

**EX25.22.1**

# FM Radio on Smartphones

May 16, 2017 – City of Toronto Executive Council  
Meeting

Presenter: Kirk Nesbitt

# North American Broadcasters Association (NABA) FM Chip Working Group

- Chair – David Layer, NAB
- Looking to advance the cause of activating FM chips in smartphones
- Doing so in a way that brings value to consumers and to the broadcasting industry
- [www.nabanet.com](http://www.nabanet.com)



# NABA FM chip working group

- Who are we?
  - Canadian broadcasting: Bell Media, CBC/Radio Canada, Corus, Canadian Association of Broadcasters (CAB)
  - Mexican broadcasting: CIRT (“Mexico CAB or NAB”)
  - US broadcasting: Emmis, NAB, NPR, Xperi (HD Radio)
  - Data broadcast, etc.: HERE, Nautel

# Canadian Association of Broadcasters

- The Canadian Association of Broadcasters (CAB) is the national voice of Canada's private broadcasters, representing the vast majority of Canadian programming services, including private radio and television stations, networks, specialty, pay and pay-per-view services.
- The goal of the CAB is to represent and advance the interests of Canada's private broadcasters in the social, cultural and economic fabric of the country.

# How does FM radio on your smartphone work?

- A lot of smartphones have an FM chip already installed. On an FM-chip enabled smartphone, you need:
  - ✓ Headset cord for antenna
  - ✓ An FM radio app
- FM radio app example: NextRadio
  - NextRadio is an Android app that uses the FM chip
- Then you can listen to local FM radio on your smartphone



# Benefits of FM radio in smartphones

- Instant access to local media
- Takes advantage of an increasingly popular resource, the smartphone that so many of us have with us at all times
- Can help offload traffic from mobile broadband network during times of emergency
- Using FM radios in smartphones greatly extends battery life (3-5x) compared to streaming over mobile broadband or WiFi
  - Important during serious or protracted emergencies

# Benefits of FM radio in smartphones

- From 2015 NAB Broadcast Engineering Conference paper “*FM Radio in Smartphones: A Look Under the Hood*”

USAGE	AVG. POWER CONSUMPTION	EXPECTED BATTERY LIFE
FM Radio	0.21 Watts	36.16 hrs
<i>Spotify</i> IP Streaming	1.32 Watts	6.04 hrs
<i>Pandora</i> IP Streaming	1.01 Watts	7.90 hrs
<i>TuneIn Radio</i> IP Streaming	1.27 Watts	6.26 hrs

TABLE 2 - BATTERY LIFE COMPARISON OF FM LISTENING AND STREAMING RADIO LISTENING ON THE SAME SMARTPHONE [1]

[1]  
Sprint/NextRadio  
study, July 2013

## Benefits of FM radio in smartphones

- Radio is the most reliable means of reaching the public during emergencies when power, Internet, television and telecommunication services may be unavailable.
- Radio plays a critical role to inform public; “What do I do next?” “Where can I get help?” “How can I offer help?”
- Radio is an essential link between local authorities and the communities they serve.



## Canadian Context

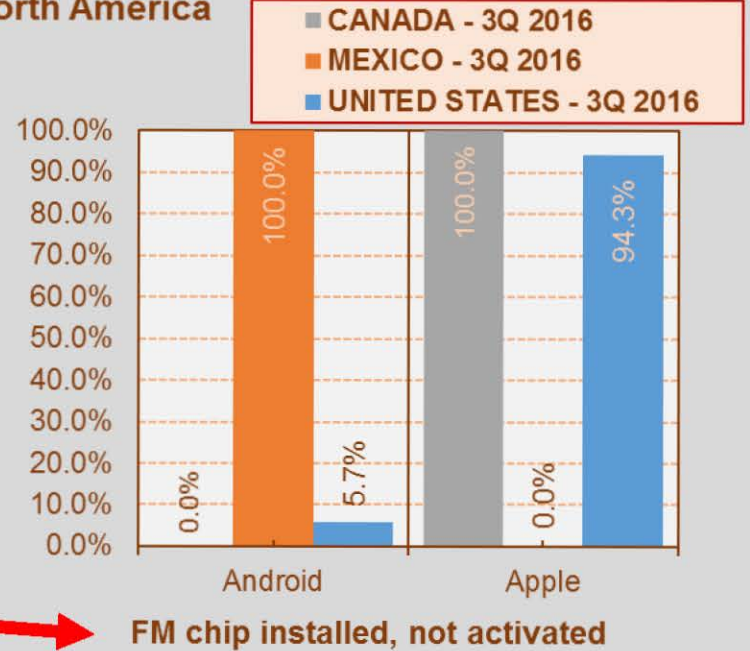
- NABA, CAB and CBC met with CRTC staff in October 2016.
  - To discuss the benefits related to FM receivers in smartphones.
  - To present the NABA FM chip in smartphone data.
  - To explain that encouraging market place adoption is preferred over regulation.
- Broadcasters have been relaying Emergency Alert messages as part of the NPAS initiative since April 2015.
- In March 2017, the CRTC mandated mobile wireless operators to issue Emergency Alert messages beginning April 2018.
- Radio delivers in-depth information after an Alert is issued.

