

AEROSPACE & FLIGHT TEST RADIO COORDINATING COUNCIL®

REQUEST FOR TELEMETRY FREQUENCY COORDINATION
(1435-1525 MHz)
(2310-2320 MHz and 2345-2390 MHz)

Date of Application 24 March 2016

Identity Control No. _____
(Not to be filled in by applicant.)

Date Required 15 April 2016

Date Complete _____
(Not to be filled in by applicant.)

NOTE: PROPRIETARY DATA/CLASSIFIED INFORMATION SHOULD NOT BE SUBMITTED.

- 1. (a) Name of applicant Avwatch Inc
- (b) Number and street 246 South Meadow Road; Gate 6 Office S-1
- (c) City, state and zip code Plymouth, MA 02360
- (d) Name and telephone for system contact Ryan Kowalske, 617.784.1181
- (e) Email rak@avwatch.us

- 2. (a) Application for (check one): New Station Renewal Modification
For Renewal or Modification please enclose a copy of the existing License, Call Sign: WI9XHK

- (b) If for modification state modification proposed Add new location and renew for four (4) year
period to facilitate additional testing.

3. Frequency(ies) requested 2377.00 MHz

4. Bandwidth and emission: (See instructions)

- (a) Occupied bandwidth-kHz 10,000.00 kHz
- Emission bandwidth-kHz 10,000.00 kHz

(b) Emission designator 10M0D1D

- 5. Category(ies) of station(s): Air-to-ground Air-to-air Ground checkout
Other (Explain) _____

6. Transmitter and associated antenna(s):

(a) Power 10W (19.95 EIRP) Ave Peak

(b) Transmitter nomenclature: Make Persistent Systems Model QRR

(c) Transmitter frequency range 2377.00 MHz XTAL Synthesized

(d) Frequency stability under all operating conditions <0.0015 %

(e) JFP status or Type Acceptance No. of transmitter FCC ID: SWX-XR2

(f) Type of transmitting antenna Omnidirectional No. per vehicle 2

(g) Gain in dB above isotropic 3 dBi Polarization Vertical

(h) Altitude and area of operation Max 6,000 FT AGL/ Sacramento, CA/ MIRAD: 125 miles (201km)

(i) Ground (Receiver): Address CHP HQ, 601 North Seventh Street
 City Sacramento County Sacramento State CA
 Latitude 38-35-52.49N Longitude 121-29-21.015W

(j) Receiver Antenna Type Parabolic - Tracking Gain in dB 24dBi

(k) Receiver Antenna Elevation above MSL in feet 135 FT

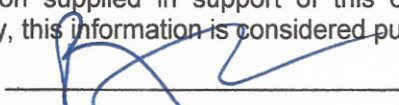
7. Duration and description of proposed operational program (attach additional sheets if required):

See attached.

8. **AFTRCC COORDINATION TERMS AND CONDITIONS**

- AFTRCC recommends use of the 2360 to 2390 MHz bands for all telemetry operations required within the "S" band. Coordination for telemetry operations in the bands 2310-2320 MHz and 2345-2360 MHz will be on a secondary basis, and may require additional coordination with the Wireless Communications Services.
- All requests for frequency coordination by Aerospace & Flight Test Radio Coordinating Council ("AFTRCC") are subject to the following terms and conditions:
- AFTRCC provides recommendations to the Federal Communications Commission ("FCC") for non-Government use of flight test voice and telemetry frequencies. AFTRCC's role is strictly advisory; in all cases the FCC makes the decision whether to issue a license.
- Applicants are advised that no representations or warranties, express or implied, are made as to the interference-free nature of any given frequency or frequencies which AFTRCC coordinates, or as to whether any given frequency recommendation is best suited for the Applicant's purposes.
- Applicants should also be aware that frequencies coordinated by AFTRCC are shared with other users; no one user is entitled to exclusive use of a frequency in any given area. Multiple users may be, and often are, licensed or have government assignments for use of the same frequencies. Hence, notwithstanding FCC issuance of a license to the Applicant, transmission on any given frequency may be subject to day-to-day, hour-by-hour scheduling with Government Area Frequency Coordinators ("AFC's") or other agencies.
- In return for AFTRCC's processing of the Applicant's request, the Applicant agrees to release and hold harmless AFTRCC, its officers, directors, agents, representatives, and member companies (and their respective officers, directors, employees, owners, and agents) from and against any and all claims, losses, liabilities, damages or expenses which may arise now or in the future as a result of the Applicant's acceptance of AFTRCC's recommendation, or its use of the recommended frequency(ies).
- By the signature of its duly authorized official below, the applicant accepts and acknowledges these limitations and conditions.
- Information supplied in support of this coordination request is part of the FCC application process. Accordingly, this information is considered public record material.

