November 2, 2026

Marlene H. Dortch
Secretary
Federal Communications Commission
45 L Street NE
Washington, D.C. 20554

Re: Notice of *Ex Parte* Communication, MB Docket No. 22-405

Dear Ms. Dortch:

On October 29, 2026, Jeff Detweiler and Paul Peyla of Xperi, Ashruf El-Dinary representing the National Radio Systems Committee (NRSC), and David Layer and the undersigned of the National Association of Broadcasters (NAB), met with Albert Shuldiner, James Bradshaw, and Priscilla Lee of the Media Bureau to discuss whether FM hybrid digital broadcasts are strictly limited to a total maximum power of -10 dBc, pursuant to 47 C.F.R. § 73,404(f).

As set forth in the attached presentation, NAB and Xperi described the FCC's historical interpretation of this rule, including a seeming change in 2025 that limits the ability of certain digital radio stations to optimize operations. We respectfully urged the FCC to clarify its view of the rule to again coincide with the instructions in numerous pre-2025 letters granting station requests to increase digital power.

Mr. Layer also provided a brief update on the ongoing conversations among NAB, Xperi and the aviation stakeholders who have been studying the impact of HD Radio signals on the Aeronautical Radio Navigation Spectrum (ARNS). NAB stated that the aviation stakeholders have informed us that they have completed compatibility testing and that we expect to meet again with the aviation stakeholders in the next month to discuss their findings.

Please direct any inquiries regarding this matter to the undersigned.

Respectfully Submitted,

Larry Walke
Associate General Counsel
Legal and Regulatory Affairs

Attachment

1 M Street SE
Washington DC 20003 3512
Phone 202 429 5300
nab.org

FM maximum digital power levels

Presented to:

Media Bureau

David H. Layer
Vice President, Advanced Engineering
National Association of Broadcasters
Washington, DC

October 29, 2026

NAB NATIONAL ASSOCIATION OF BROADCASTERS

FM maximum digital power levels

- At question is whether FM hybrid digital broadcasts are strictly limited to a total maximum digital power of -10 dBc
  - Related question as to when a showing is necessary for operation above -14 dBc
- CFR 47 §73.404(f):

> *All FM stations transmitting hybrid IBOC signals may operate with total digital effective radiated power of up to −14 dBc.* ***No station may operate its digital carriers with a total effective radiated power in excess of −10 dBc.*** *A station planning to operate with a total digital effective radiated power* ***in excess of −14 dBc*** *must certify compliance with table 1 to this paragraph (f) by calculating the F(50,10) signal strength of its analog signal at the first adjacent station's F(50,50) 60 dBμ contour.*

FM maximum digital power levels

- From NRSC-5-E, ref. doc. 1026 (Jan 2023)

POWER LEVEL GREATER THAN -10 dBc

POWER LEVEL GREATER THAN -14 dBc

Table 4-4: Sideband Power for Various Service Modes and Digital to Analog Power Ratios

Nominal Digital-to-Analog Power Ratio (dBc) Service Mode MP1	Single Subcarrier Power (dBc)	Total Integrated Power of Both Sidebands (dBc)				Total Integrated Power of One Sideband (dBc)			
		MP1 100% of MP1 Power	MP2 110% of MP1 Power	MP3 120% of MP1 Power	OTHER[1] 140% of MP1 Power	MP1 100% of MP1 Power	MP2 110% of MP1 Power	MP3 120% of MP1 Power	OTHER[1] 140% of MP1 Power
-20.0	-45.8	-20.0	-19.6	-19.2	-18.5	-23.0	-22.6	-22.2	-21.5
-14.0	-39.8	-14.0	-13.6	-13.2	-12.5	-17.0	-16.6	-16.2	-15.5
-13.0	-38.8	-13.0	-12.6	-12.2	-11.5	-16.0	-15.6	-15.2	-14.5
-12.0	-37.8	-12.0	-11.6	-11.2	-10.5	-15.0	-14.6	-14.2	-13.5
-11.0	-36.8	-11.0	-10.6	-10.2	-9.5	-14.0	-13.6	-13.2	-12.5
-10.0	-35.8	-10.0	-9.6	-9.2	-8.5	-13.0	-12.6	-12.2	-11.5

