RCJ 2024 Communication Module

What / Why it is?

To make RCJ Soccer SuperTeam games more manageable for referees and to bring a simple and robust way of robot to robot / robot to referee communication, we would like to introduce these modules. This module does not count to the weight limit.

How to power it?

The required way to power these modules is to connect GND to the negative (-) of your battery and BAT+ to the positive (+) of your battery without having any kind of switch between those connections when battery voltage is between 5.3 V and 25V.
If your battery voltage is not between 5.3 V and 25V or there is some engineering reason why the first option is not realistic, you can use a 3V3 pin to provide 3.3V. The module must be able to draw at least 500mA at all times.
This module needs to be powered at all times during the match, even when the robot is not on the field (out of bounds, damage), in order to be able to keep a stable communication connection.

How to read the start/stop signal?

To get start/stop information one can easily read from pins OUT1 or OUT2 where 3.3V = GO and 0V = STOP. The robot is required to respond to this stop/go information at all times for the duration of the game.

How to use it for communication between robots?

You can use RX, TX for wireless communication between robots using UART. Voltage of UART logic can be chosen using LOGV pin by connecting required voltage (3.3V - 5.5 V). Default voltage is 3.3V.
You can also choose a communication channel by using A0,A1 pins. Overall, 4 channels are available (00, 01, 10, 11). Those pins can accept both 3.3V and 5V logic voltage.

How to put robots back in the game?

The module is equipped with a display that shows a countdown for the duration of the Robot's penalty. Teams are allowed to put robots back in the game according to rules when penalty time's up on the display.

Not working?

If you have problems or questions do not hesitate to open a GitHub issue, post on the forum, ask on the RoboCupJunior Discord server or ask directly at the competition.