

Response to correspondence Reference Number 22080

(1)

Necessary Bandwidth (NB):

$$NB = 2 * (\text{Peak Frequency Deviation}) + 2 * (\text{Max Frequency of the Modulating Signal})$$

The applicant provided the following information for the Necessary Bandwidth calculation.

Necessary bandwidth: FCC permitted: +4kHz and -4kHz Total: 8 kHz.

our radio(FM): +3.5kHz and -0.5kHz Total:4 kHz.

Frequency Deviation: 0.5kHz and 3.5kHz=4kHz.

Max frequency of Modulating signal: No max frequency for this.because it is PCM(pulse code modulation),not audio frequency.

Emission Designator:

Necessary Bandwidth – 4kHz

Type of Modulation of main carrier – Frequency Modulation

Nature of signal modulating the main carrier – 1 (A single channel containing quantized or digital information without the used of modulating subcarrier, excluding time division multiplex.)

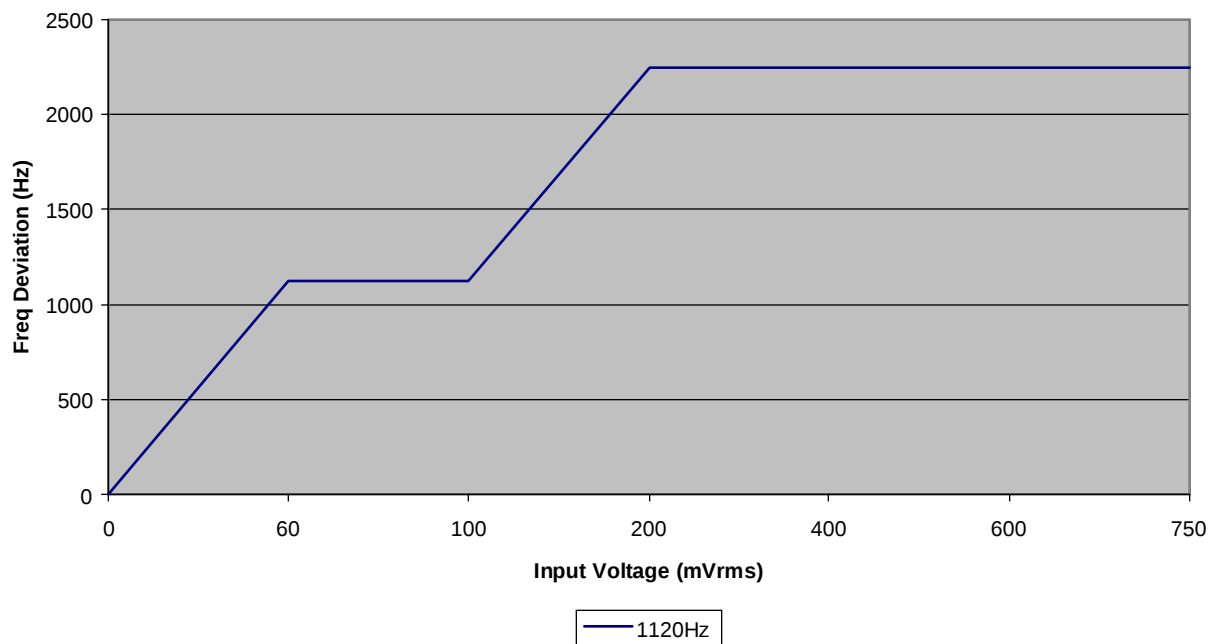
Type of information to be transmitted – D (Data transmission, telemetry, telecommand)