# FM chips in smartphones – North America, 3Q 2016

FM Chips in Smartphones - North America



FM Chips in Smartphones - North America



# International Telecommunication Union - NABA contribution on FM chips

- NABA contribution to ITU on FM chips (Geneva)
  - To encourage activation of radio receivers in smart phones
- Contribution made October 2016, approval granted at meetings in March 2017



## Radiocommunication Study Groups



### INTERNATIONAL TELECOMMUNICATION UNION

Received: XX October 2016

Reference: Report ITU-R BT.2299

**Document 6A/NABAr1**  
**XX October 2016**  
**English only**

### North American Broadcasters Association

### PROPOSED NEW OPINION OF STUDY GROUP 6

### The activation of radio receivers in smart phones

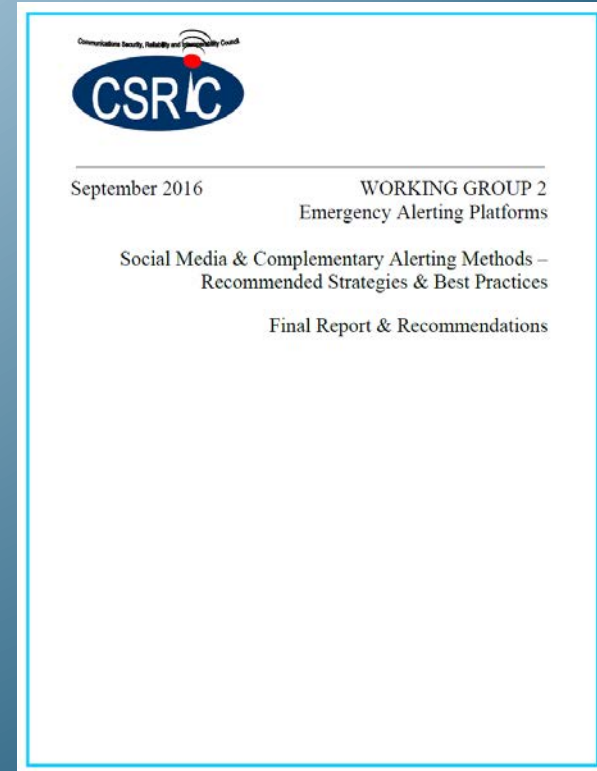
The North American Broadcasters Association<sup>1</sup>, (NABA, [www.nabanet.com](http://www.nabanet.com)) is an association of broadcasters within ITU-R Region 2 countries Canada, Mexico and the United States. The NABA Technical Committee is its standing technical body.

NABA is a Sector Member of ITU-R and a long-time participant in ITU-R Study Groups, Working Parties, Task Groups, Rapporteur Groups, etc. NABA numbers among its members Chairmen, Vice-Chairmen and members of the above groups. NABA also participates widely in the ITU work on radio, television and multimedia services.

NABA notes that that Report ITU-R BT.2299, entitled “Broadcasting for public warning, disaster mitigation and relief”, provides a compilation of supporting evidence that terrestrial broadcasting

# CSRIC report

- Recommendation from Working Group 2 to CSRIC:
  - It is recommended that the **FCC encourage the ongoing voluntary efforts** between device manufacturers and the wireless industry toward enabling FM radio in smartphones to the extent commercially viable for all parties
- This recommendation and the Working Group 2 report were adopted by CSRIC on September 14<sup>th</sup>, 2016



# Regulatory

- Please note that the NABA Radio Committee and FM Chip Working Group (and its members) have advocated for a market-based approach
  - NOT government mandates

For more info, please contact NABA ([contact@nabanet.com](mailto:contact@nabanet.com))

# Supporting Materials and Examples

- US Safety Example; FCC/CSRIC
- Networks can fail in emergencies
- Next Radio
- NABA FM Chip in Smartphone Data
- FCC Chair Ajit Pai comments

# U.S. safety example – Federal Communications Commission (FCC)

- The **Communications Security, Reliability and Interoperability Council (CSRIC)** makes recommendations to the FCC



# U.S. safety example – Federal Communications Commission (FCC)

- CSRIC studies ways to make communications systems secure, reliable, interoperable

The screenshot shows the FCC website's header with the logo and navigation options like 'Browse by CATEGORY' and 'Browse by BUREAUS & OFFICES'. A search bar is located in the top right. The main navigation bar includes links for 'About the FCC', 'Proceedings & Actions', 'Licensing & Databases', 'Reports & Research', and 'News & Events'. The breadcrumb trail reads: 'Home / About the FCC / Advisory Committees / Communications Security, Reliability and Interoperability Council (CSRIC) /'. The main heading is 'Communications Security, Reliability and Interoperability Council V'. Below this, there is a sub-heading 'Communications Security, Reliability and Interoperability Council' and a list of CSRIC iterations, with 'CSRIC V' highlighted. To the right, the mission statement is provided: 'The Communications Security, Reliability and Interoperability Council's (CSRIC) mission is to provide recommendations to the FCC to ensure, among other things, optimal security and reliability of communications systems, including telecommunications, media, and public safety.' Below the mission statement, there is a 'Charter' section with a list of links: 'Term: March 19, 2015 - March 18, 2017' and 'Charter'.

Federal Communications Commission

Browse by CATEGORY

Browse by BUREAUS & OFFICES

Search

About the FCC Proceedings & Actions Licensing & Databases Reports & Research News & Events

Home / About the FCC / Advisory Committees / Communications Security, Reliability and Interoperability Council (CSRIC) /

## Communications Security, Reliability and Interoperability Council V

**Communications Security, Reliability and Interoperability Council**

- CSRIC V
- CSRIC IV
- CSRIC III

The Communications Security, Reliability and Interoperability Council's (CSRIC) mission is to provide recommendations to the FCC to ensure, among other things, optimal security and reliability of communications systems, including telecommunications, media, and public safety.