[1]OTHER service modes include MP11, MP5, MP6, MP1X, DSB1, MP1XOV, MP6OV, DSB1OV

FM maximum digital power levels

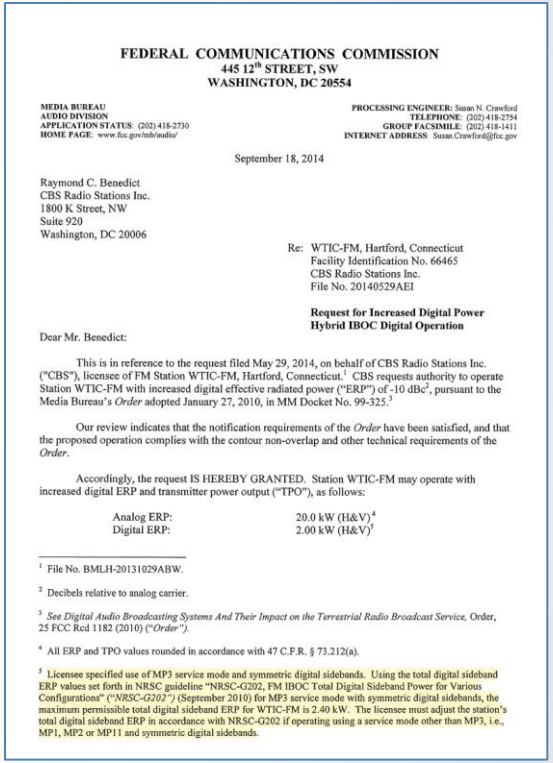
- For over a decade the FCC referenced this table in digital power increase GRANT LETTERS to broadcasters
  - Example from letter to station WTIC-FM, September 18, 2014:

Licensee specified use of MP3 service mode and symmetric digital sidebands. Using the total digital sideband ERP values set forth in NRSC guideline "NRSC-G202, FM IBOC Total Digital Sideband Power for Various Configurations" ("NRSC-G202") (September 2010) for MP3 service mode with symmetric digital sidebands, the maximum permissible total digital sideband ERP for WTIC-FM is 2.40 kW. ***The licensee must adjust the station's total digital sideband ERP in accordance with NRSC-G202 if operating using a service mode other than MP3, i.e., MP 1, MP2 or MP 11 and symmetric digital sidebands.***

(note – NRSC-G202 table is identical to Table 4-4)

FM maximum digital power levels

- WTIC example highlights this issue:
  - Request for MP3 at -10 dBc
  - Granted a digital ERP of 2.0 kW (-10 dBc)
  - Recognizes that actual ERP will be 2.4 kW (-9.2 dB) and says broadcaster **MUST** use this higher value
- Other examples of this:
  - WQKX-FM (Nov 17, 2014)
  - KXBS (July 9, 2021)



FEDERAL COMMUNICATIONS COMMISSION
445 12th STREET, SW
WASHINGTON, DC 20554

MEDIA BUREAU
AUDIO DIVISION
APPLICATION STATUS: (202) 418-2730
HOME PAGE: www.fcc.gov/mb/audio/

PROCESSING ENGINEER: Susan N. Crawford
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INTERNET ADDRESS: Susan.Crawford@fcc.gov

September 18, 2014

Raymond C. Benedict
CBS Radio Stations Inc.
1800 K Street, NW
Suite 920
Washington, DC 20006

Re: WTIC-FM, Hartford, Connecticut
Facility Identification No. 66465
CBS Radio Stations Inc.
File No. 20140529AEI

Request for Increased Digital Power
Hybrid IBOC Digital Operation

Dear Mr. Benedict:

This is in reference to the request filed May 29, 2014, on behalf of CBS Radio Stations Inc. ("CBS"), licensee of FM Station WTIC-FM, Hartford, Connecticut.[1] CBS requests authority to operate Station WTIC-FM with increased digital effective radiated power ("ERP") of -10 dBc[2], pursuant to the Media Bureau's *Order* adopted January 27, 2010, in MM Docket No. 99-325.[3]

Our review indicates that the notification requirements of the *Order* have been satisfied, and that the proposed operation complies with the contour non-overlap and other technical requirements of the *Order*.

