

REPLY TO REQUEST FOR ADDITIONAL DATA

DATE: 7/14/98

FCC ID: NP42423412-004

CORRESPONDANCE ID: 1739

MANUFACTURER: Johnson Data Telemetry

DATE OF REQUEST: 7/7/98

REQUEST: " Please show compliance with $50 + 10 \text{ Log}(P)$ attenuation requirement for spurious and harmonic emissions."

Please see attached data.

FCC ID:

NP42423412-004

CORRESPONDANCE ID: 1739

NAME OF TEST: Transmitter Spurious and Harmonic Outputs

RULE PART NUMBER: 2.991, 90.210 (d)(3)

MINIMUM STANDARD: For 7 Watts; $50 + 10\log_{10}(7 \text{ Watts}) = -58.5 \text{ dBc}$
or -70 dBc whichever is the lesser attenuation.

TEST RESULTS: Meets minimum standard (see data on the following page)

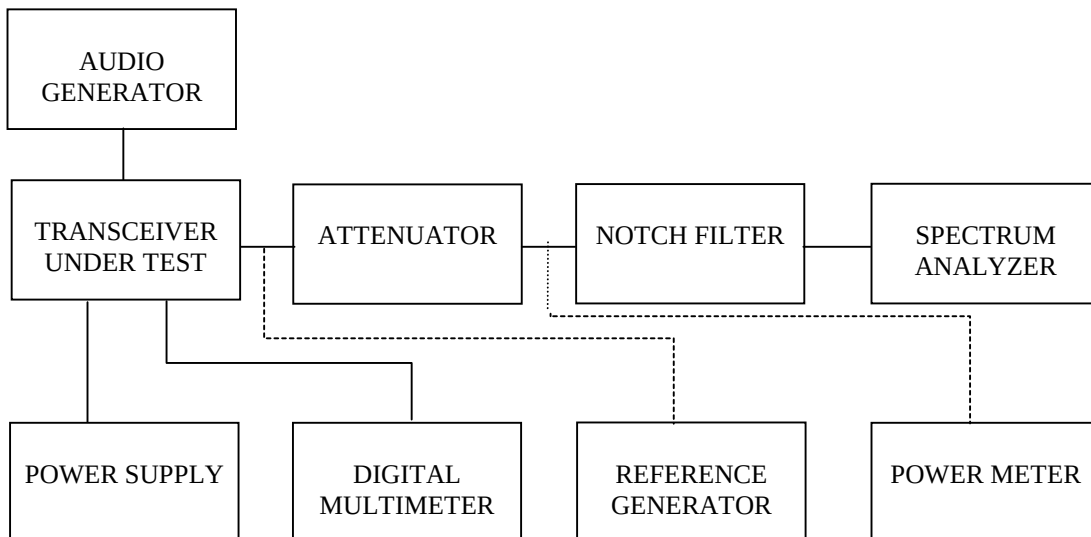
TEST CONDITIONS: Standard Test Conditions, 25 C
RF voltage measured at antenna terminals

TEST PROCEDURE: TIA/EIA - 603, 2.2.13

TEST EQUIPMENT: Attenuator, Tenuline Model 8340 / 20 dB / 25 Watt
Power Supply, Model HP-6284A
Audio Generator, Model HP8903B
Digital Voltmeter, Fluke Model 8012A
Reference Generator, Model HP
Spectrum Analyzer, Model HP8563E
Notch Filter

PERFORMED BY: William Junge

TEST SET-UP:



NAME OF TEST: Transmitter Spurious and Harmonic Outputs
(Continued)

MEASUREMENT PROCEDURE:

1. The transmitter carrier output frequency is 132.000, 150.000 and 174.000 MHz. The reference oscillator frequency is 17.5000 MHz.
2. After carrier reference was established on spectrum analyzer, the notch filter was adjusted to null the carrier F_c to extend the range of the spectrum analyzer for harmonic measurements.
3. At each spurious frequency, Generator substitution was used to establish the true spurious level.
4. The spectrum was scanned to the 10th harmonic.

TEST DATA:

Frequency: 403.000 MHz
Power: 7.0 Watts
38.5 dBm

Frequency	Relation	Level (dBm)	Level dBc
806	2 F_o	-33.1	71.6
1209	3 F_o	-53.9	92.4
1612	4 F_o	-45.8	84.3
2015	5 F_o	-52.4	90.9
2418	6 F_o	-55.3	93.8
2821	7 F_o	-65.4	103.9
3224	8 F_o	-56.1	94.6
3627	9 F_o	-49.4	87.9
4030	10 F_o	-63.8	102.3

Frequency: 457.500 MHz
Power: 7.0 Watts
38.5 dBm

Frequency	Relation	Level (dBm)	Level dBc
915	2 F_o	-35.0	73.5
1372.5	3 F_o	-32.0	70.5
1830	4 F_o	-49.3	87.8
2287.5	5 F_o	-44.9	83.4
2745	6 F_o	-39.2	77.7
3202.5	7 F_o	-62.2	100.7
3660	8 F_o	-39.0	77.5
4117.5	9 F_o	-65.4	103.9
4575	10 F_o	-65.0	103.5

NAME OF TEST: Transmitter Spurious and Harmonic Outputs
(Continued)

Frequency: 512.000 MHz
Power: 7.0 Watts
38.5 dBm

Frequency	Relation	Level (dBm)	Level dBc
1024	2 Fo	-44.0	82.5
1536	3 Fo	-53.9	92.4
2048	4 Fo	-47.2	85.7
2560	5 Fo	-41.4	79.9
3072	6 Fo	-65.9	104.4
3584	7 Fo	-59.8	98.3
4096	8 Fo	-59.0	97.5
4608	9 Fo	-54.5	93.0
5120	10 Fo	-65.0	103.5