Signature:



Print Name:

Ryan Kowalske

Title:

CTO/Spectrum Manager

Date:

24 March 2016

**FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SPECIAL TEMPORARY AUTHORITY**

Applicant Name

Name of Applicant: Avwatch, Inc

Address

Attention: Ryan Kowalske
Street Address: 246 S Meadow Road; Office S-2 Gate 6
P.O. Box:
City: Plymouth
State: MA
Zip Code: 02360
Country:
E-Mail Address: rak@avwatch.us

Best Contact

Give the following information of person who can best handle inquiries pertaining to this application:
Last Name: Kowalske
First Name: Ryan
Title: CTO/Spectrum Manager
Phone Number: 6177841181

Explanation

Please explain in the area below why an STA is necessary:
 Coordination through AFTRCC for testing of Avwatch Datalink system on California Highway Patrol aircraft. Testing will be conducted in Sacramento, CA from 2 March 2015 - 2 September 2015. Frequency requested is 2377 MHz at 10W.

Purpose of Operation

Please explain the purpose of operation: To test the capabilities of the aircraft datalink system to be installed in California Highway Patrol aircraft.

Information

Callsign: WI9XHK
Class of Station: FX MO
Nature of Service: Experimental

Requested Period of Operation

Operation Start Date: 09/01/2015
Operation End Date: 03/01/2016

Manufacturer

List below transmitting equipment to be installed (if experimental, so state) if additional rows are required, please submit equipment list as an exhibit:

Manufacturer	Model Number	No. Of Units	Experimental
Persistent Systems LLC	Quad Radio Rout	2	No

Certification

Neither the applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. The applicant hereby waives any claim to the use of any particular frequency or electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.) The applicant acknowledges that all statements made in this application and attached exhibits are considered material representations, and that all the exhibits part hereof and are incorporated herein as if set out in full in this application; undersigned certifies that all statements in this application are true, complete and correct to the best of his/her knowledge and belief and are made in good faith. Applicant certifies that construction of the station would NOT be an action which is likely to have a significant environmental effect. See the Commission's Rules, 47 CFR1.1301-1.1319.

Signature of Applicant (Authorized person filing form): Ryan A Kowalske
Title of Applicant (if any): CTO/Spectrum Manager
Date: 2015-08-27 00:00:00.0

Station Location

City	State	Latitude	Longitude	Mobile	Radius of Operation
Sacramento	California	North 38 35 52	West 121 29 21	Within 201KM of 38-35-52 121-29-21	201.00

Datum: NAD 83

Is a directional antenna (other than radar) used? Yes

Exhibit submitted: No

(a) Width of beam in degrees at the half-power point: 10.00

(b) Orientation in horizontal plane: 8.00

(c) Orientation in vertical plane: 10.00

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? No

(a) Overall height above ground to tip of antenna in meters:

(b) Elevation of ground at antenna site above mean sea level in meters:

(c) Distance to nearest aircraft landing area in kilometers:

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft: None.