Accordingly, the request IS HEREBY GRANTED. Station WTIC-FM may operate with increased digital ERP and transmitter power output ("TPO"), as follows:

Analog ERP:	20.0 kW (H&V)[4]
Digital ERP:	2.00 kW (H&V)[5]

[1] File No. BMLH-20131029ABW.

[2] Decibels relative to analog carrier.

[3] *See Digital Audio Broadcasting Systems And Their Impact on the Terrestrial Radio Broadcast Service*, Order, 25 FCC Rcd 1182 (2010) (*"Order"*).

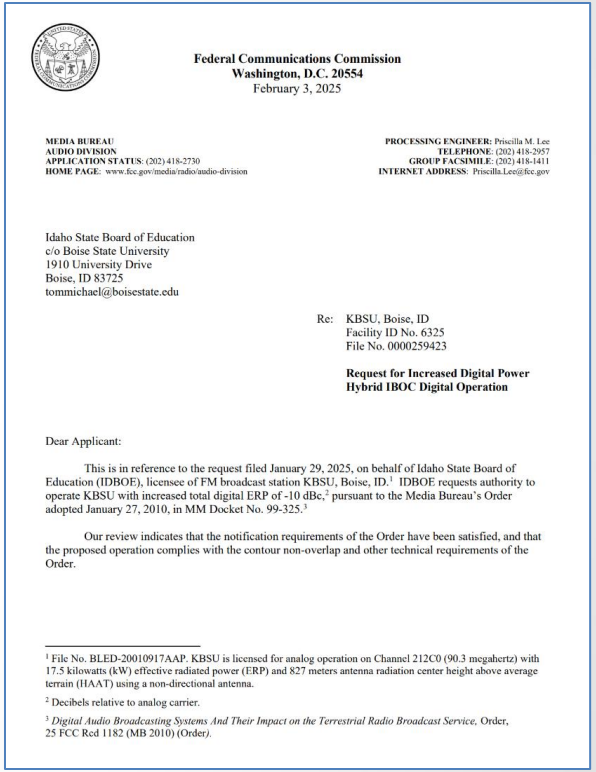
[4] All ERP and TPO values rounded in accordance with 47 C.F.R. § 73.212(a).

[5] Licensee specified use of MP3 service mode and symmetric digital sidebands. Using the total digital sideband ERP values set forth in NRSC guideline "NRSC-G202, FM IBOC Total Digital Sideband Power for Various Configurations" (*"NRSC-G202"*) (September 2010) for MP3 service mode with symmetric digital sidebands, the maximum permissible total digital sideband ERP for WTIC-FM is 2.40 kW. The licensee must adjust the station's total digital sideband ERP in accordance with NRSC-G202 if operating using a service mode other than MP3, i.e., MP1, MP2 or MP11 and symmetric digital sidebands.

FM maximum digital power levels

- In 2025 the FCC's position changed:
  - Grant letter to KBSU dated Feb 3, 2025

Licensee specified the use of symmetric digital sideband power levels. Using the total digital sideband ERP values set forth in the 2010 MB DAB Order, 25 FCC Record at 1190, the maximum permissible total digital sideband ERP for KBSU is 1.75 kW. If the station operates using the extended hybrid modes, ***the licensee must adjust the total digital sideband ERP in accordance with our rules. We note that the total digital sideband ERP may never exceed 1.75 kW (-10 dBc).***



Federal Communications Commission
Washington, D.C. 20554
February 3, 2025

MEDIA BUREAU
AUDIO DIVISION
APPLICATION STATUS: (202) 418-2730
HOME PAGE: www.fcc.gov/media/radio/audio-division

