tradition at this point, the Workshop Raffle at the annual Neuroscience conference is back! Two lucky researchers will each win a FREE registration to the 2016 Annual Neurophysiology and Behavioral Research Workshop worth \$900!

The Workshop is limited to 40 attendees, ensuring maximum hands-on experience. Each winner receives three days of intense training, 1-on-1 coaching, robust materials and exercises, a certificate of completion, two \$150.00 gift certificates for the 2016 Workshop, admission to the Welcome Reception, a ticket to the popular social event, and breakfast and lunch for all three days.

Raffle contestants are invited to enter once during the conference exhibit hours. Upon the close of the exhibition, two names will be drawn and winners will be contacted immediately. Raffle rules will be available at the booth. Good Luck to all entrants!

See page three for perspectives on the Workshop from past attendees. This month we are featuring Carlos Puentes-Mestrel's thoughts from the University of Michigan.

DID YOU KNOW . . . ABOUT PLEXON PC PROTECTIONS AND LIMITATIONS?

Computer security has never been more top of mind than in the past year as hackers have become more aggressive. It may be important for you to know that PCs purchased from Plexon through August 2015 included a two-year subscription to the pre-installed AVG AntiVirus program. After the subscription has expired, you are highly encouraged to renew it.

This month and going forward, Plexon is installing the free version of AVG AntiVirus on the PCs we ship. We take care to pre-configure AVG to be minimally invasive in order to prevent recordings from being affected. You are welcome to replace AVG with other antivirus programs, but take extra precautions to prevent it from automatically updating or scanning when experiments are being performed.

We also turn off Automatic Windows updates to avoid interfering with data collection during an experiment. This is critical for uninterrupted recording;

however, it does require that you make an intentional effort to perform the updates that would have occurred automatically. Please periodically update Windows by going to the Windows control panel and clicking on **Windows Update**.

Other programs installed on the PC, like Adobe® Flash and Acrobat® Reader also have important updates that must be installed. These can be installed through their respective user interfaces, or by going to the Adobe website.

If you have any questions about this subject, feel free to contact support@plexon.com.

PLEXON WORKSHOP ALUMNI SPEAK OUT:

CARLOS PUENTES-MESTRIL

"The Plexon workshop exceeded my expectations. I had little experience with Plexon prior to the conference and needed a crash course in their software. Instead, I received an immersive training experience where I had the opportunity to talk to developers one-on-one and utilize the software under practical examples. The workshop was very thorough and covered quite a bit in the three days we had; we went from setting up the equipment to analyzing data.

They were also very receptive to suggestions from researchers regarding possible additions to the software. It was well worth the time and money. I would recommend the workshop to anyone new to the Plexon system."

Carlos Puentes-Mestri

University of Michigan

FREE SCARF AT NEUROSCIENCE

Everybody loves free stuff! In fact, we are regularly questioned about what new Plexon T-shirts, bowling shirts, ties and such will be available. This year, we have expanded our accessory line . . . this time, something for the winter season.

So, if you are attending Neuroscience 2015 in Chicago, show the Plexon App on your phone at the booth #1163 to get a FREE, first edition, Plexon fleece scarf on the spot!

FREE PLEXSTIM™ FIRMWARE UPGRADES

Reminder to existing users of the PlexStim Electrical Stimulator: PlexStim™ Software v2.3 requires a FREE firmware upgrade to benefit from the new functionality as well as the improved reliability and enhanced electrical isolation. Email support@plexon.com to take advantage of the offer.

FREE OFS V4 UPGRADES FOR 2015 V3 ORDERS

Just a reminder to those labs who purchased new licenses of OFS v3 in 2015 prior to April 23 - you are entitled to a FREE upgrade to OFS v4. Email info@plexon.com for more information. Offer expires on December 21, 2015.

70% OFS V4 UPGRADE DISCOUNTS FOR Q4, 2014 V3 ORDERS

Just a reminder to those labs who purchased new licenses of OFS v3 between Oct. 1 and Dec. 31, 2014 - you are entitled to 70% off of the standard OFS v4 upgrade. Email info@plexon.com for more information and/or a quote. Offer expires on December 21, 2015.

PLEXON KEEPS HIRING!

We keep growing and are constantly seeking outstanding, neuroscience-loving candidates for the following roles:

- System Integration Engineer for Neuroscience
- Electrophysiology Sales
- Inside Sales for Neuroscience
- Senior Windows Software Engineer for Neuroscience

We especially encourage students and lab technicians from neuroscience and behavior research labs to apply. If you are interested, send your resume to jobs@plexon.com.

OFFICE CLOSURES

Our European headquarters will be closed Wednesday, November 11 in observance of Armistice Day. Standard operations will resume Thursday, November 12.

In observance of Thanksgiving Day in the United States, Plexon's world headquarters will be closed Thursday and Friday, November 26-27. Standard operations will resume Monday, November 30

UPCOMING EVENTS

- **Neuroscience 2015**, October 18-21; Chicago, IL, USA.

RESEARCH SPOTLIGHT

Let us know about your 2015 publication citing Plexon and our equipment and we will send you a thank you award with a mug and a T-shirt! Send notices, address and T-shirt size to publications@plexon.com.

All articles listed are alphabetical based on first author within two categories: articles published online in electronic-only journals or ahead of print, and articles published in full print.

