APPLICANT	MANUFACTURER
Amplidyne Inc. 59 LaGrauge Street Raritan, NJ 08869	Amplidyne Inc. 59 LaGrauge Street Raritan, NJ 08869

TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C

TEST PROCEDURE: ANSI C63.4:1992

TEST SAMPLE DESCRIPTION

BRANDNAME: Amplidyne Inc.

MODEL: AMP-2425-27S

FCC ID: XXXAMP2425-27S

TYPE: 2.4 GHz Direct Sequence Spread Spectrum Transmitter System

FREQUENCY RANGE: 2412 to 2462 MHz

POWER REQUIREMENTS: 12 VDC derived from an AC Adapter Model : MW41-1200500

TESTS PERFORMED

- 15.207(a) Conducted Emissions, AC Power
- 15.209(a) Spurious Case Radiated Emissions, Restricted Bands
- 15.247(a)(2) Occupied Bandwidth
- 15.247(b)(1) Power Output
- 15.247(c) Spurious Emissions, Antenna Conducted Emissions
- 15.247(d) Power Density
- 15.247(e) Processing Gain Data

REPORT OF MEASUREMENTS

Applicant:	Amplidyne Inc.
Device:	2.4 GHz Direct Sequence Spread Spectrum Transmitter System
FCC ID:	XXXAMP2425-27S
Power Requirements:	12 VDC derived from an AC Adapter Model : MW41-1200500
Applicable Rule Section:	Part 15, Subpart C, Section 15.247

TEST RESULTS

15.207(a): The radio frequency voltage that was conducted back on to the AC power line on any frequency/frequencies within the bandwidth of 450kHz to 30MHz did not exceed 250 microvolts.

15.247(a)(2): The minimum 6dB bandwidth was no less than 500 kHz.

15.247(b)(1): The maximum peak output power of the transmitter did not exceed 1 watt. The test samples peak power measured 213.8 mW(23.3 dBm) at the antenna terminals.

15.247(b)(3) The system utilizes antennas which have directional gain greater than 6 dBi. The device operates in the 2400 to 2483.5 MHz band and is used exclusively for fixed point to point operations. The maximum gain antenna used with this system has a gain of 19 dBi. Therefore the output power was reduced 1 dB for every 3 dB above a gain of 6dBi yielding a maximum allowable output power at the antenna terminal of 25.7 dBm= 369 mW.

15.247(b)(4) The device does not operate in such a manner that causes the public to be exposed to levels in excess of the commissions guidelines. The device is used for fixed point to point operations where the transmit antenna is located on a mast external to a building well away from public exposure. In addition the installation guide states that the installer should keep the antenna at least 1 foot from possible human exposure and if this is not possible, appropriate warning signs shall be posted.

15.247(c): The antenna conducted emissions were found to be at least 20dB down from the fundamental frequencies. All other emissions within the restricted bands specified in 15.205 did not exceed the general radiated emissions limits specified in 15.209(a).

15.247(d): The power density did not exceed 8dBm in any 3 kHz bandwidth averaged over 1 second.

15.247(e) The process gain information was supplied by Amplidyne Inc. and can be found as

a separate e-file attachment named Processing Gain.pdf.

GENERAL NOTES

1. All readings were taken using a peak detector function at a distance of 3 meters.
2. The duty cycle was applied to the peak readings in order to determine the average value of emissions.
3. The device operates from 2412 MHz to 2462 MHz. Therefore, where applicable, measurements were taken at three center frequencies; low, middle and high (2422 MHz, 2447 MHz and 2462 MHz).
4. The frequency range was scanned form 30 MHz to 25 GHz. All emissions not reported were more than 10dB below the specified limit.
5. Spurious Radiated Emissions located in the restricted bands listed in Paragraph 15.205 were measured with each of the following antennas attached to the system:

   A). Omni Directional Antenna, Model No.: OMNI-INET-10, Maximum gain=10 dBi

   B). Flat Panel Antenna, Model No.: APN-13, Maximum gain=13dBi

   C). Flat Panel Antenna, Model No.:INET-PNL-16, Maximum gain=16 dBi

   D). Parabolic Grid Antenna, Model No.: INET-ANT-15, Maximum gain=15 dBi

   E). Parabolic Grid Antenna, Model No.: APG-15, Maximum gain=15 dBi

   F). Parabolic Grid Antenna, Model No.: INET-ANT-19, Maximum gain=19 dBi

   NOTE: Although a Parabolic Grid Antenna with 24 dBi gain is shown in the users manual, it did not qualify to be used with this system.