PROCESSING ENGINEER: Priscilla M. Lee
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Idaho State Board of Education
c/o Boise State University
1910 University Drive
Boise, ID 83725
tommichael@boisestate.edu

Re: KBSU, Boise, ID
Facility ID No. 6325
File No. 0000259423

Request for Increased Digital Power
Hybrid IBOC Digital Operation

Dear Applicant:

This is in reference to the request filed January 29, 2025, on behalf of Idaho State Board of Education (IDBOE), licensee of FM broadcast station KBSU, Boise, ID.[1] IDBOE requests authority to operate KBSU with increased total digital ERP of -10 dBc,[2] pursuant to the Media Bureau's Order adopted January 27, 2010, in MM Docket No. 99-325.[3]

Our review indicates that the notification requirements of the Order have been satisfied, and that the proposed operation complies with the contour non-overlap and other technical requirements of the Order.

[1] File No. BLED-20010917AAP. KBSU is licensed for analog operation on Channel 212C0 (90.3 megahertz) with 17.5 kilowatts (kW) effective radiated power (ERP) and 827 meters antenna radiation center height above average terrain (HAAT) using a non-directional antenna.

[2] Decibels relative to analog carrier.

[3] *Digital Audio Broadcasting Systems And Their Impact on the Terrestrial Radio Broadcast Service*, Order, 25 FCC Rcd 1182 (MB 2010) (Order).

FM maximum digital power levels

- Operating above -10 dBc in accordance with Table 4-4 is not meaningfully harmful to 1st-adjacent channel signals
  - Only one set of extended hybrid subcarriers (not two)
  - These power levels are assessed at the 6 dB D/U operating point (at protected contour) so undesired subcarrier amplitude is 1/2 of desired subcarriers
  - Further reduced by RX IF filter rolloff and other filters