Recent articles published online in electronic-only journals or ahead of print:

- Arcizet, Fabrice, Koorosh Mirpour, Daniel J. Foster, Caroline J. Charpentier, and James W. Bisley. "LIP activity in the inter-stimulus interval of a change detection task biases the behavioral response." *Journal of Neurophysiology* (2015): jn-00604.
- Bhavsar, Mit Balvantray, Ralf Heinrich, and Andreas Stumpner. "Multielectrode recordings from auditory neurons in the brain of a small grasshopper." *Journal of Neuroscience Methods* (2015).
- Blanchard, Tommy C., Caleb E. Strait, and Benjamin Y. Hayden. "Ramping ensemble activity in dorsal anterior cingulate neurons during persistent commitment to a decision." *Journal of Neurophysiology* (2015): jn-00711.
- Botta, Paolo, Lynda Demmou, Yu Kasugai, Milica Markovic, Chun Xu, Jonathan P. Fadok, Tingjia Lu et al. "Regulating anxiety with extrasynaptic inhibition." *Nature Neuroscience* (2015).
- Carruthers, Isaac M., Diego A. Laplagne, Andrew Jaegle, John Briguglio, Laetitia Mwilambwe-Tshilobo, Ryan G. Natan, and Maria Neimark Geffen. "Emergence of invariant representation of vocalizations in the auditory cortex." *Journal of Neurophysiology* (2015): jn-00095.
- Foffani, Guglielmo, Jed Shumsky, Eric B. Knudsen, Patrick D. Ganzer, and Karen A. Moxon. "Interactive Effects Between Exercise and Serotonergic Pharmacotherapy on Cortical Reorganization After Spinal Cord Injury." *Neurorehabilitation and Neural Repair* (2015): 1545968315600523.
- Jiang, Yaoguang, Gopathy Purushothaman, and Vivien A. Casagrande. "The Functional Asymmetry of ON and OFF Channels in the Perception of Contrast." *Journal of Neurophysiology* (2015): jn-00560.
- Jo, Yong Sang, and Sheri JY Mizumori. "Prefrontal Regulation of Neuronal Activity in the Ventral Tegmental Area." *Cerebral Cortex* (2015): bhv215.
- McFarland, James M., Adrian G. Bondy, Richard C. Saunders, Bruce G. Cumming, and Daniel A. Butts. "Saccadic modulation of stimulus processing in primary visual cortex." *Nature Communications* 6 (2015).
- Pienaar, Ilse S., Sarah E. Gartside, Puneet Sharma, Vincenzo De Paola, Sabine Gretenkord, Dominic Withers, Joanna L. Elson, and David T. Dexter. "Pharmacogenetic stimulation of cholinergic pedunculopontine neurons reverses motor deficits in a rat model of Parkinson's disease." *Molecular Neurodegeneration* 10 (2015).
- Singh, Arun, Claire A. Gutekunst, Subramaniam Uthayathas, John PM Finberg, Klaus Mewes, Robert E. Gross, Stella M. Papa, and Yair Feld. "Effects of fibroblast transplantation into the internal pallidum on levodopa-induced dyskinesias in parkinsonian non-human primates." *Neuroscience Bulletin* (2015): 1-9.

- Song, Weiguo, and Mulugeta Semework. "Tactile representation in somatosensory thalamus (VPL) and cortex (S1) of awake primate and the plasticity induced by VPL neuroprosthetic stimulation." *Brain Research* (2015).
- Tsutsui-Kimura, Iku, Yu Ohmura, Takeshi Izumi, Toshiya Matsushima, Hidetoshi Amita, Taku Yamaguchi, Takayuki Yoshida, and Mitsuhiro Yoshioka. "Neuronal Codes for the Inhibitory Control of Impulsive Actions in the Rat Infralimbic Cortex." *Behavioural Brain Research* (2015).
- Walch, Olivia J., L. Samantha Zhang, Aaron N. Reifler, Michael E. Dolikian, Daniel B. Forger, and Kwoon Y. Wong. "Characterizing and modeling the intrinsic light response of rat ganglion-cell photoreceptors." *Journal of Neurophysiology* (2015): jn-00544.
- Wang, Ye, and Valentin Dragoi. "Rapid learning in visual cortical networks." *eLife* (2015): e08417.
- Xu, Xin, Yida Hu, Yan Xiong, Zhonggui Li, Wei Wang, Chao Du, Yong Yang, Yanke Zhang, Fei Xiao, and Xuefeng Wang. "Association of Microtubule Dynamics with Chronic Epilepsy." *Molecular Neurobiology* (2015): 1-12.

Recent articles published in full print:

- Bruni, Stefania, Valentina Giorgetti, Luca Bonini, and Leonardo Fogassi. "Processing and Integration of Contextual Information in Monkey Ventrolateral Prefrontal Neurons during Selection and Execution of Goal-Directed Manipulative Actions." *The Journal of Neuroscience* 35, no. 34 (2015): 11877-11890.
- Dabrowski, Piotr, Ewa Kublik, and Jakub Mozaryn. "Semiautomatic microdrive system for positioning electrodes during electrophysiological recordings from rat brain." In XXXVI Symposium on Photonics Applications in Astronomy, Communications, Industry, and High-Energy Physics Experiments (Wilga 2015), pp. 966210-966210. *International Society for Optics and Photonics*, 2015.
- Maranesi, Monica, Alessandro Livi, and Luca Bonini. "Processing of Own Hand Visual Feedback during Object Grasping in Ventral Premotor Mirror Neurons." *The Journal of Neuroscience* 35, no. 34 (2015): 11824-11829.
- Oemisch, Mariann, Stephanie Westendorff, Stefan Everling, and Thilo Womelsdorf. "Interareal Spike-Train Correlations of Anterior Cingulate and Dorsal Prefrontal Cortex during Attention Shifts." *The Journal of Neuroscience* 35, no. 38 (2015): 13076-13089