# XDC_2 at Zappos HQ, Las Vegas, NV
## Racer Introduction

Hey FPV Pilot!

We are excited to provide you with this Pilot Brief for the XDC_2 at Zappos HQ in Las Vegas, NV. Inside is a lot of the information you will need to make your experience with us an enjoyable one, and hopefully an award-winning one as well!

We will be providing Ground Stations and using the RaceBand Spectrum of Channels to get as many in the air as possible. Final testing of the venue with the full course setup will be done prior to Thursday afternoon practice, and at that time, we will announce which channels (i.e. 1-8) and at what power rating (25mW or 200mW) we will be using. VTX will be provided to racers regardless, however, we will allow racer's to use their own equipment if it matches the power rating and is RaceBand compatible. Details are within this document on how to prepare your craft to become ImmersionRC Raceband Ready.

There is a possibility that we may be using 200mW and RaceBand or Traditional Channels; if you would like to wait until we finalize testing Wednesday evening with the full course before doing your craft prepwork, in case your own equipment matches our frequency and power assignments, that is a viable option. We will announce via all social media and email, plus will have an onsite soldering station.

Transponders will also be provided, however, if you have your own iLaps infra red transponder, you may use it, though don't mount it permanently yet as we won't know until the start which side to shoot the beam.

In preparation, please complete the Pilot Bio Questionnaire to provide pertinent information to the Race Director and our Marketing Team to help speed up and build up our event:

      **Google Form**: https://goo.gl/XuLY06 or http://jscully.tk/xdc

Any questions regarding the Racing Format, Rules, Technology, Regulations or Execution may be addressed to:
Joe Scully, Race Director
FPV Racing Events
scully@FPVracingevents.com
416.931.2502

Any questions regarding the Venue, Prizing, Accommodation may be addressed to:
Harrison Gale, CEO
XDC Racing
h@XDCracing.com
702.862.0707

See you on the Flight Line!

XDC_2

# XDC_2 at Zappos HQ, Las Vegas, NV
## Racer Schedule

**Thursday, January 7th**

| | | |
|---|---|---|
| 11a-11:30a | TBA | Zappos HQ Rotunda |
| **11a-12:00p** | **Pilot Registration Open** | **Zappos HQ Rotunda** |
| **12p-12:10p** | **Pilot Meeting** | **Zappos HQ Rotunda** |
| **12:10p-4p** | **Controlled Practice (All Craft)** | **Zappos HQ Rotunda** |
| 4:00p-4:30p | TBA | Zappos HQ Rotunda |
| 4:30p-5:00p | Battle Drones | Zappos HQ Rotunda |
| **5:00p-6:00p** | **GoPro Race Qualifier (1 Round)** | **Zappos HQ Rotunda** |
| 6:00p-6:15p | Battle Drones | Zappos HQ Rotunda |
| **6:15p-7:00p** | **GoPro Race Final (Top 16)** | **Zappos HQ Rotunda** |
| 7:00p-7:15p | Battle Drone Battle Royale | Zappos HQ Rotunda |
| 7:15p-7:45p | TBA | Zappos HQ Rotunda |

**Friday, January 8th**

| | | |
|---|---|---|
| 11a-11:30a | TBA | Zappos HQ Rotunda |
| **11a-12:00p** | **Pilot Registration Open** | **Zappos HQ Rotunda** |
| **12p-12:10p** | **Pilot Meeting** | **Zappos HQ Rotunda** |
| **12:10p-4p** | **Controlled Practice & Qualifier (4" Props)** | **Zappos HQ Rotunda** |
| 4:00p-4:30p | TBA | Zappos HQ Rotunda |
| 4:30p-5:00p | Battle Drones | Zappos HQ Rotunda |
| **5:00p-6:00p** | **Semi-Final Qualifier (4" Props)** | **Zappos HQ Rotunda** |
| 6:00p-6:15p | Battle Drones | Zappos HQ Rotunda |
| **6:15p-7:00p** | **4" Props Class Finale** | **Zappos HQ Rotunda** |
| 7:00p-7:15p | Battle Drone Battle Royale | Zappos HQ Rotunda |
| 7:15p-7:45p | TBA | Zappos HQ Rotunda |