FM-band HD Radio hybrid signal spectrum

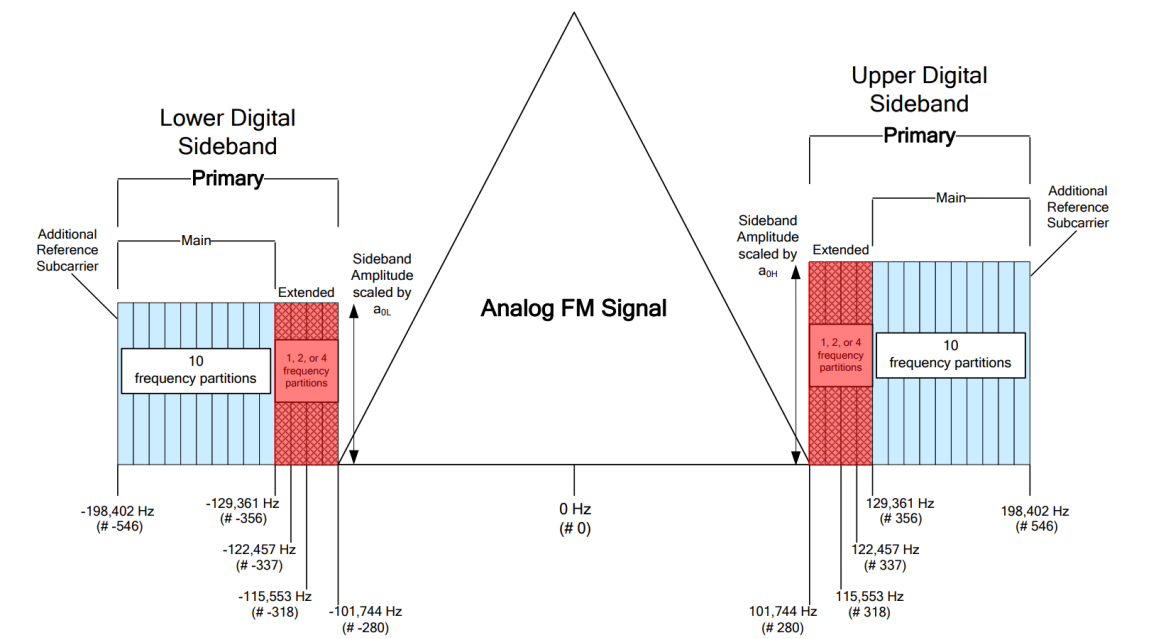
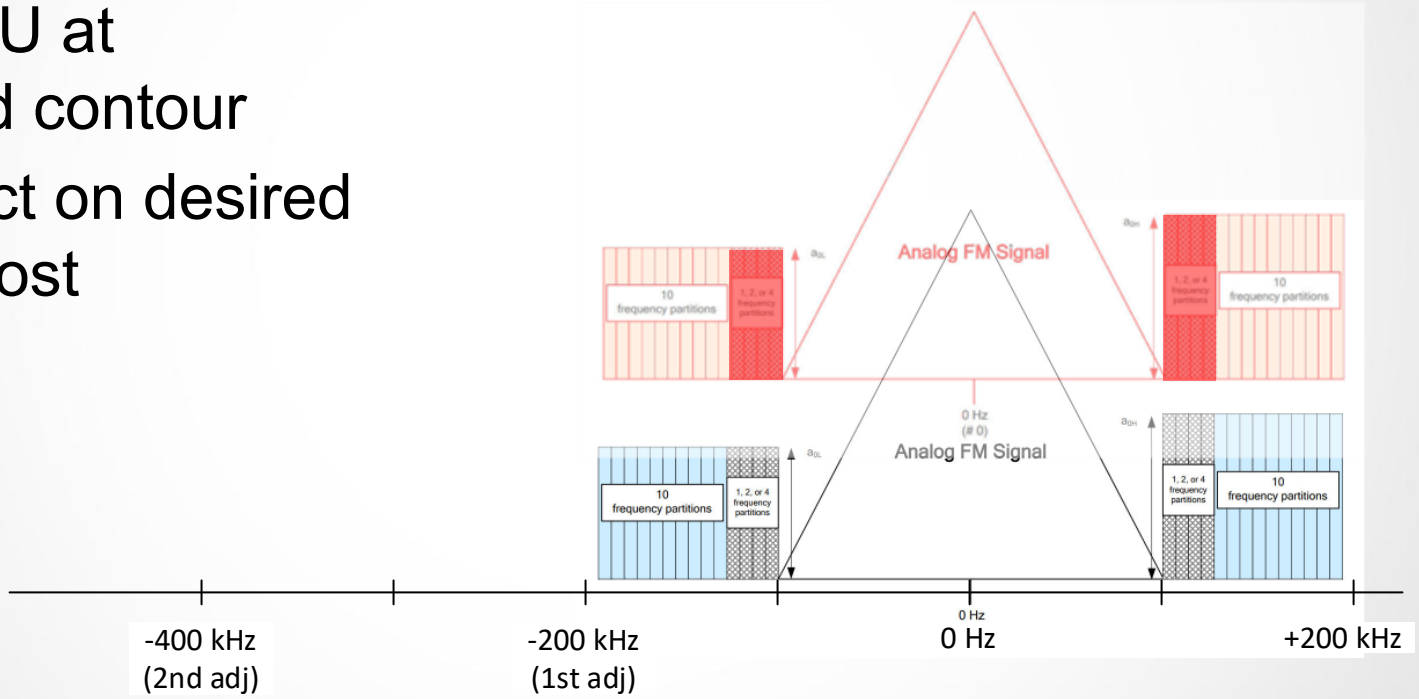


Figure 5-6: Spectrum of the Extended Hybrid Waveform – Service Modes MP2, MP3, MP11, MP5, MP6, MP1X, DSB1, MP1XOV, MP6OV, and DSB1OV

