

November 9, 2017

**NOTICE OF EX PARTE -- VIA ECFS**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Re: *Amendment to Parts 1 and 22 of the Commission's Rules with Regard to the Cellular Service, Including Changes in Licensing of Unserved Areas*, WT Docket No. 12-40

Dear Ms. Dortch:

On November 7, 2017, Gogo Inc. ("Gogo") representatives William Gordon, Alex Uribes, Clay Turner, and Terry Doyle, as well as Tom Peters and the undersigned of Hogan Lovells US LLP, counsel for Gogo, met with Tom Derenge and Moslem Sawez (by telephone) of the Mobility Division of the Wireless Telecommunications Bureau regarding the above-referenced proceeding. Representatives from AT&T (Celia Nogalez, Robert Vitanza, and David Pollard) and Verizon (Andy Lachance and Scott Townley) also attended the meeting.

During the meeting, Gogo discussed the attached presentation regarding the potential for new interference to Gogo's Air-to-Ground network from the roll-out of LTE by the adjacent band cellular operations in the 850 MHz band. The parties discussed mitigation techniques and other approaches to avoid potential interference, as encouraged by the Commission in the March 2017 Report & Order<sup>1</sup> in this proceeding ("[w]e encourage Gogo and Cellular carriers to continue to work together not only to address interference as it occurs, but also to be proactive in avoiding increased interference to Gogo's ATG operations from Cellular PSD operations under the revised radiated power rules we are adopting...").<sup>2</sup>

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<sup>1</sup> *Amendment of Parts 1 and 22 of the Commission's Rules with Regard to the Cellular Service, Including Changes in Licensing of Unserved Area*, Second Report and Order, Report and Order, and Second Further Notice of Proposed Rulemaking, 32 FCC Rcd 2518 (2017).

<sup>2</sup> *Id.* ¶ 105.

November 9, 2017

Pursuant to Section 1.1206(b)(2) of the Commission's rules, an electronic copy of this letter is being filed in the above-referenced docket. Please contact me if you have any questions regarding this submission.

Respectfully submitted,

/s/

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Tom Peters  
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Attachment

