

Is there Part 15 Congestion?

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28 June 2000

FCC TAC

Overview

- Purpose of Study
- Approach for first phase
- Framing the problem
- Results of data gathering
- Inside/Outside Sharing Scenarios

Purpose of Study

- Clarification of decision to start the study
- There is a growing sense that there is increasing interference/congestion in the Part 15 bands.
- Complaints have already come into the FCC from the general public
- Determine if this is indeed true and try to see if there are some possible solutions that could be recommended to the FCC by the TAC.

Approach for the first phase

- Size the problem
- Gather facts
- Bring TAC members up to speed on problem
- Determine where to take the study next

Framing the Problem

- Limit to Part 15.247 and 15.249
- Look at outside and inside use
- Is the current FCC approach still feasible?
 - Labeling

Bands

- 902-928 MHz
- 2400-2483.5 MHz
- 5.15-5.25 GHz, 5.25-5.35 GHz, 5.725-5.875 GHz (U-NII)
- 5.725-5.85 GHz (SS)

Cast of Characters

- Various Government Use
- Part 18 (ISM)
- Location Services (900 MHz)
- Amateur Radio Service (ARS)
- Part 15 (various devices)

Press picks up on the problem

NYT Story

- ‘Preparing for a Collision of Wireless Services’
April 27, 2000

“If wireless networks proliferate as fast as many researchers predict, is it possible for the airwaves to become overloaded? Cell phones and some handheld organizers transmit and receive scores of messages a day. With laptop computers and other devices added to the mix, will there eventually be one big wireless traffic jam?”

ZDNET Story

- Appeared on 6/15
- Generated companion thread on Slashdot
- Demonstrates the 'inside' problem
- Tested 802.11b LAN, Cordless Phone, Video Redistribution Device
- Data devices stopped working

ARS Scenario(1)

- ARS is 'Amateur Radio Service', FCC Part 97
- ARS has allocations in all of the Part 15 bands
- ARS is a licensed service and has higher priority access than Part 15
- In some cases, ARS has primary access to parts of the bands

ARS Scenario (2)

- ARS can use power levels up to 1.5 KW for most emission modes
- ARS can use up to 100 W for spread spectrum (SS) with automatic power control
- Very little use of SS today. Rules were changed last October to allow liberal use of SS.
- Most used modes are FM repeaters and TV

ARS Scenario (3)

- Repeater in SF Bay area operating since '96 has seen raising noise floor over the last several years
- This year the level has finally effected the base station operation
- Problem mostly caused by outside high EIRP Part 15 operations
- Solved for the time being by moving to low part of band

RF Lighting Scenario

- Part 18 ISM devices
- Operates in 2400-2500 MHz ISM Band
- Centered on 2450 MHz
- Very high power levels in-band
- Rulemaking pending, ET 98-42
- Part 15 interests want Commission to limit emission levels

Results of Fact Gathering (1)

- Press picks up on the problem
 - ‘Blood in the water’
- Over 400 regional and local ISP’s using Part 15 for last mile bypass
- Confusion inside the Commission as to exact role of Part 15
- Consumer is confused about how Part 15 works

Results of Fact Gathering (2)

- Industry is in denile about the overall problem
- More devices to be deployed on 2.4 GHz than anyone imagines
 - 1 Billion Bluetooth devices by 2005

Next Steps

- More fact gathering
- Try to generate possible solutions to the problem
- Second report to be made at the next TAC meeting in September, 2000