Source: NRSC-5-E, ref. doc. 1011s, Nov. 2022

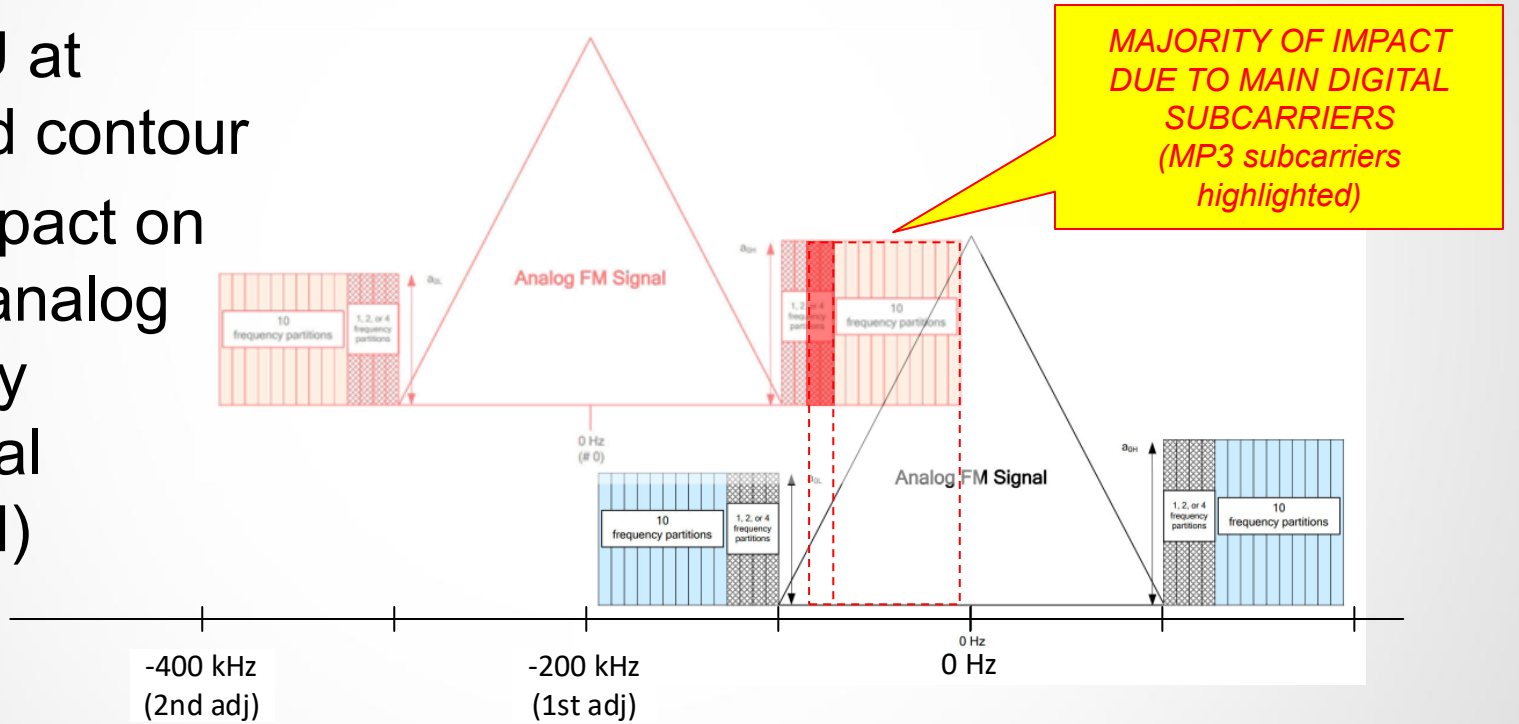
FM-band HD Radio signal spectrum- co-channel