**Saturday, January 9th**

| | | |
|---|---|---|
| 10a-11:30a | TBA | Zappos HQ Rotunda |
| **11a-12:00p** | **Pilot Registration Open** | **Zappos HQ Rotunda** |
| **12p-12:10p** | **Pilot Meeting** | **Zappos HQ Rotunda** |
| **12:10p-4p** | **Controlled Practice & Qualifier (Open Class)** | **Zappos HQ Rotunda** |
| 4:00p-4:30p | TBA | Zappos HQ Rotunda |
| 4:30p-5:00p | Battle Drones | Zappos HQ Rotunda |
| **5:00p-8:00p** | **Open Class Main Event** | **Zappos HQ Rotunda** |
| 8:00p-8:30p | Battle Drones Battle Royale | Zappos HQ Rotunda |
| 8:30p-9:00p | Surviving Battlebots take on the MegaBot | Zappos HQ Rotunda |

\* Note: subject to change, visit XDCracing.com

# XDC_2 at Zappos HQ, Las Vegas, NV
# Racer Host Hotel

The XDC has hooked-up AWESOME accommodation deals for you guys to stay in downtown Vegas, close to the venue, during the busiest weekend of the year (CES).

Our first accommodation partner is the City Center Motel -- they've agreed to hold a large block of rooms for us to turn their motel into the Pilot's Olympic Village of drone racing. Theres a sweet outdoor courtyard and unfinished steel structure and the more pilots we can get staying there, the more fun we're all going to have. If you call in the next week and say that you're coming for the XDC event, they'll give you ~50% off (rooms will be $40/night -- this is the busiest travel week in Las Vegas, so this is actually a steal). The rooms are nice, albeit not fancy, but they all have their own fridge / desk to set up your repair station. Give them a call (702) 382-4766

If you're coming with your family/would rather have a casino downstairs/ are looking for something a bit swankier-- the Plaza Hotel is our other official travel partner. These rooms will be a bit more expensive. They are slightly closer to the venue and right next to the amazing and iconic Fremont Street experience and have a lively party atmosphere inside. These guys are also big supporters of the XDC and we would love to have you guys staying there. Give them a ring at (800) 634-6575

Can't wait to see you all in Vegas!

**Address:** 700 Fremont St, Las Vegas, NV 89101, United States

**Phone:**+1 702-382-4766

**Preface**

Xtreme Drone Circuit and FPV Racing Events want to ensure a SAFE and Fun Experience
All participants and spectators must be aware of and adhere to the following regulations for RACEDAY.

**ALL ATTENDEES:**

1. Do Not Enter the Racing area (designated netting/cones) until the Session/Heat/Race has expired!
2. Course will only be open between heats for less than 3 minutes.
3. Be Aware of All Restrooms and Fire Extinguishers.
4. Do not fly or power-up any object to be controlled remotely without approval from the Race Director.  Hovering in the pits (with VTX Disconnected) must be done safely, and not exceeding a 5' distance from the Pilot and 5' distance from the ground.
5. Do not enter the Flight Line unless it is your time to race, prepare to stage (mount equipment the race prior to yours) or spot.  Only registered pilots may enter the Flight Line during these timeframes.
6. If you are injured, please immediately bring it to the attention of the Race Director.

**RACE FORMAT:**

1. Advertised/Posted Formats and schedules may be modified at the discretion of the Race Director.  To contribute to a "full program," ensure that you are prompt and punctual before, during and after your heat(s), and aware of what race is on the track.
2. Open Practice: Participating Racers will be assigned heats.  Each heat will be 3 minutes in duration.  Each pilot's fastest individual lap time in practice will be used to seed qualifying heat placement.
3. Qualifying: may consist of up-to 3 qualifying rounds while "Rocket Round" will be used to select each pilot's fastest Qualifying Time.  Qualifying Time will be based on the Fastest 5 consecutive laps during the 3-minutes allotted (# of Laps recorded within the designated time period, i.e. 5 laps in 1:10.609).
4. When more than one Championship Main is on the schedule, there should be transfer or bump-up positions.  These will be announced as final between qualifying and the mains. (i.e. Top 1 from the B-main instantly qualify for the A-main).  # of Qualifiers to the Finale will be announced prior to the Qualifying Round, however, schedule may dictate adjustment.
5. Mains will also be a set # of laps in duration, most likely 5.  When the leader crosses onto their final lap, everyone crosses onto their final lap.
6. RaceDay Programming is designed to afford as even of an amount of flight time per pilot as possible, regardless of skill.
7. # of Pilots in heats may vary from Practice through Qualifiers through Mains.  These will be decided and deemed official prior to each segment commencing, and will be decided upon by the Race Director considering track layout, time remaining on schedule and technical limitations.

