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Radio TechCheck



The Weekly NAB Newsletter for Radio Broadcast Engineers

Android App for Smartphone Enables FM, RDS

The popular [Samsung Galaxy S class](#) of Android smart phones is an example of a cell phone device which includes, but does not make use of, an “FM chip” that would allow for FM radio reception. An impressive list of features for these phones does not include FM radio, however the FM chip is there, unutilized. That is, until recently, when the Communications Research Center Canada ([CRC](#), Ottawa, On) announced the release of the FM TwoO (“FM two-oh”) radio and RDS application for Android. CRC believes that this is the first independent FM-RDS application for Android mobile phones available through the Android Market. According to CRC, the FM TwoO app currently runs on the Samsung Galaxy S mobile phone and similar models.

CRC determined that Samsung Galaxy S devices use the Silicon Lab Si4709FM-RDS receiver chipset and was able to figure out how to access the FM radio chipset on that specific device. FM TwoO uses the CRC FM-RDS Android Library to access the embedded SiLabs FM receiver. This library is available free of charge to third party developers, and is built from two components. The first one is an application program interface (API) that supports the driver of the SiLabs Si4709 FM receiver (ultimately, the CRC hopes to make this technology available across other mobile phone platforms). The API is used to control the receiver and to start/stop the playback of audio. CRC believes that, unfortunately, the SiLabs chip set is not very common on Android devices and to their knowledge, only the Samsung Galaxy S has this chipset.

The second component of the library is the API that provides FM-RDS decoding functionality. At the moment, the library can decode the PI code, the PS name and the RadioText fields. The RDS data is available as soon as the FM radio receiver is launched. To support devices that don't have an embedded FM receiver, the API features a “testing mode” which decodes raw RDS data received through Wi-Fi. The corresponding RDS fields will be displayed as soon as they become available.

FM TwoO can be tuned to any station manually or by seeking through usual FM frequency bands. RDS data is displayed on the main screen of the application as soon as the radio is in playing mode, as shown in the image above. Currently, FM TwoO decodes and presents the basic data fields: program identification (PI), program service (PS) and Radio Text (RT). In addition to that, FM TwoO supports the more advanced RT+ Open Data Applications (ODA), where available. RT+ can carry additional data services associated (or not) with the audio program.

Note that all of the metadata shown on the phone display in the image above was delivered to the phone over RDS. In particular, the URL and phone number shown in blue, delivered over RDS, are transformed into active links by the FM TwoO application, such that when the listener touches them, the smart phone will bring up a new display either of the Web page or the phone dialing screen (depending upon which link was touched). A video demonstration of the FM TwoO application is available online [here](#).

For more information, please visit the corresponding section on the CRC project [website](#). The CRC FM-RDS Android Library may be accessed [directly](#).



SCAN THIS QR CODE WITH YOUR ANDROID PHONE TO INSTALL THE FM TwoO APPLICATION

CRC will be demonstrating FM TwoO at the upcoming [2011 NAB Show](#) (April 9-14, 2011, Las Vegas, Nev.) as part of the International Research Park exhibit area, in booth N1938. In addition, Francois Lefebvre, project leader with CRC, will be making a presentation to the National Radio Systems Committee (NRSC) RBDS Subcommittee on Saturday, April 9, 2011 at the Subcommittee meeting being held in conjunction with the NAB Show. For additional information on the NRSC meeting schedule, visit the NAB Show [Conference Web page](#).



A conference session on the topic of radio in cell phones is being held at the NAB Show as part of the Broadcast Management Conference. "Radio-ready Cell Phones: Benefitting Consumers and Broadcasters," starts at 1 p.m. in room N235 of the Las Vegas Convention Center. This panel session, moderated by NAB Senior Director, Advanced Engineering David Layer, is scheduled to feature panelists Jeff Smulyan, chairman and CEO, Emmis Communications Corp., Lane Bruns, vice president of portable products, iBiquity Digital Corporation, and Matt Straeb, executive vice president, Global Security Systems. For additional conference information visit the NAB Show [Web page](#).

Attending the NAB Broadcast Engineering Conference? Don't Miss Renowned Author, Technologist Steven Johnson at the Technology Luncheon

Three-time national bestselling author, celebrated lecturer and technologist Steven Berlin Johnson will speak at the NAB Show Technology Luncheon on Wednesday, April 13 in the Las Vegas Hilton. Johnson's address will focus on the origins of ideas that lead to groundbreaking innovations, a key component of his latest book, *Where Good Ideas Come From: The Natural History of Innovation*. (View related media [here](#).)



Named one of *Newsweek's* "Fifty People Who Matter Most on the Internet," Johnson is a social critic and technologist with writings that have influenced the way political campaigns use the Internet, explored cutting-edge ideas in urban planning, and examined the battle against 21st-century terrorism. Much of Johnson's work studies mapping the future, a concept that predicts and explains the real-world impact of emerging trends and cutting-edge developments in science,

technology and media.

Johnson is currently contributing editor for *Wired* magazine and monthly columnist for *Discover* magazine. He is the recent recipient of the Newhouse School's Mirror Awards for his *TIME* magazine cover article titled "How Twitter Will Change the Way We Live," and has previously written for *The New York Times*, *The Wall Street Journal* and *The Nation*. An engaging and informative lecturer, Johnson was the 2009 Hearst New Media Professional-in-Residence at Columbia University's Journalism School, where he lectured widely on technological, scientific and cultural issues.

Johnson has co-created three influential websites: the pioneering online magazine *FEED*, the Webby-Award-winning community site, Plastic.com, and most recently the hyperlocal media site outside.in. He has appeared on many television programs, including "The Charlie Rose Show," "The Daily Show with Jon Stewart," and "The NewsHour" with Jim Lehrer. You can also check his recent presentations out on [youtube](#).

The NAB Technology Luncheon will also feature the presentation of the [NAB Engineering Achievement Awards](#) to Thomas B. Keller, T. Keller Corporation and L. Robert du Treil, du Treil, Lundin and Rackley and the [Technology Innovation Award](#) honoring organizations that bring advanced technology exhibits and demonstrations of significant merit to the NAB Show. The NAB [Best Paper Award](#), established in 2010, will also be presented

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IEEE Broadcast Technology Society Issues Call for Papers

A Call for Papers has been issued for the 2011 IEEE Broadcast Symposium, to be held October 19-21, 2011, in Alexandria, Va. The Symposium Committee seeks timely and relevant technical papers relating to all aspects of broadcast technology, in particular on the following topics:



- Digital radio and television systems: terrestrial, cable, satellite, Internet, wireless
- Mobile DTV systems (all aspects, both transmission and reception)
- Technical issues associated with the termination of analog television broadcasting
- Transmission, propagation, reception, re-distribution of broadcast signals
- AM, FM, and TV transmitter and antenna systems
- Tests and measurements
- Cable and satellite interconnection with terrestrial broadcasters
- Transport stream issues – ancillary services
- Unlicensed device operation in TV white spaces
- Advanced technologies and systems for emerging broadcasting applications
- DTV and IBOC reception issues and new technologies
- ATSC and other broadcast standards developments
- Broadcast spectrum issues – re-packing, sharing

The submission deadline for abstracts is May 1, 2011. There is additional information on the [Symposium](#) on the [IEEE Broadcast Technology Society](#) website.