- 20 dB D/U at protected contour
- No impact on desired analog host



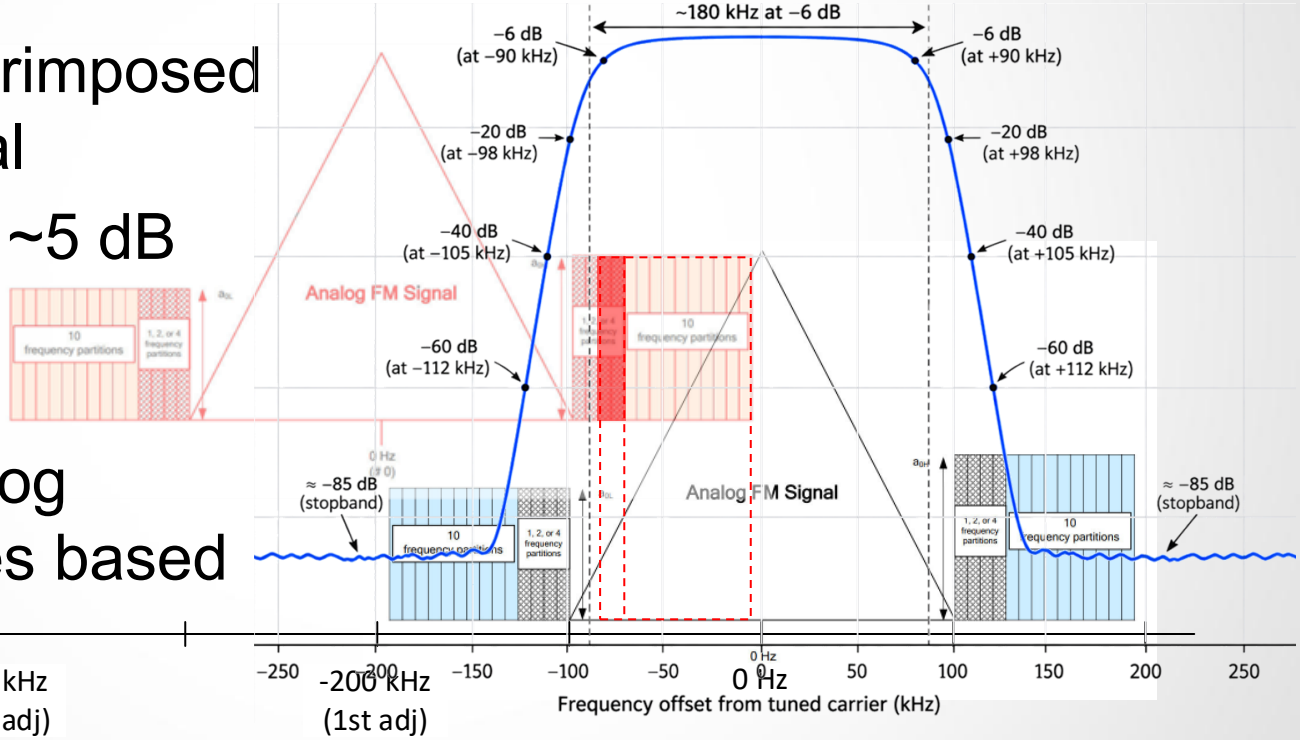
FM-band HD Radio signal spectrum – 1st-adj channel

- 6 dB D/U at protected contour
- Minor impact on desired analog host (only one digital sideband)