Emission Designator: 4K00F1D

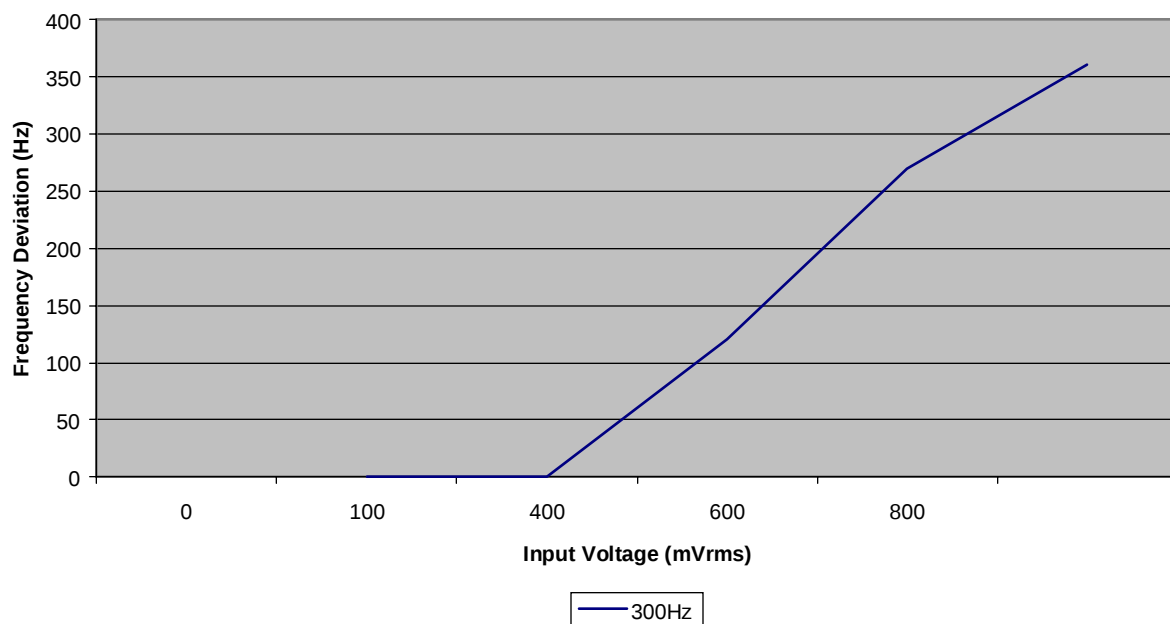
(2) Modulating limiting plots

Amplitude level of modulating signal is limited, since the modulating signal is a pulse waveform.

Modulation limiting vs Input Signal



Modulation Limiting



(3)

Radiated Spurious Emissions

Customer: A.H.C Megatech

2/27/02

EUT: 27MHz R/C Transmitter

Test: Antenna Substitution Method for Radiated Spurious Emissions (Ref ANSI/TIA/EIA-603-A)

FCC Limit: $43 + 10\log(P)$

$$43 + 10 \log(0.00327) = 18.14\text{dBc}$$

Emission Frequency (MHz)	Antenna Polarz. (V/H)	Power into Sub. Ant. (dBm)	Cable Correction (dB)	Antenna Gain (dBd)	Dipole Equiv. Pwr (dBm)	Spurious Emissions (dBc)	FCC Limit (dBc)	Delta to FCC Limit (dB)
405.681	H	-36.8	0.6	1.91	-35.49	40.63	18.14	-22.49
392.158	H	-40.5	0.6	2.38	-38.72	43.86	18.14	-25.72
378.621	H	-42.6	0.5	3.84	-39.26	44.4	18.14	-26.26
419.212	H	-40.7	0.7	3.39	-38.01	43.15	18.14	-25.01
459.758	H	-41.3	0.8	3.64	-38.46	43.6	18.14	-25.46
473.291	H	-42.5	0.8	3.42	-39.88	45.02	18.14	-26.88

(Ref ANSI/TIA/EIA-603-A)

Dipole Equivalent Power (dBm) = Power into substitution ant. (dBm) - cable loss (dB) + ant. gain (dBd)

Radiated Spurious Emissions (dBc) = $10\log(\text{TX power in watts} / 0.001)$ - dipole equivalent power (dBm)