

Q&A

VEXU 2021-2022: Tipping Point

Welcome to the official VEX Robotics Competition Question & Answer system, where all registered teams have the opportunity to ask for official rules interpretations and clarifications. This Q&A system is the only source for official VEX U Tipping Point rules clarifications, and the clarifications made here from the Game Design Committee (GDC) are considered as official and binding as the written [Game Manual](#) or the official [VEX U Appendix C](#) itself.

Please review the [Q&A Usage Guidelines](#) before posting. This system is only intended for specific VEXU Tipping Point rules questions.

- For event, registration, or other competition support questions, please contact your [REC Foundation Manager](#).
- For VEX technical support, contact support@vex.com or sales@vex.com.
- For game questions, suggestions, or concerns outside of specific and official rules questions, contact GDC@vex.com.

Using VexAI Robots in the VexU Competition

R1

Can a collegiate VexAI team also register as a VexU team to compete in both competitions? This would seem to violate <R1> section d, since it states that a robot may not compete under multiple team numbers. But the spirit of the rule seems to be to prevent multiple teams/organizations from sharing a robot, not to prevent one team from competing in both VexU and VexAI.

Answered by committee

Yes, the same group of Students may register as both a VEX U Team and a collegiate VAIC Team. Yes, they may use the same Robot for each competition (provided that no other Robot rules are violated in either one).

R1 is intended to apply to Teams within the same REC Foundation competition platform / grade level. In a tournament, a VEX U Team and a VAIC Team would never share the same field, Skills ranking, Alliance selection, etc. (of course, the Robot cannot be used in multiple programs by separate groups of Students, since that Robot would not represent the skill level of both Team(s), i.e. would be in violation of rule G6)

ESD Protection for motor ports

This question pertains to the usage of a simple ESD (Electrostatic Discharge) board that was designed by the VEXU team BLRS to save V5 ports from ESD. The device is as simple as a couple of diodes connected to the communication lines to prevent ESD and in no way alters the performance of any of the devices it is connected to.

www.vexforum.com/t/v5-esd-protection-board-revision-2-save-your-v5-ports/91200

By the rules that have already been placed in the manual, this board or anything like it can be used on any non-motor ports to protect from ESD through the definition of additional electronics and <VUR10a>. However, as of right now, any port being used for a motor is at risk from static due to <VUR10b>. With many VEXU teams using almost every port available on the V5 brain, the risk of a port being blown is very high causing a full replacement of a V5 brain being necessary if such a thing happens. With the current out of stock brain, a replacement is very unlikely to be quick which would ruin many teams as a brain is no longer able to be used on a robot due to too many ports being dead.

The VEXU community was wondering if it would be possible to allow this simple board or anything like it be made legal for competition use?

Additional Electronics - Any sensor, processor, or other electronic component used in Robot construction, and connected to the V5 Robot Brain, that is not sold by VEX Robotics. Examples could include both commercially available devices (e.g. Raspberry Pi) or custom devices designed and fabricated by the Team. See for more details. <VUR10> There is no restriction on sensors and other additional electronics that Robots may use for sensing and processing, except as follows: a. Sensors and electronics MUST be connected to the V5 Robot Brain via any of the externally accessible ports (i.e. without any modification to the microcontroller). A sensor may be connected to a processing unit which then connects to the V5 Robot Brain. b. Sensors and electronics CANNOT directly electrically interface with VEX motors or solenoids. c. The additional sensors and electronics may only receive power from any of the following: i. Directly from the V5 Robot Brain via any externally accessible port. ii. From an additional lithium ion, lithium iron or nickel metal hydride battery pack (only one (1) additional battery can be used for sensor/processing power). Battery packs must operate at a maximum of 12 volts nominal. d. Only the V5 Battery can power the V5 Brain. e. Additional Electronics which include a low-powered motor as an integral part of their primary sensing / processing function, such as an external processor's cooling fan or a spinning sensor, are permissible. i. Standalone motors which serve no additional sensing or processing functionality (e.g. using a commercially-available brushless motor in a drivetrain) are not considered legal Additional Electronics, and would be considered a violation of <VUR9>.

Thank you for your consideration.

Answered by committee

This device violates the following point of VUR10, and is therefore not legal for use in official competitions.

- b. Sensors and electronics CANNOT directly electrically interface with VEX motors or solenoids