

OpenWERX AirSpew Q&A

17 July 2017

Question: There are multiple variations of the DJI4, which one do we need to use?

Answer: Don't worry about the version as long as the LED signal can be overridden.

Question: Are the modules controlled with the DJI4 or do I need to add anything to it for it to function?

Answer: People have taken DJI4 to turn on and off lights on the drone, rewire the functionality to redirect the payload.

Questions: Are they used 1 at a time, or will there be multiple controlled at the same time?

Answer: Originally the Warfighters asked for the ability to drop 1 flyer at a time, but now there will be 1 button to release them all.

Question: Will all 3 systems be going at the same time?

Answer: Not all payloads are on the same drone at the same time. Think of a mount or connector to the DJI4 that can take a payload, but only 1 type of payload at a time. A drone will have only 1 of the payload items at a given time.

Question: Does the RF transmitter have to transmit in multiple frequencies?

Answer: It needs to transmit an FM radio payload. (attach payload, fly drone and broadcast payload; software defined radio because FM is the 1st thing they would want to do with this; after they could explore other frequencies).

Question: Will range be tested?

Answer: We will test the range, but we will not be evaluating based on range.

Questions: What are the evaluation guidelines?

We are looking at the mount, is it easily put on and taken off, well-constructed, is there an efficient volume to weight, ratio to message transmitted, configuration of the compute, amplifier, swap analysis; were you able to achieve the essential elements of what we described. Requirements, how easy to load

pre-recorded broadcast, software defined radio. What innovative ideas did you come up with? Also looking at your video presentation. Video and testing of prototype will generate score; night of OpenWERX (Sept 7), judges will be able to ask questions of the teams, which will be the final input before final decision.

Question: Do we submit just the module?

Answer: If your interface between payload and Phantom 4 could snap on to any DJI4, just send payloads and interface; if you don't have to do extra modifications, don't send the drone; if the drone is customized, then send the drone. If you send prototype and do not win 1st, 2nd, or 3rd you will receive all of your gear back. We will be temporarily keeping prototypes to decide with SOCOM stakeholders what the following steps will be.

Question: What range of frequencies are we targeting?

Answer: FM Spectrum; ideally, they go up to 3 gigs; don't go to the AM bandwidth, because you would need some sort of converter; hack RF; simply put, software defined radio and FM frequencies

Note: 1.75 pounds, includes the module and mount; 2 pounds of payload on DJI4 is the max to operate, 1.75 gives some space to safely function

Question: Is the battery of the module self-contained or removeable?

Answer: Not defined, showcase creativity and make the choice, make sure to walk us through your reasoning

Question: Is the leaflet format single?

Answer: Dimensions 8.5"x5.5", should not be folded, however, they could be loosely rolled or curved, leaflet shouldn't roll up in a ball due to how it was stored

Question: Would it be possible to have a sample of a transmitter?

Answer: wiki.opendigitalradio.org ← example FM transmitter using GNU radio

Note: The reason the GNU radio is required is because the operators can see from the beginning the system was designed to be flexible/able to be adapted to different frequencies

Question: Are the teams expected to design all 3 mods?

Answer: Yes, as well as a universal connector to Phantom 4

Note: You do not have to customize everything from scratch, if you found something that fits all requirements (ex. premade software defined radio) feel free to use it. It would be totally feasible to accomplish this feat with things you could buy off of amazon with minimal engineering.

Question: Is everything supposed to be triggered by the LED light or could you use separate communication methods?

Answer: Existing controls are preferred to keep it simple; if you believe your way is superior, then try it, but it may be excessive. Show that your prototype can do the basic functions.

Question: Is everything submitted online?

Answer: Because this is OpenWERX, any of the code or the designs made need to be put on GitHub.
Requirements: do prototype, send video, and upload designs to GitHub.

Question: Does the FM broadcast have to be controlled after taking off?

Answer: It needs to be command triggered for FM broadcast to start; operator needs to activate FM transmitter when they chose with LED light.

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August 8

Question: I am using a DJI Phantom 2 for my modifications, but it is not mine so I will not be able to submit the DJI with my attachments. Is it okay that I am only sending the deck and accessories and not the drone itself?

Answer: We are using the DJI Phantom 4 as the primary drone, so all modifications must be able to work on the DJI 4. However, if the interface is still compatible with the DJI 4, then you do not need to send the drone itself.

Question: Do you want us to attach a wire to the LED controls on the Phantom or on the transition?

Answer: That is your call; do whichever you feel will better equip the DJI 4 for the task.

Refer to the OpenWERX slack channel for further information.

[Slack Channel](#)