

A glowing lightbulb with a circuit board overlay. The lightbulb is the central focus, emitting a warm, golden light. The background is a soft, light blue gradient. Overlaid on the lightbulb and extending towards the left and right edges are white circuit board traces, including lines and small circles representing nodes or components. The overall aesthetic is clean, modern, and technical.

INSPECTION התמודדות עם ובעיות תקשורת



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במה נעסוק

- ראשית, מה זה אינספקשן ואיך עוברים אותו בשלום.
- שנית, סיבות לבעיות תקשורת והתמודדות איתם בסדנה ובתחרות.
- לבסוף, נעשה דיון ונפרט על כל מיני עניינים שקשורים לנושאים האלה.



אינספקשן בשני מילים

- תהליך בתחילת התחרות שבודק שהרובוט מתפקד ובטיחותי.
- מורכב משני חלקים, אחד הבודק שהרובוט בטוח והשני בודק שהתקשורת תקינה.
- חייבים לעבור את שני החלקים של האינספקשן כדי להתחרות!

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graph TD; A[Inspection] --> B[Field Inspection]; A --> C[Robot Inspection];
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Inspection

**Field
Inspection**

**Robot
Inspection**

The image features a dark blue background with white, stylized circuit board traces in the corners. These traces consist of straight lines and small circles, resembling electronic components or connections. The central focus is the Hebrew text "באחריותכם לעבור אינספקשן" written in a clean, white, sans-serif font.

באחריותכם לעבור אינספקשן

רובוט אינספקשן

- אין בעיות בטיחות.
- הרובוט בגודל ומשקל תקין.
- כל שאר הרכיבים תקינים (מנועים חוקיים, דגלים, וכך הלאה...).

פילד אינספקשן

- כל ההגדרות ב-RC ו-DS הן תקינות.
- התקשורת בין ה-RC ו-DS מתנהלת כנדרש.
- הרובוט עובר בין מצבים ומתחיל ומפסיק כנדרש.

הכל נמצא ברשת וידוע מראש



Field Inspection Checklist

Team Number: _____

Field Inspection Status (circle): **PASS / FAIL**

✓	Drive Team Members Present	Rule #	
	Coach	<T8>	
	Driver 1 (required); Driver 2 (optional); Human Player (optional)	<T8>	
✓	Driver Station and Robot Controller Hardware Rules	Rule #	
	Driver Station consists only of one Android device (Circle): ZTE Speed, Motorola Moto G 2 nd Generation, Motorola Moto G 3 rd Generation, Motorola Moto G4 Play, Motorola Moto G5, Motorola G5 Plus, Motorola Moto E4, Motorola Moto E5 Play, Google Nexus 5, or Samsung Galaxy S5.	<RE06> <RE16>a	
	Robot Controller consists only of one Android device (Circle): ZTE Speed, Motorola Moto G 2 nd Generation, Motorola Moto G 3 rd Generation, Motorola Moto G4 Play, Motorola Moto G5, Motorola G5 Plus, Motorola Moto E4, Motorola Moto E5 Play, Google Nexus 5, or Samsung Galaxy S5. The Android device's USB interface only connects to the Core Power Distribution Module, a REV Expansion Hub, or a USB hub.	<RE06>	
	Driver Station Android device USB interface is only connected to either a Mini USB to OTG cable or combination of cables connected to one USB Hub, or one gamepad.	<RE16>a&b	
	No more than one (1) optional Commercial Off The Shelf USB external battery connected to the USB hub is allowed.	<RE16>c	
	The Driver Station consists of no more than two of the allowed gamepads (Logitech F310 or Xbox 360 in any combination).	<RE16>a&d	
	The touch display screen of the Driver Station must be accessible and visible to field personnel.	<RE16>e	
DS	RC	Driver Station (DS) and Robot Controller (RC) Software Rules	Rule #
		Android operating system satisfies the requirements: ZTE Speed – version 4.4 or higher; Motorola Moto G4 Play, Motorola Moto G5, Motorola Moto G5 Plus, Motorola Moto E4, Motorola Moto E5 Play- version 7.0 or higher; all other allowed Android devices – version 6.0 or higher.	<RS03>
		The Android device is set to airplane mode, Wi-Fi is turned on, and Bluetooth is turned off.	<RS07>
		Robot is not connected to any local networks.	<RS10>
		Android device is named with the official team number followed by –DS or –RC as appropriate.	<RS01>
		Android Wi-Fi Direct device name does not include a newline character in the name.	
		All remembered Wi-Fi Direct Groups and Wi-Fi connections have been removed.	
		DS and RC apps are version 5.2 or higher and the DS and RC apps have the same version numbers.	<RS02>