cc (via email): Tom Derenge,  
Moslem Sawez

November 7, 2017

# ATG Uplink Interference

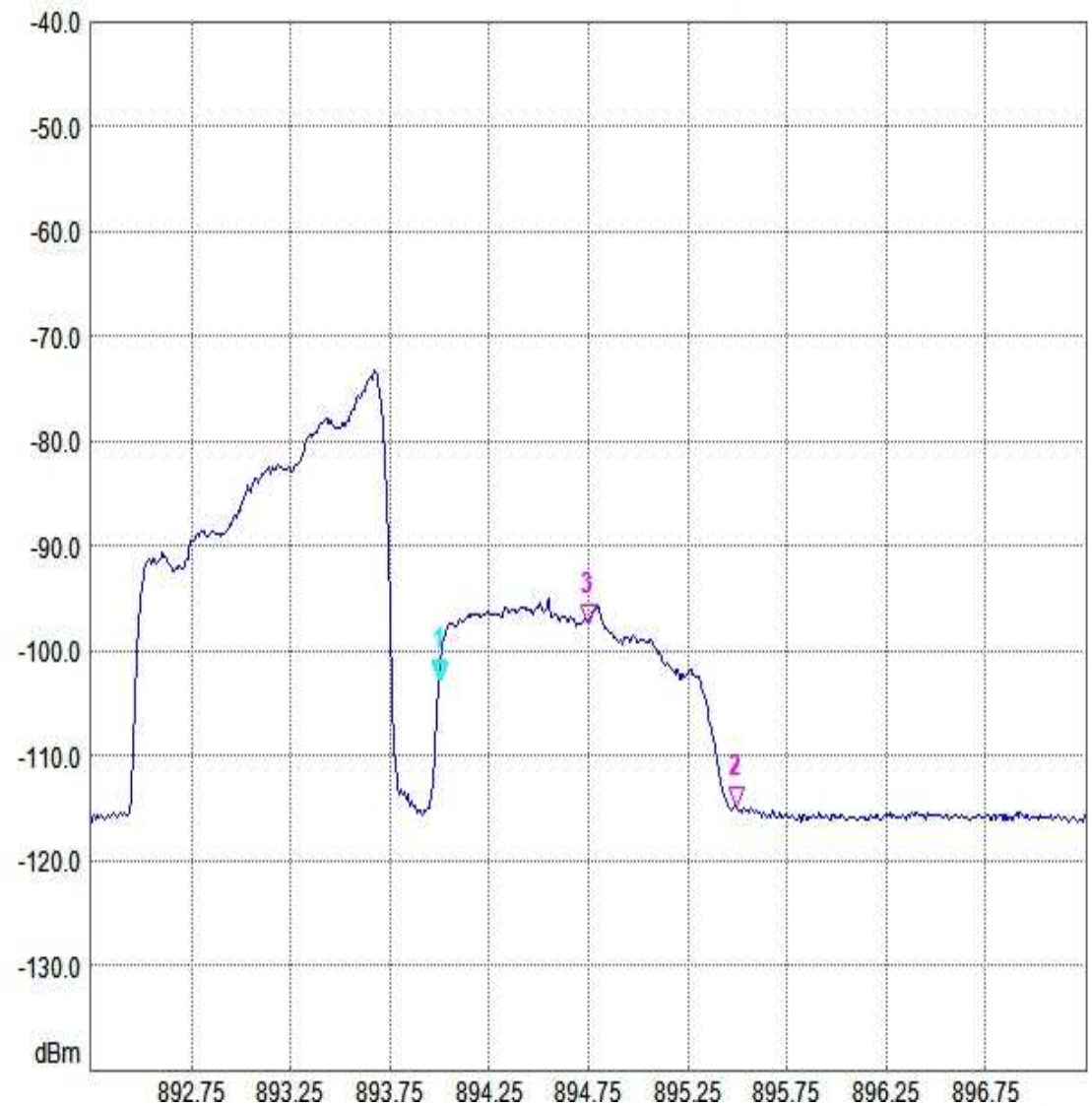
894-895.5MHz

GOGOAIR.COM



# Typical Interference

- Is usually wideband noise
- Usually rolls off with increase in frequency
- This example was caused by a site 11 miles away! (Medford, MA)
- Almost all cases of uplink interference are caused by cellular (850 MHz band) transmitters
- Almost always mitigated by adding filters to the transmitters – couple of cases just needed resetting the software radios.
- Wide band technologies are more problematic than narrowband ones in terms of OOB.
- We are seeing interference being created by carriers upgrading to newer technologies including LTE.
- Tower Top Radios generally have poorer filtering than terrestrial base stations.





## Current Mitigation Process

Gogo monitors for interference and upon detection:

- 1) Gogo investigates interference – if external, then
- 2) Gogo reaches out to carriers to find local market contacts
- 3) On/Off tests are performed
- 4) If tests confirm source of noise, then filters are ordered and installed on the transmitters.



## Mitigation Process in Practice

- In practice, the 1<sup>st</sup> three steps happen quickly
- But step 4 - the ordering and installation of filters - is proving to be very time consuming
  - This ranges from months to a year or more.



## Sites Interfered by Technology Upgrades

Site ID	Name	Intf Type	Mitigation
FL01R	Miami	LTE	Reset Base Stations (1 day on site)
GA01R	Atlanta	LTE, UMTS	Awaiting Filters (since May 2017)
ID02R	Salmon	UMTS,?	Filters (6 months) – had to be done twice – currently being investigated again.
KY04R	Sturgis	LTE	Filters (15 months)
MT02R	Big Horn	?	Filters (6 months)
NM07R	Angel Fire	UMTS	Awaiting Filters (since Feb 2017), Moved Channel - 2nd interferor from 2nd carrier
OR02R	Glass Butte	LTE	Awaiting Filters (since Feb 2017)
WY01R	Cody	LTE	Filters (9 months)
WY02R	Casper	LTE?	Awaiting Filters (since Oct 2017)



## ATG Interference Concerns

- With the roll out to LTE in the 850 band, we are seeing new interference being created where there was none before.
- This combined with increases in transmitted power and extremely slow mitigation via filtering is very concerning.
- We are asking for the mitigation process to be changed so that when new interference is created, the offending source is turned off until it is properly filtered.
- Additionally, we would like to be notified in advance when a new LTE 850 MHz source is being turned up within 2 miles of us.