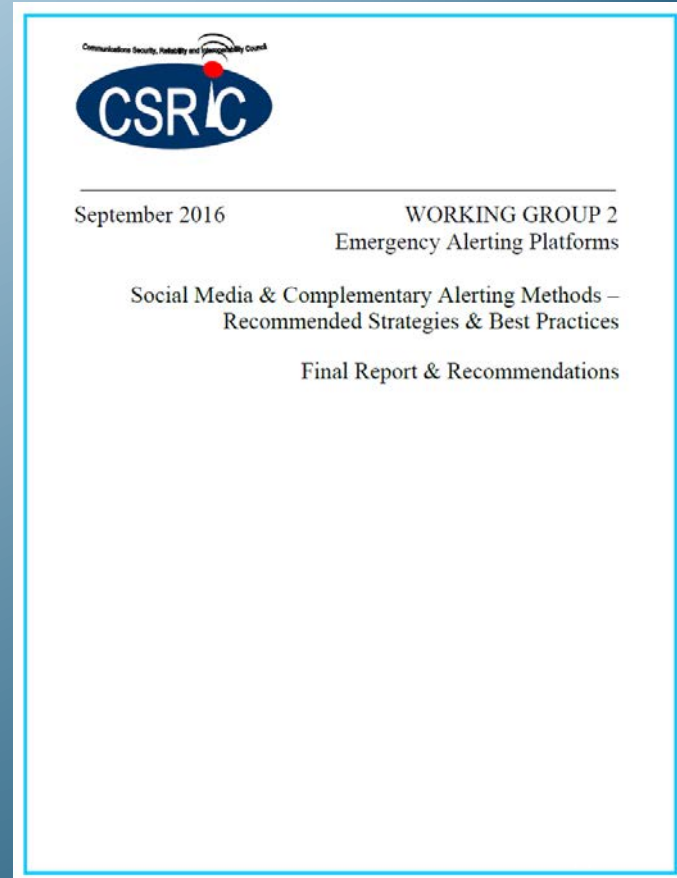
**Charter**

- Term: March 19, 2015 - March 18, 2017
- Charter



# CSRIC report

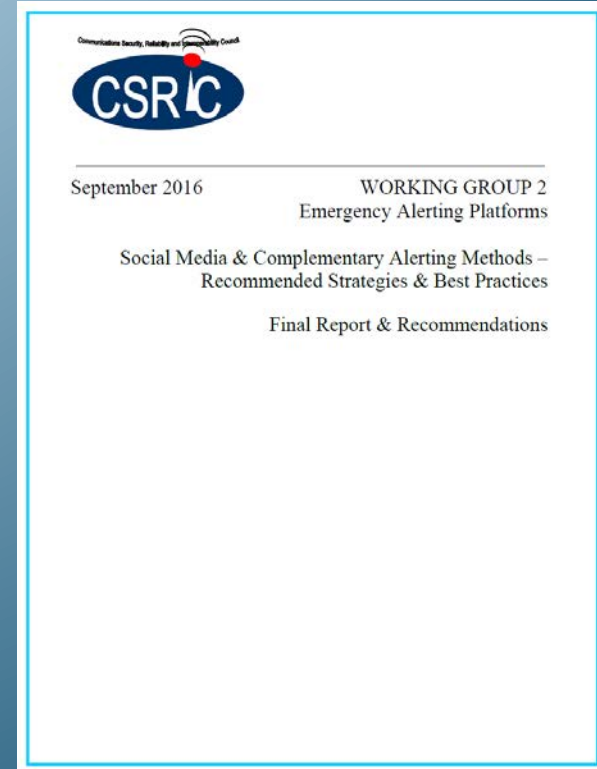
- Working Group 2 – Emergency Alerting Platforms
- Focusing on Wireless Emergency Alerts
- How can various platforms be leveraged to alert the public?
- FM chip in smartphones can keep the public informed and connected during times of emergency



# CSRIC report

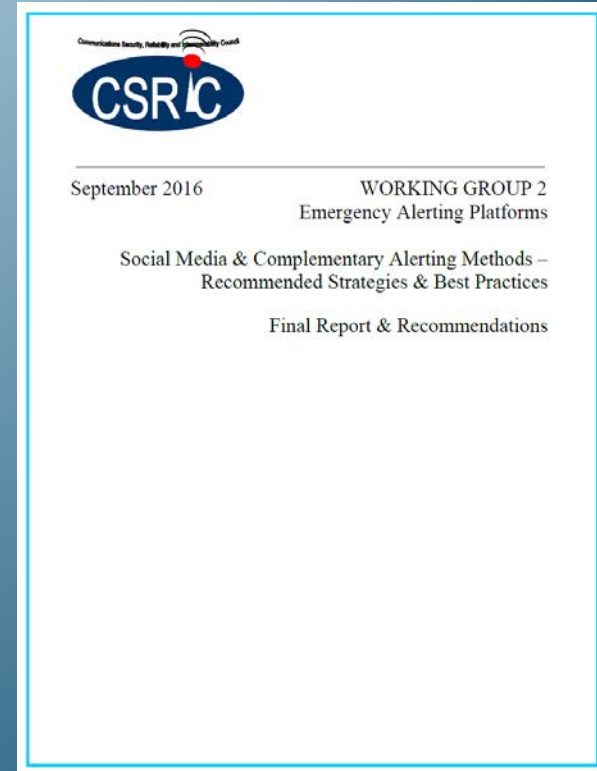
- Report released September 2016.