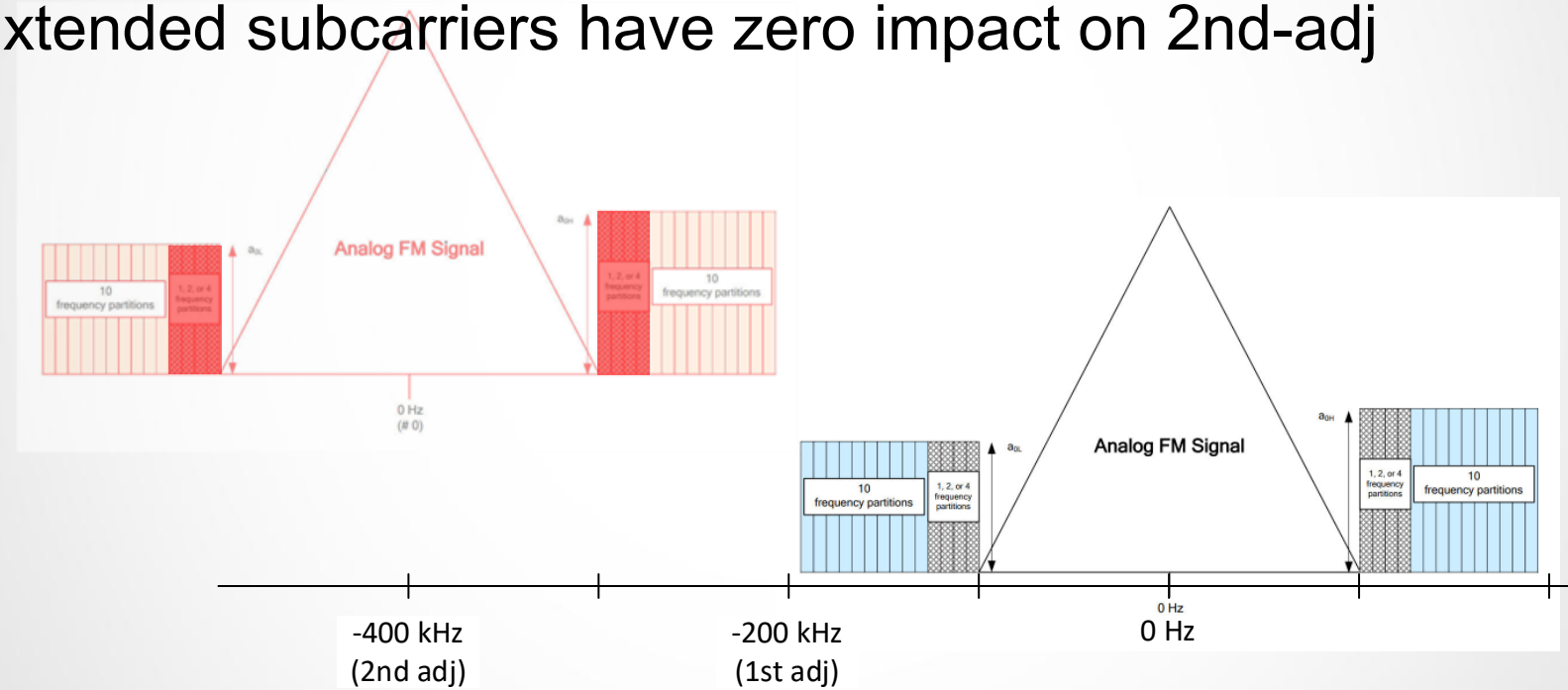
FM-band HD Radio signal spectrum – 1st-adj channel

- RX IF filter superimposed on desired signal
- In this example, ~5 dB down at MP3 subcarriers
- Actual host analog occupancy varies based on audio processing



FM-band HD Radio signal spectrum – 2nd-adj channel

- Extended subcarriers have zero impact on 2nd-adj



FM maximum digital power levels

- In 2024 NAB and Xperi flagged this as an issue and asked the FCC to update this rule to reflect actual system design:

  All FM stations transmitting hybrid IBOC signals may operate with total digital effective radiated power of up to -14 dBc. No station may operate its digital carriers with a total effective radiated power in excess of -10 dBc ***when operating in hybrid service mode MP1****.*

  Stations operating with extended hybrid service modes may [must] operate with total integrated digital power levels specified in Table 4-4 of NRSC-5-E ref. doc. 1026 (shown here).

FM maximum digital power levels

- Table 4-4 reflects the fact that as the number of digital subcarriers is increased, the total digital power also increases

- If the total digital power is held constant as the number of digital subcarriers is increased, then the individual subcarrier power will decrease resulting in
  - Reduced digital coverage
  - More frequent digital-to-analog blending

FM maximum digital power levels - summary

- Current FCC policy prohibits operation at the highest power levels and requires certain broadcasters to operate their system in a sub-optimal fashion
  - Affects broadcasters desiring to use -10 dBc for MP3 or MP11
- NAB and Xperi ask the FCC to require broadcasters to operate digital radio systems as intended, in compliance with Table 4-4
  - It worked well for over a decade


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