**CLASSIFICATION:**
1. GoPro Race (requirements: 1080p @ 60fps capture, on multi-rotor flown FPV)
2. 4" Props Class
3. Open (6" Propellers maximum)

**ALL PILOTS:**
1. Pit Preference is awarded on a first-come, first serve basis
2. ANY VTX OFF THE TRACK FROM THE START OF REGISTRATION UNTIL PODIUM AWARDS IS NOT PERMITTED.
3. ANY DAMAGE CAUSED TO A "LOST" CRAFT OR CAUSED BY THAT CRAFT WILL BE THE LIABILITY OF THE PERSON NOT ADHERING TO THE ABOVE RULE. (ALL CRAFT ARE TO USE ASSIGNED CHANNELS ONLY, AT THE SCHEDULED TIME/HEAT.)
4. Intermittent opportunities between sessions/heats/mains may be available for rapid testing of your VTX. This is to be requested of the Flight Line Director, who will provide a test VTX and permission, once the Race Director has been notified.
5. VTX and Transponders will be provided by management. However, if pilots have their own compatible VTX and Transponders, they MAY be used, at the discretion of the Race Director. VTX must be capable of being tuned to an assigned frequency (RaceBand spectrum most likely / Traditional Fat Shark Channels small possibility, based on pre-event tests), and be at the identical power output as the management's VTX system (25mW or 200mW based on testing). Any Racer with exceeding the power rating will immediately be removed from the premises.
6. Ensure that your failsafe mode is "down," not "hover."
7. Be Knowledgeable and READY! Be next to the Flight Line the race BEFORE YOURS for VTX/Transponder mounting. Once your race heat is called to the grid, you will forfeit your heat if you are not ready.
8. As the race before yours is staging and running, place the VTX and Transponder on your craft.
9. Be gentle with all provided equipment (VTX/Transponder). Damage results in liability for replacement.
10. You will be assigned a NUMBER before your session/heat/race. This correlates to VTX Channel and Transponder provided by Race Management. Personal Transponders (i-Laps Drone Model may be used, but Race Management is not responsible for any personal transponder malfunctions).
11. You may be directed to carry your craft through the Finish Gate to check-in transponder. This will be as your heat is called to the Grid.
12. DO NOT POWER UP VIDEO UNTIL DIRECTED BY FLIGHT LINE DIRECTOR OR RACE DIRECTOR. THIS WILL BE IMMEDIATELY BEFORE YOUR RACE.
13. Place your craft on the take-off zone when directed. Power up video on the take-off zone only. Go to assigned position in Flight Line.
14. Tone starts will be in place.
15. Do Not Do Extra Laps. Do not "freestyle" at the end of your race.

16. Do not fly your craft anywhere but on the race track or designated line of site flying areas.
17. A 30' Ceiling is in place above the highest obstacle. Do not exceed it. Failure to do so will result in Disqualification.
18. **Keep your LiPo in a LiPo Sack if under cover or indoors. Failure to do so will result in Disqualification.**
19. Missed gates result in 10-second penalties.
20. Do not enter the raceway following the start of the race, unless approved by the Flight Line Director or Race Director.
21. A "line flipper" may be provided for any racers that don't make it off the starting grid. If provided during a practice or qualifying heat, it must be carried forward for all practice or qualifying heats. Mains may be on a heat-by-heat basis if there is only one round of Mains.
22. Once you are done racing and the race is over, retrieve your craft, gently remove VTX/Transponder, and return to your assigned seat to spot the next race. You will have 3 minutes or less to return to your seat. All Pilots are required to Spot. Failure to do so will result in penalties.
23. Important Commands:
    1. "Arm Your Quads" - starting race in 10 seconds or less.
    2. "On the tone in less than 5" - command prior to a tone start.
    3. "3, 2, 1, Go" - in lieu of a tone start - RARELY USED.
    4. "Stop, Drop or Hover" - immediately cease forward direction. Save your craft as best as possible.
24. Proper sportsmanship and conduct is to be exemplified. Examples of poor conduct would include, but are not limited to: affecting another Pilot's Race or Equipment by speech or any sort of tampering or aggressive behavior.
25. Penalties - First Time May Be a Warning unless stated otherwise, 2nd: Lose your fastest qualifier / podium placing, 3rd: Exit
26. No harassment of officials, pilots, sponsors or spectators will be tolerated.
27. An AMA (Academy of Model Aeronautics) Membership is required, and members must adhere to rules and regulations set forth by the AMA.