[http://www.nab.org/documents/newsRoom/pdfs/CSRIC\\_Social\\_Media\\_Alerting\\_Report.pdf](http://www.nab.org/documents/newsRoom/pdfs/CSRIC_Social_Media_Alerting_Report.pdf)



# CSRIC report

- Recommendation from Working Group 2 to CSRIC:
  - It is recommended that the **FCC encourage the ongoing voluntary efforts** between device manufacturers and the wireless industry toward enabling FM radio in smartphones to the extent commercially viable for all parties
- This recommendation and the Working Group 2 report were adopted by CSRIC on September 14<sup>th</sup>, 2016



# Networks can fail in emergencies

- Cellular network failures happen
  - Loss of power, damage as a result of natural disasters
  - Congestion can be a factor

**DISASTER RECOVERY JOURNAL** 4 OUT OF 5 **Isn't it time to take a closer look?**

HOME JOURNAL EVENTS WEBINARS RESOURCES ABOUT US

Subscribe Blogs White Papers DRJ En Espanol Live Learning Center

SPRING WORLD Conference & Exhibition Attend The #1 BCOR

You are here: [Home](#) > [Journal](#) > [Online Exclusives](#) > [When Communications Infrastructure Fails During a Disaster](#)

## When Communications Infrastructure Fails During a Disaster

Written by **Christina Richards**  
Thursday, 12 November 2015 06:00

As seen by this summer's severe weather in Texas and across the southwestern United States, one of the most immediate and significant impacts of flooding and natural disasters is the sudden and wide-scale breakdown or interruption of communications infrastructure. When public communication networks fail, the impact can be widely felt and has the ability to wipe out access to standard mobile or landline telecommunications, in addition to Internet and even satellite-based emergency communication devices.

Whether these systems are completely or just partially knocked offline, communications systems during a natural disaster can be the difference between life and death for those affected. Locating those who may be trapped or injured becomes nearly impossible for emergency responders, and rescue efforts are further complicated by the inability to coordinate via standard methods of communication.

**How Communications Infrastructure Fails During a Disaster**



**BloombergBusiness** News Markets Insights Video

Technology

## Why Cell Phone Networks Fail in Emergencies

By Brad Stone | April 16, 2013

SEND TO KINDLE

Photograph by Alex Trautwig/Getty Images

A runner uses his phone following the explosion of two bombs during the 117th Boston Marathon

Toward the bottom of the list of disturbing aspects about Monday's bombing at the Boston Marathon was this: Cellular networks in the area almost immediately slowed

# Networks can fail in emergencies

- Craig Fugate (former administrator, FEMA): [“...smartphone became a brick...”](#)



Craig Fugate Discusses Value of FM Radio on Smartphones

## FM in smartphone use during emergencies

- Data from 2015 demonstrates that FM in smartphone listenership increases during an emergency

LOCATION	DATE	EVENT	LISTENING SESSION INCREASE
Brainerd, MN	July 12, 2015	Straight-line weather disaster	615%
Rochelle, IL	April 8, 2015	Tornadoes	151%
Oklahoma City, OK	May 6, 2015	Tornadoes and flash floods	254%



## NextRadio Canada

- Google PlayStore launch of the app in July 2016
- More than 1 million FM-enabled smartphones in Canada
- Canadian broadcasters starting to support services
- Viral growth trends are positive indicators:
  - 12,000 visitors to the **freeradioonmyphone.ca** website – consumers asking for FM-enabled smartphones in Canada
  - A list of compatible phones will continue to be updated on the <http://nextradioapp.ca/> website

# Freeradioonmyphone.ca

FREE RADIO *on my* PHONE CA

277 TAKE ACTION

English

★ ★ ★ ★ ★

# FREE RADIO

*on my phone*

TAKE ACTION!

★ ★ ★ ★ ★

WHERE IS MY FM RADIO?

