

**Responses to Federal Communications Commission (“Commission”) OET Questions re. 1538-EX-ST-2024:** Link to narrative: <https://apps.fcc.gov/els/GetAtt.html?id=356374&x=>.

**Responses to correspondence 89283 (October 18, 2024)**

Link to question <https://apps.fcc.gov/els/GetAtt.html?id=361268&x=>.

**FCC.** Please verify the calculations. The new coordination report shows an increase in the antenna gain, however the power density values remain the same, and instead it shows an increase in the EIRP densities (not correct given that no other parameter is getting changed). It also looks like the emission designator 1H00N0N was not taken into account for the density calculations

**Kuiper.** We initiated a new Comsearch coordination report on 11/12/2024 with the parameters in Table 1 and will upload this report to the Experimental Licensing System upon completion of the coordination. The densities of effective isotropically radiated power (“EIRP”) and radio frequency (“RF”) power for modulated waveforms are calculated at 500 MHz, since 1000 MHz produces smaller densities.

Table 1. Parameters for Coordination Report Initiated on 11/12/2024

Parameter	Unmodulated Waveform	Modulated Waveform
Frequency (GHz)	27.50, 29.55, 30.00	27.50 - 28.50, 29.00 - 30.00
RF Power Density (dBW/4kHz)	14.0	-41.0
Gain (dBi)	53.0	53.0
EIRP Density (dBW/4kHz)	67.0	12.0
EIRP (dBW)	67.0	63.0
Bandwidth (MHz)	-	500 - 1000
Emission	1H00N0N	500MD7W - 1G00D7W

The calculations based on the maximum requested EIRP for the modulated waveforms in the STA narrative 1538-EX-ST-2024 are below.

- Modulated Waveform with 500 MHz Bandwidth: Peak EIRP = 63 dBW, Gain = 53 dBi → RF Power Density =  $63 - 53 - 10\log(500) - 60 + 10\log(4000) = -41.0$  dBW/4kHz and EIRP density =  $-41.0 + 53 = 12.0$  dBW/4kHz
- Modulated Waveform with 1000 MHz Bandwidth: Peak EIRP = 63 dBW, Gain = 53 dBi → RF Power Density =  $63 - 53 - 10\log(1000) - 60 + 10\log(4000) = -44.0$  dBW/4kHz and EIRP density =  $-44.0 + 53 = 9.0$  dBW/4kHz

The FCC is correct in correspondence 89283 that the gain in the previous coordination report, dated 10/14/2024, had been increased to 53.8 dBi while it should have been kept at 53.0 dBi. Keeping power densities at the same level as WX9XHA/0898-EX-ST-2024 28 GHz Coordination Report 1,<sup>1</sup> the gain increase led to a higher EIRP density—12.8 dBW/4 KHz, as opposed to 12 dBW/4 KHz—corresponding to the antenna gain 53 dBi. The higher EIRP density of 12.8 dBW/4kHz is a more conservative coordination than the 12 dBW/4 KHz EIRP density because it uses higher interference values.

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<sup>1</sup> 1538-EX-ST-2024 requests a modification of WX9XHA/0898-EX-ST-2024.

Nonetheless, as mentioned above, we have requested another Comsearch report with the parameters shown in Table 1.