**ALL SPOTTERS:**
1. Every Pilot is required to spot. Each pilot will spot the same Grid/Channel/Transponder assignment they ran on, the heat following (i.e. Run on Channel #2, Spot on Channel #2 the next race. The Final Race of program spots Race #1).
2. It is every Pilot's responsibility to ensure that their spotting responsibility is covered. If you are unable to spot, provide a spotter in your place. If the Race Officials have to supply a spotter in your absence, you WILL be penalized.
3. Spotters will count missed gates (via tally) for their assigned pilot.
4. Following the heat, the Spotter will inform the Racer and the Flight Line Director of any penalties.

5. Any grievances will be settled by the Flight Line Director and/or Race Director.
    1. A DVR Video Replay system is supplied by management and the Racer may request a Video Review via the Video Review Process.
    2. The Racer will notify the Flight Line Director and/or Race Director of his request, and provide a $50 Video Review Fee.
    3. The Race Director will inform the Racer of the time the Video Review will take place.
    4. The Flight Line Director and/or Race Director will review the race, and inform the Racer of their decision. If the Video Review is deemed in the Racers Favor, the $50 Video Review Fee is returned to the Racer.
6. Any discrepancy regarding the printed results are to be brought to the Race Director's attention via written claim.
7. Results will be deemed final following 30 minutes of posting.

**TIMING AND SCORING:**
1. A Transponder System will be in place where available. Alternatively a Hand Scored Spotter System (via software) will be used, as an additional responsibility of the spotter.
2. Racers may use their own Transponder. This number must be provided to the Race Director at Registration. Race Management is not responsible for any malfunction of a Pilot's personal transponders.
3. Spotters are to track missed gates, to be recorded as 10 second penalties before results are final.

**RE-RACES, RE-STARTS:**
1. If a Racer is fouled due to reasons outside of their control (lost video, crashed into at the start of a race, major scoring discrepancy, etc.) the Flight Line Director and/or Race Director may offer a Re-Race.
2. If a race is started and was not deemed clean or fair (i.e. lost video for a number of racers, object on the track, etc.), a Re-Start may be called by the Race Director.
3. Re-Starts will either happen right away, only following a majority vote of the racers in that heat, or as late as possible in the program (i.e. the end of the round, or immediately before the next-higher main).
4. Re-Races will be run at the end of the round. In Practice or Qualifying, these may be individual pilots from all classes combined.

**Race Management Supplied Transponder Installation and Use:**
An iLaps Drone Model Transponder will be supplied by Race Management. Please mount it in a safe place on your craft, and attach it to an open 5V Channel (it contains a standard 3-wire prong adapter). Alternatively, if you do not have an open 5V Channel, attaching to a second LiPo and using spare pins (Pin-to-Pin) is acceptable. Personal iLap compatible transponders are permitted, must be recorded with the Race Director, and management is not responsible for any malfunctions of personal equipment.

**Race Management Supplied VTX Installation and Use:**
Pilots operating FPV transmitters at this event will be handed Immersion Raceband FPV transmitters operating on 5.8Ghz band allocated for amateur radio use. Pilots DO NOT have the right to change frequencies, **neither to use any transmission devices other than the VTX's handed to them by the VTX Director, unless previously approved by VTX/Flight Line or Race Directors**. All other video transmitters will be grounded or impounded impounded for the duration of the event. The only frequencies used in the race will be the 5.8Ghz Raceband frequencies, on 25mW or 250mW transmitters (which of these two will be determined later. The VTX Director is responsible for making sure the Raceband transmitters operate within the frequencies allocated and that these do not exceed the power levels of the allocated/allowed.