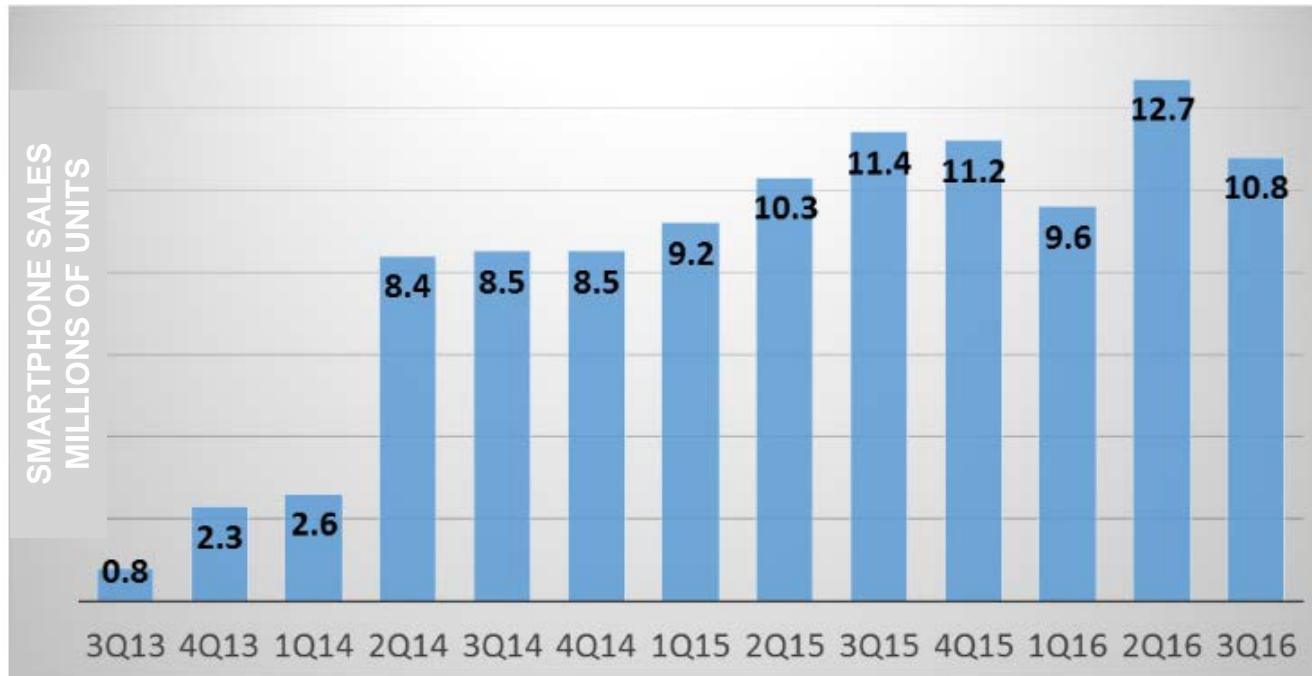
*For* BROADCASTERS

CAMPAIGN UPDATE



# NextRadio

- Growth in smartphones with activated FM chip in **United States**



\* FM radio activated by at least one major U.S. carrier using these phones.

# NextRadio Case Study

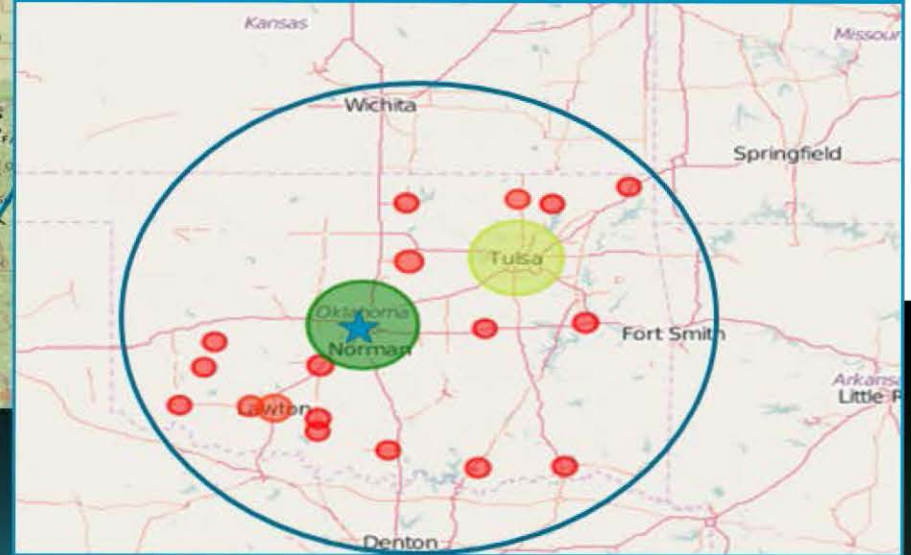
- NextRadio data from the Oklahoma City Earthquake, September 2016 found an increase in FM Smartphone listenership...

## Oklahoma City – Earthquake Area Saturday, September 3, 2016



# Oklahoma City Earthquake Findings

## Oklahoma FM Radio Usage, September 3, 2016



### FM Smartphone Listening Usage

- 340% increase in listeners
- 210% increase in total listening minutes
- 180% increase in number of station tune-ins

## FM chip in smartphone data

- Working with NAB, obtain sales data on top-selling smartphones in Canada, U.S., and Mexico
  - Establish status of FM chip in these top-selling phones
  - Necessary for dialog with broadcasters and cellular carriers
- FM chip data for North America:  
*[www.nabanet.com/nabaweb/committees/radio-fm-chip-in-smartphone-data.asp](http://www.nabanet.com/nabaweb/committees/radio-fm-chip-in-smartphone-data.asp)*

# FM Chip in Smartphone Data

NABA is tracking the penetration of FM chips in smartphones for the North American market. Working with the National Association of Broadcasters (NAB), and using sales data compiled by research and consulting firm ABI Research, this data shows the extent of FM chip penetration in the top-selling smartphones for Canada, Mexico, and the U.S. on a quarterly basis.