6. The device is a spread spectrum transmission system consisting of a spread spectrum transmitter(FCC ID: M4Y-WL2450), a DC Injector, a lightning arrestor, an RF amplifier, and the six antennas listed above. In accordance with Paragraph 15.204, this device is being marketed as a system and will only be used in this configuration.

EXHIBIT 4

Conducted Emissions

Para. 15.207(a)

(Please see separate e-file attachments named CEdata.pdf)

EXHIBIT 4

Occupied Bandwidth

Para. 15.247(a)(2)

(Please see separate e-file attachments named OccBw.pdf)

EXHIBIT 4

Power Output

Para. 15.247(b)

(Please see separate e-file attachments named pwroutput.pdf)

EXHIBIT 4

Antenna Conducted Emissions

Para. 15.247(c)

(Please see separate e-file attachments named Antce1-6.pdf, Antce7-12.pdf, Antce13-18.pdf, Antce19-24.pdf, Antce25-30.pdf, Antce31-34.pdf)

EXHIBIT 4

Spurious Case Radiated Emissions, Restricted Bands

Para. 15.209(a)

(Please see separate e-file attachments named Spurious RE.pdf)

EXHIBIT 4

Power Density

Para. 15.247(d)

(Please see separate e-file attachments named pwrden.pdf)

EXHIBIT 4

Processing Gain Data

Para. 15.247(e)

(Please see separate e-file attachments named Processing Gain.pdf)

EQUIPMENT LISTS

Occupied Bandwidth

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	03/20/2000	09/20/2000
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	03/08/2000	03/08/2001
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	03/20/2000	09/20/2000
332	Attenuator	Narda	DC - 11 GHz	768-10	07/07/1999	07/07/2000

Power Output

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
066	High Gain Horn Antenna	Microlab/FXR	8.2 GHz - 12.4 GHz	X638A	01/26/2000	01/26/2001
122B	Capacitor	Solar Electronics	10 uf, 100 amp.	6512-106R	05/11/1999	05/11/2000
122D	Capacitor	Solar Electronics	10 uf, 100 amp	6512-106R	05/11/1999	05/11/2000

Antenna Conducted, 30MHz to 18GHZ

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	03/20/2000	09/20/2000
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	03/08/2000	03/08/2001
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	03/20/2000	09/20/2000
332	Attenuator	Narda	DC - 11 GHz	768-10	07/07/1999	07/07/2000

Conducted Emissions

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
078	LISN	Solar Electronics	10 kHz - 30 MHz	8028-50-TS24BNC	05/11/1999	05/11/2000
513	LISN	Solar Electronics	10 kHz - 30 MHz	8028-50-TS24BNC	11/02/1999	11/02/2000
575	Graphics Plotter	Hewlett Packard	N/A	7470A	04/22/1999	04/22/2000
7017	Transient Limiter	Hewlett Packard	9kHz - 200MHz	11947A	04/22/1999	04/22/2000
R089	Spectrum Analyzer	Hewlett Packard	30 Hz - 2.9 GHz	8560E	09/16/1999	09/16/2001

Power Density

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	03/20/2000	09/20/2000
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	03/08/2000	03/08/2001
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	03/20/2000	09/20/2000
332	Attenuator	Narda	DC - 11 GHz	768-10	07/07/1999	07/07/2000

Radiated Emissions, 30MHz to 18GHz

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3 Meter	RNY	10/15/1997	10/15/2000
128C	Double Ridge Guide	Eaton Corporation	1 GHz - 18 GHz	96001	09/16/1999	09/16/2000
129F	High Gain Horn Antenna	Microlab/FXR	18 GHz - 26.5 GHz	K638A	09/16/1999	09/16/2000
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	06/22/1999	06/22/2000
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	03/20/2000	09/20/2000
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	03/08/2000	03/08/2001
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	03/20/2000	09/20/2000
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	06/22/1999	06/22/2000
420	Amplifier	Hewlett Packard	2.0 GHz - 18 GHz	11975A	03/09/2000	03/09/2001
421	Harmonic Mixer	Hewlett Packard	18 GHz - 26.5 GHz	11970K	03/09/2000	03/09/2001
523	Biconilog	Electro-Mechanics	26 - 2000 MHz	3142B	10/22/1998	04/22/2000
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	06/16/1999	06/16/2001
617	Interference Analyzer	Electro-Metrics	10 kHz - 1 GHz	EMC-30	01/17/2000	01/17/2001