**Race setup**
There will be a total of 8 flying stations. During the test races we might decide to roll less than 8 pilots in a race to allow better frequency separation in case we detect issues with interferences or certain frequencies not performing well. The 8 flight stations will be set up before the race, the pilots can bring their own goggles to connect it to the diversity receivers at each flight station.
Each of the 8 stations will have its own frequency allocated and should not be changed throughout the race. The frequencies will be as follows:

| Station 1 | Station 2 | Station 3 | Station 4 | Station 5 | Station 6 | Station 7 | Station 8 |
|---|---|---|---|---|---|---|---|
| 5658MHz RH | 5695MHz LH | 5732Mhz RH | 5769Mhz LH | 5806MHz RH | 5843MHz LH | 5880MHz RH | 5917MHz LH |

For best performance, the transmission polarity will be alternated from one station to the next.
These frequencies will be used exclusively for racing at this event.

| 4-Up Racing | Fatshark/Immersion | DJI/FoxTech | Boscam A | Boscam B | Raceband |
|---|---|---|---|---|---|
| Channel A | 5740 Ch1 | | 5725 Ch8 | 5733 Ch1 | 5732 Ch 3 |
| Channel B | 5780 Ch3 | | 5765 Ch6 | 5771 Ch3 | 5769 Ch 4 |
| Channel C | 5820 Ch5 | | 5805 Ch4 | 5809 Ch5 | 5806 Ch 5 |
| Channel D | 5860 Ch7 | | 5845 Ch2 | 5847 Ch7 | 5917 Ch 8 |
| Channel E | | 5645 Ch4 | | | |

# XDC_2 at Zappos HQ, Las Vegas, NV
## VTX / Transponder Mounting Continued

**Goggle Requirements**

Our recommendation is that every pilot will need to furnish their own goggles / screen for racing. The video feed provided will be through a standard Fatshark/Immersion AV cable terminated in a 4 position 3.5mm jack. The pinout for attaching your own goggles (if not Fatshark) is displayed below: If your goggles receive a composite (yellow video, red audio left, white audio right) input, please provide your own cable, as the Immersion RC Raceband Station also offers a Female Composite Out.

**ImmersionRC/FatShark receivers**

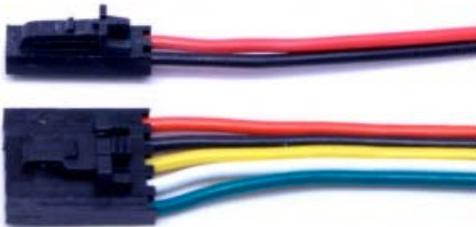ImmersionRC receivers, including the Unos, Duos and the Fat Shark LCD glasses, all use a standard 4-pole 3,5mm jack.

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Fat Shark, Archos, Gigabeat, Creative Zen Vision Series, Cown iAudio, Apple iBook | Ground | Video | Right | Left |

**Transmitter Pinout Requirements:**

To attach the transmitter provided by the VTX director to your racing quad, standard ImmersionRC type 5 position Molex type connectors will be used, just like in the picture below. The cable connector set is composed of 2 different connectors.

**One is a 2 position Molex connector** supplying power to the video transmitter (VTX). The Black is ground (battery negative) and the red is the positive voltage coming from your battery, up to 16V. **The second is a 5 position connector** and the signal pins are as follows: RED – +5V out from the transmitter, supplying power to the camera, BLACK – ground connection, YELLOW – Video signal coming from the camera, WHITE – Audio left, GREEN – Audio right. Depending on what type of camera you are using the schematic of connecting the camera will change.

**For 5V Cameras:**

If you use 5V cameras from Fatshark – or with cables compatible with them, you can just simply plug those in to the transmitter. In this case your camera already comes with a connector matching the transmitter. For any other 5V cameras, if you do not have one, you can purchase an Immersion RC wIre-set from here and wire it up yo your camera as the signal lines describe below:



From the 5 Pin connector: You will need the **RED** – 5V to power your camera, **BLACK** – ground to the camera, **YELLOW** – video signal from your camera. You can ignore the audio signals if you do not have them.

From the 2 Pin connector: You will need to wire up the **RED** to your battery positive lead and the **BLACK** to your battery ground lead – with this supplying battery power to the VTX.

**For 12V cameras:**

In case you use a 12V camera for your setup, you cannot use the RED (+5V) supply line form the transmitter to power your camera. In this case your camera will have to be powered separately, and you only need to bring in the Video and Ground signal to the raceband VTX:



As you can see the camera power is not even represented on this image due to the fact that it is separately handled on your own installation. On the 5 pin Molex connector the only two signal lines required are the Video out from your camera (**YELLOW**) and the ground (**BLACK**). On the two pin connector the **RED** is connected to your battery positive lead and the **BLACK** is connected to your battery ground.

All transmitters will be provided with strong Velcro strips attached, and mating patches will be provided for each quads.

Looking forward to seeing you at XDC_2 in the First-Person!

*** END TRANSMISSION ***