As demonstrated by this data, most of the top-selling smartphones in all three countries include an FM chip which means that these devices can receive free, over-the-air FM radio signals, depending upon whether the FM chip is activated in the device. For a variety of reasons, these FM chip are often not activated, most notably in all of Apple's iPhone products (which are top sellers). Broadcasters are working with smartphone device manufacturers and cellular carriers to increase the number of models that have the FM chip activated so that more

<http://www.nabnet.com/nabaweb/committees/radio-fm-chip-in-smartphone-data.asp>

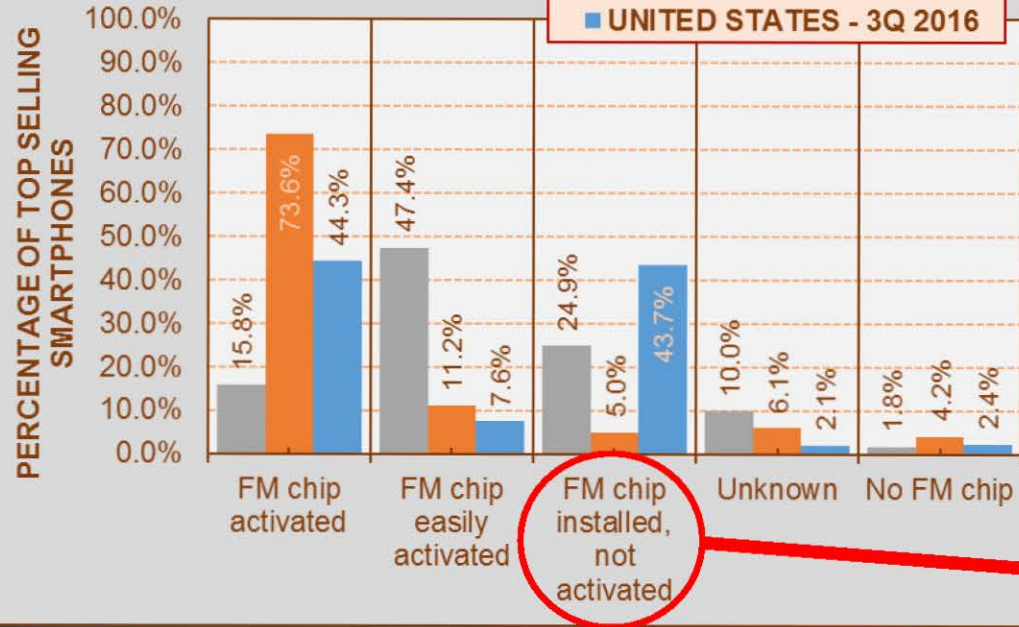
analyzed, often by doing a "tear-down" of the phone, to establish the level of FM chip activation based upon these five categories:

CATEGORY	DEFINITION
<b>FM chip activated</b>	FM chip is activated in these smartphones and available for use by consumers. Headset cord use is required since headset cord acts as FM antenna (audio is typically available either from smartphone speakers or headset).
<b>FM chip easily activated</b>	FM chip is activated on the same model in another country so no hardware changes would likely be required to activate in this country.
<b>FM chip installed, not activated</b>	FM chip is included in these smartphones but either a hardware or software modification would be required to activate the FM chip.
<b>Unknown</b>	Insufficient data on smartphone to be able to establish whether FM chip is installed.
<b>No FM chip</b>	FM chip not included in smartphone

