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Federal Communications Commission,
Wireless Bureau Applications,
P.O. Box 358 130,
Pittsburgh, PA 15251-5130,
28 October, 2008

Re: Request for a Waiver of Part 87 Rules to Allow Certification of Thales Top Flight
Flange Mount High Power Amplifier KV6TFS-HPA82166A

Dear Sir,

Thales Avionics Ltd. ("Thales") wishes to submit an application for FCC certification of its Top Flight Satcom (TFS) external High Power Amplifier KV6TFS-HPA82166A. The Flange Mount High Power Amplifier (FMHPA) is intended to support the Classic and class 6 aeronautical communications services when used in conjunction with the Satellite Data unit KV6TFS-SDU82155D.

During testing to the Federal Communications Commission's ("FCC's") applicable requirements of the Part 87 rules Thales encountered one issue that requires a request for a waiver. Thales therefore request a waiver against the test method used for the measurement of the FMHPA (when used with the SDU) for Conducted Spurious Emissions to the requirements of FCC 47 CFR Parts 2.1051 and 87.139 (i) (1). Thales have previously applied for this waiver and been successful for the SDU intended for Inmarsat class 3A use – FCC ID: KV6-TFS-SDU82155A.

Thales Avionics request that the Commission grant this waiver that the FMHPA complies with the Conducted Emissions limits as specified in 47 CFR Section 87.139 (i)1 for an Antenna Terminal **but** with measurements made at the High Power Amplifier (HPA) Output, that is before the Diplexer/Low Noise Amplifier (DLNA), with the resultant spurious signals at the Antenna derived by calculation, based on the known attenuation of the DLNA.

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Technical Discussion

87.139 (i) (1) Conducted Emissions Measurement

The requirements of FCC 47 CFR Part 87.139 (i) (1) are such that the conducted spurious emissions are to be measured at the antenna output. For the FMHPA maximum transmit power (when used with SDU), these requirements are physically impossible to measure. For example, the spurious emissions limit, in the frequency band 1525 to 1559 MHz is stated as an attenuation of 203 dB relative to the carrier level, measured in a 4 kHz bandwidth. For the FMHPA maximum output, the antenna output will be about 20 dBW EIRP, this translates to an absolute power level of -153 dBm in 4 kHz, which is lower than thermal noise for temperatures above 10 Kelvin.

Thales has concluded that the only practical way to measure conducted spurious emissions is to make the measurement at the HPA output, before the DLNA, and compute the resultant spurious at the antenna by including the attenuation of the DLNA at the appropriate frequencies.

The DLNA is purchased as part of the antenna subsystem, and is not manufactured by Thales. The DLNA attenuation assumed is per the standards for a "Type F" DLNA published in ARINC Characteristic 741 (this is the type of DLNA used in the TFS system). It is worth noting that this is the same type of DLNA as used on many thousands of existing installations already approved by the FCC.

A technical test report will be submitted as part of the Thales Avionics overall submission to the FCC for approval of the TFS HPA. This Exhibit contains plots of the Conducted Spurious Emissions measured at the DLNA antenna port and contains a detailed table showing the calculation of new limits referred to the HPA output.

Conclusion

From the results detailed in this technical report Thales have concluded that by using this alternative method it is possible to show that the HPA KV6TFS-HPA82166A meets the Conducted Spurious Emission limits of FCC 47 CFR Parts 2.1051 and 87.139(i) (1) when used with the SDU Type Number 82155D.

Thales therefore request a waiver against the test method used for the measurement of the Conducted Spurious Emissions for HPA KV6TFS-HPA82166A.

Sincerely,



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