Action	Frequency	Station Class	Output Power/ERP	Mean Peak	Frequency Tolerance (+/-)	Emission Designator	Modulating Signal
New	2377.00000000-MHz	FX	2.000000 W 3.990000 W	P	5.00000000 %	5M00M0D	22M0D1D

City	State	Latitude	Longitude	Mobile	Radius of Operation
		North 38 35 52	West 121 29 21	201km radius around 38-35-52.49N 121-29-21.015W	201.00

Datum: NAD 83

Is a directional antenna (other than radar) used? Yes

Exhibit submitted: No

(a) Width of beam in degrees at the half-power point: 8.00

(b) Orientation in horizontal plane: 20.00

(c) Orientation in vertical plane: 8.00

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? No

(a) Overall height above ground to tip of antenna in meters:

(b) Elevation of ground at antenna site above mean sea level in meters:

(c) Distance to nearest aircraft landing area in kilometers:

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in

the opinion of the applicant, would tend to shield the antenna from aircraft:

Action	Frequency	Station Class	Output Power/ERP	Mean Peak	Frequency Tolerance (+/-)	Emission Designator	Modulating Signal
Modified	2377.00000000-MHz	MO	10.000000 W 19.950000 W	P	1.00000000 %	5M00M0D	22M0D1D



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AFTRCC
616 E 34th Street North
Wichita, KS 67219
316.821.9516

SUBJ: Request for Renewal and Modification to WI9XHK for California Highway Patrol Downlink Testing

Avwatch, Inc. has installed the AV-AIR-ADV-001 downlink system into the first two (2) California Highway Patrol Aircraft (GippsAero GA8 Airvan). The first aircraft, based out of Sacramento, CA, has completed initial testing and is entering Phase II testing. The second aircraft, based out of Napa, CA, is to begin initial testing 15 April 2016. Testing will be conducted in Bakersfield, CA.

The AV-AIR-ADV-001 utilizes the Persistent Systems Wave Relay© Quad Radio Router. Only two (2) of the four (4) radios are enabled and transmitting. One radio is attached to a 10W amplifier and the other radio is limited to 2W transmit power and is routed through a bandpass filter set to 2377.00 MHz. During testing, the network is continuously monitored and the transmit capability can be turned off within fifteen (15) minutes remotely and locally.

Avwatch is requesting a renewal for a period of four (4) years to facilitate up to twelve (12) aircraft coming online. No further modifications to this license are foreseen, as all future testing is expected to occur at either the Sacramento HQ receiver or the Bakersfield receiver.

Avwatch also requests to modify the license to add a receiver station at CHP Bakersfield, 4040 Buck Owens Blvd, Bakersfield, CA 93308 (35-23-48.15N 119-02-31.91W) for a MIRAD of 201km (125 miles) with a max altitude of 6,000 feet AGL on aircraft.

Testing:

Sacramento

Primary testing will be with CHP aircraft departing from McClellan Airfield or Auburn Airfield (shown next page). Testing will primarily occur to the North and West of Sacramento. Receiver is a directional, tracking antenna located at CHP HQ (601 N Seventh Street, Sacramento, CA (38-35-52.497N 121-29-21.015W)). Maximum performance of the system will be tested, facilitated by the request for 125 miles (201km).

Bakersfield

Primary testing will be with CHP aircraft departing from Meadows Field Airport in Bakersfield (shown third page). Testing will primarily occur to the North and West of Bakersfield. Receiver is a directional, tracking antenna located at CHP Bakersfield (4040 Buck Owens Blvd, Bakersfield, CA 93308 (35-23-48.15N 119-02-31.91W)). Maximum performance of the system will be tested, facilitated by the request for 125 miles (201km).



Monitoring:

Avwatch monitors testing and the network 24 hours a day/7 days a week. System engineers are both locally and remotely monitoring system performance and key testing criteria. Any request to stop transmitting can be completed within fifteen (15) minutes of notification. Primary POC is Ryan Kowalske, 617.784.1181, rak@avwatch.us.

Sacramento Testing Area



Bakersfield Testing Area