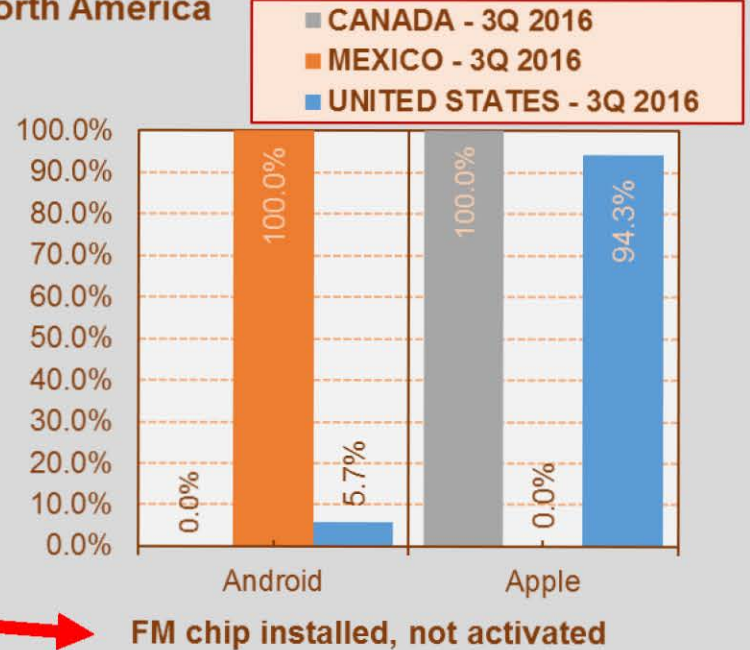


# FM chips in smartphones – North America, 3Q 2016

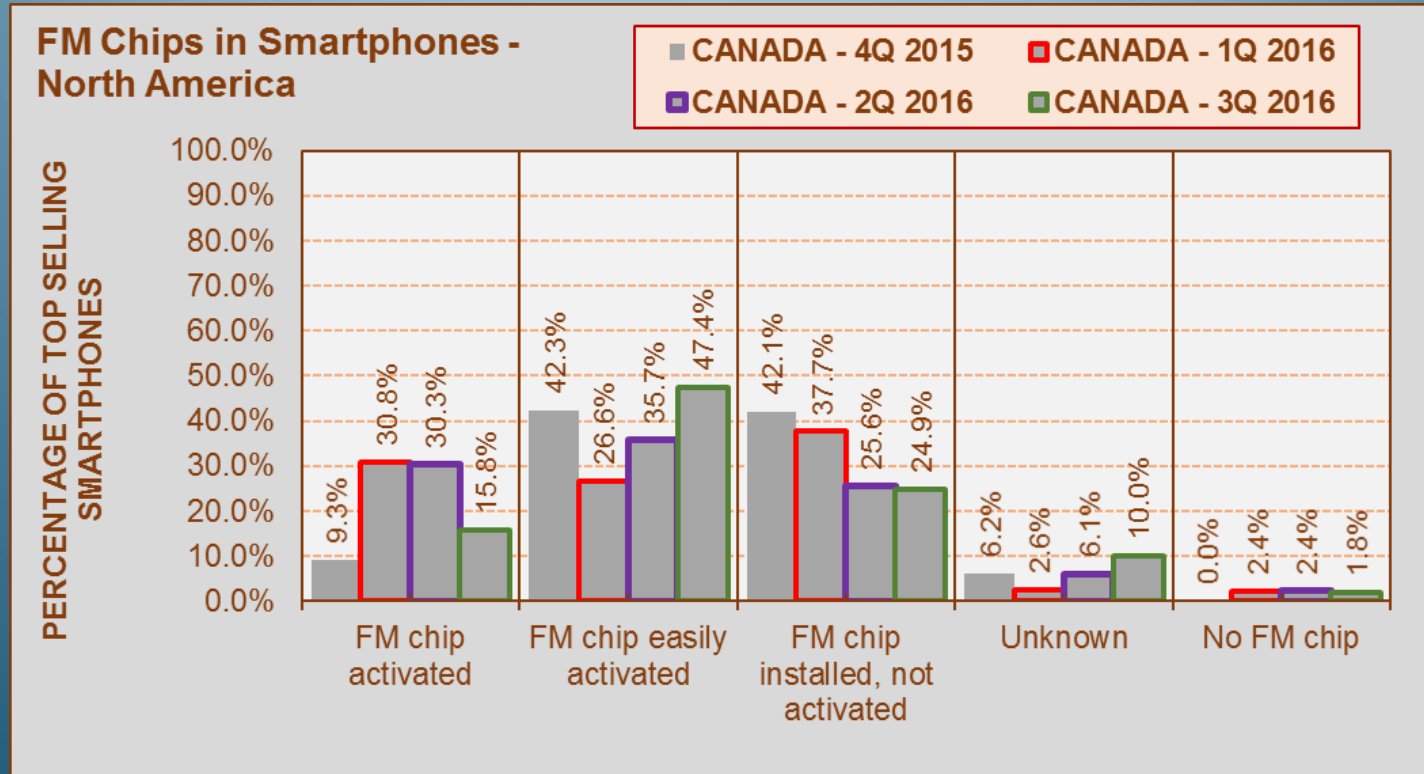
FM Chips in Smartphones - North America



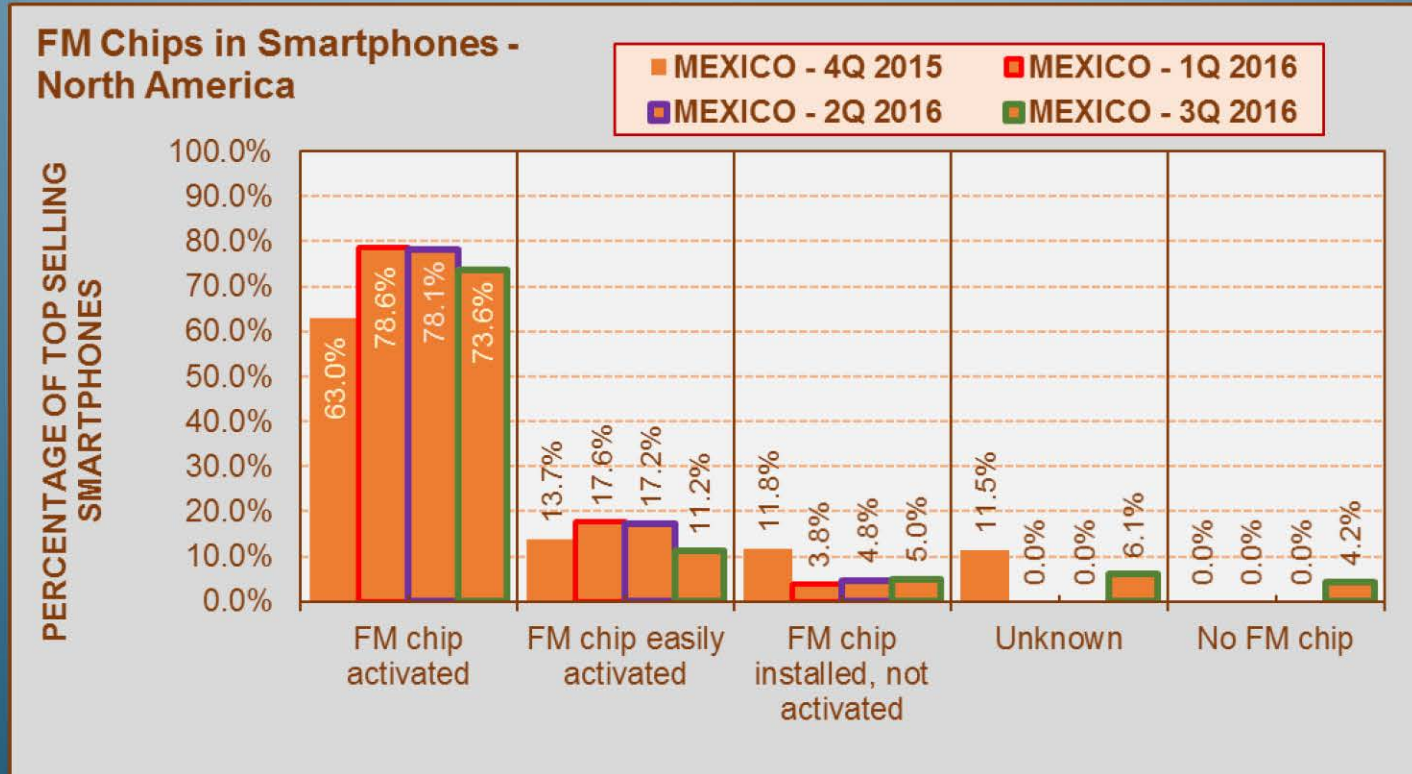
FM Chips in Smartphones - North America



# FM chips in smartphones – North America, 3Q 2016

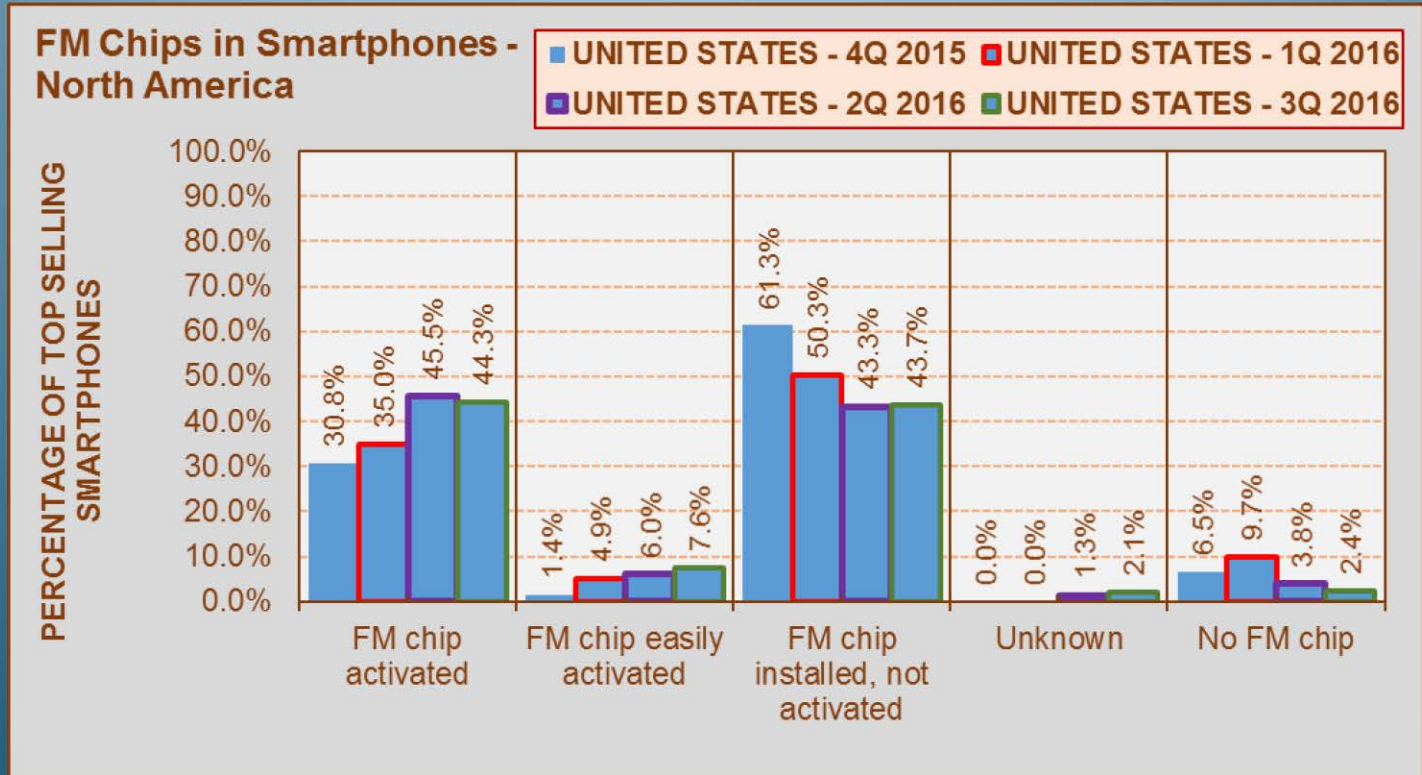


# FM chips in smartphones – North America, 3Q 2016





# FM chips in smartphones – North America, 3Q 2016



## FCC Chairman Ajit Pai on FM chips in smartphones

*“It seems odd that every day we hear about a new smartphone app that lets you do something innovative, yet these modern-day mobile miracles don’t enable a key function offered by a 1982 Sony Walkman. You could make a case for activating chips on public safety grounds alone.”*



## FCC Chairman Ajit Pai on FM chips in smartphones

*“The FCC has an expert advisory panel on public safety issues that has also advocated enabling FM radio chips on smartphones. It pointed out that, ‘[h]aving access to terrestrial FM radio broadcasts, as opposed to streaming audio services, may enable smartphone users to receive broadcast-based EAS alerts and other vital information in emergency situations—particularly when the wireless network is down or overloaded.’”*

*- FCC Chairman Ajit Pai, February 16<sup>th</sup>, 2017, NABA Future of Radio & Audio Symposium hosted by the National Association of Broadcasters (NAB), Washington, D.C.*