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FOR IMMEDIATE RELEASE

Eleven Engineering Responds to Lightning Audio Bug in Newer iPhones

Eleven Engineering Proactively Addresses Apple iPhone's Lightning Audio Bug with a Program to Help SKAA Users Who Have Been Affected

EDMONTON, Alberta, Canada, Nov. 10, 2016 – Eleven Engineering, Inc. (www.elevenengineering.com), a market leader in semiconductor products for wireless audio for home theater, multi-room, portable, professional, 12 Volt (car, truck, motorcycle, power sports, marine) and gaming applications, is addressing Apple's Lightning audio bug found in newer iPhones and its affect on SKAA® Diz transmitters.

“The bug occurs when outputting audio from the iPhone via the Lightning port to dock speakers, USB speakers, external DAC headphone amplifiers, wireless audio transmitters, and other Lightning audio products,” explained John Sobota, Eleven Engineering CEO. “SKAA's Diz transmitter is affected and so are other third party products. Since many Diz users are affected, we are being very pro-active here - I'm sure Apple is working diligently to fix this bug, but in the meantime we will support our customers with an innovative program to get them back up and running immediately. We want to assure all of our customers that we are working hard to protect them from this issue.”

According to Sobota, this Apple iPhone bug has already been logged with Apple. “From what we've been able to gather from multiple Internet reports and our own investigation, the iPhone occasionally fails to send all of the audio data it should to the plugged-in audio device,” Sobota continued. “This USB communication protocol error causes periodic clicks and dropouts in the audio and then the audio may stop altogether.”

This bug affects 44.1 kHz audio output only (nearly all music files are 44.1 kHz). It does not affect 48 kHz audio (nearly all videos have 48 kHz audio). “So, a good way to confirm if your phone has this bug is to use Diz to listen to some music and then watch a video,” Sobota explained. “If you hear audio problems when playing music, but *not* when playing video, your phone likely has this particular bug.”

Currently, devices affected by the bug include some (not all) iPhone 6S and 6S plus models, depending on the manufacturer of the A-series processor chip used in the phone. This bug does not appear in the iPhone 5 or 5S. So far, Eleven Engineering has not seen this bug show up in iPads or iPods. Sobota expects that some (not all) iPhone SEs are affected. It appears this bug affects all iPhone 7 and 7 Plus models.

“We think that the iPhone 6S, 6S Plus and SE have been sold with two versions of the A-series processor chips,” Sobota added. “One of these chips carries the bug and one does not. Samsung versions of the A-series chip do not have the bug. TSMC versions of the A-series chip have the bug. We think the iPhone 6S, 6S Plus and SE may have launched with the Samsung (bug free) chip but part way through their product life, a change was made to the TSMC chip. It appears the iPhone 7 and 7 plus launched with the TSMC chip from day one,

(more)

so it's likely all 7-series iPhones have the bug. This is the best information we have currently, but we will keep updating our bulletin on SKAA.com/TLC with the latest information as we get it."

Explained Rex Whitehead, Eleven Engineering Director of Sales, North America, "For SKAA customers who own Diz transmitters and who don't want to wait for Apple's fix, Eleven has created the [Lightning Bug Rescue](#) program. Customers should send a short message to Eleven Engineering via the contact form at SKAA.com/TLC with 'Lightning Bug Rescue' in the subject line and the Tx Version of their Diz transmitter in the body of the message (this may be found in the *SKAA cmd* app's info page —*SKAA cmd* is available on the iTunes App Store). Eleven will then respond with several options to get the customer back up and running again - immediately."

Sobota continued, "Our R&D team kicked into high gear when we learned about the Lightning bug. Our research revealed that the clicks and dropouts in the audio caused by the Lightning bug can actually be masked. If you know the bug is there, you can react to it appropriately when it happens. Our team invented a way to effectively conceal the bug with an ingenious firmware modification to Diz. Of course, like our customers, we are waiting with anticipation for Apple fix the root cause. But in the mean time we are offering a Diz trade-in program for any customer who is stuck with the Lightning bug and doesn't want to wait. The concealment firmware is excellent - it makes the artifacts caused by the bug virtually impossible to hear. Users may want to know whether a Diz transmitter, modified with this concealment firmware, will still work OK once Apple fixes the Lightning bug. Well, the answer is yes, it absolutely will."

SKAA is the new wireless HiFi audio standard developed by Eleven Engineering, Inc. SKAA transmitters work with iOS & Android mobile devices, Mac & Windows computers, televisions, and just about any product with a line output or a headphone jack. SKAA is also available as a built-in technology not requiring an external transmitter in purpose-designed partner products, which are featured at SKAA.com. SKAA navigates hostile environments saturated in wireless traffic with best-in-class reliability. SKAA delivers uninterrupted audio with the highest sound quality to all speakers without the latency that is inherent in other wireless solutions.

Recently, Apple unveiled iPhone 7 and iPhone 7 Plus, both without the familiar 3.5 mm headphone jack. Eleven Engineering responded with [SKAA](#) Diz solutions for quality-centric headphone brands.

"This is why we created the SKAA Diz transmitter for Lightning," said Whitehead. "Diz takes full advantage of Lightning's high-quality audio and wirelessly transmits that pristine digital stream to speakers and headphones built to the SKAA standard. Products using Lightning require Apple's MFi approval, but the already-proven Diz transmitter makes this process quick and painless. SKAA cmd is the perfect app to control wireless headphones and speakers which take advantage of Lightning's superior audio quality."

With SKAA, the receivers (speakers / headphones) are in charge of selecting which transmitter to listen to; with SKAA there's no pairing.

SKAA is ridiculously easy to use — all compatible products are ready to play right out of the box. "It's also highly flexible, being compatible with a fantastic breadth of audio sources," concluded Sobota. "Plus, SKAA receivers can effortlessly switch from source to source. And don't forget rock-solid reliability, multiple receivers, great range, and CD-quality sound. SKAA.com is the source for all things SKAA."

For more information, contact Rex Whitehead at 480-650-3979 or email whitehead@eleveneng.com. For more information on Eleven Engineering, visit www.SKAA.com and www.elevenengineering.com.

About Eleven Engineering, Inc.

Edmonton, Alberta, Canada-based Eleven Engineering, Inc. is a market leader in microprocessors SiPs (System in Package) and modules designed for wireless audio for Home Theater, Multi-Room, Portable, and Pro Audio products. Eleven's XInC2 multithreaded processor was designed specifically for digital wireless audio applications but is also well suited for other realtime intensive microprocessor applications.

Eleven's high-performance wireless audio semiconductors, equipped with XInC2 wireless processor cores, are complete solutions for high-quality digital wireless audio transport. WFD™, Eleven's proprietary wireless audio transport protocol, has a narrow footprint in the radio spectrum, delivering both best-in-class coexistence with WiFi / Bluetooth and unparalleled Quality of Service.