Robot Inspection Checklist

Team Number: _____

Robot Inspection Status (circle): **PASS / FAIL**

Team	Insp.	Robot Size & Weight Inspection	Rule #
		Robot is presented at inspection with all mechanisms (including all components of each mechanism), configurations, and decorations that will be used on the Robot during the competition.	<I7>
		Separately test the Robot in all of its unique starting (pre-match setup) configurations. The Robot fits within the Sizing Tool without exerting undue force on the Sizing Tool sides and top.	<I7>a <RG02>
		Robot Motion Warning Label is attached if servo motors move during the Robot initialization.	<RG02>b(i)
		Robot weighs no more than 42 pounds (19.05kg). + 0.5 pound (0.23 kg) overage allowance.	<RG04>
✓	✓	General Robot Rules	Rule #
		Robot does not contain any components that could damage the Playing Field or other Robots.	<RG01>a&b
		Robot does not contain materials that are hazardous.	<RG01>c
		Robot poses no obvious unnecessary risk of entanglement.	<RG01>d
		Robot does not contain sharp edges or corners.	<RG01>e
		Robot does not contain animal-based, liquid, or gel materials.	<RG01>f&g
		Robot does not contain materials that would cause a delay of game if released.	<RG01>h
		Robot does not contain elements that electrically ground the Robot frame to the Playing Field.	<RG01>i
		Robot does not contain closed gas devices.	<RG01>j
		Robot does not contain hydraulic devices.	<RG01>k
		Alliance Markers are present and meet requirements.	<RG06>
		Team number is visible from at least 2 sides and meets requirements.	<RG05>
		Energy used by the Robot, (i.e., stored at the start of a Match), shall come only from approved sources.	<RG07>
		Robot is not capable of launching its own components.	<RG08>
✓	✓	Robot Mechanical Parts and Materials Rules	Rule #
		All components on the Robot are from allowable raw materials and Commercial Off The Shelf products.	<RM01> <RM02>
✓	✓	Robot Electrical Parts and Materials Rules	Rule #

קצת טיפים

הכל נמצא ברשת וידוע מראש



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SELF-INSPECT

ZTE-016

FTC Inspect: 1.0

Active Configuration: none

Network: active, disconnected
Robot Status: stopped, scanning for USB devices

Settings

Restart Robot

Configure Robot

Programming Mode

Self Inspect

About

Exit

Manufacturer: zte
Model: N9130
OS Version: 4.4.4
Battery Level: 80%
Airplane Mode: ✓
Bluetooth: Off
WiFi Enabled: ✓
WiFi Connected: Yes
WiFi Direct Name: ZTE-016
Apps Installed: ✓
Robot Controller: 2.35
Driver Station: X
ZTE Channel Changer: ✓

Software courtesy of Team HazMat
9277 & 10650

• זה שזה מסומן בירוק לא בהכרח

אומר שזה בסדר.

• לא מהווה תחליף לבדיקה

רשמית!

עצות כלליות

- רק ה-Game Manual והתשובות בפורומים אומרים מה נכון ומה לא.
- לראות שאתם בסדר שבוע וחודש מראש, לא יום לפני.
- לא ישר לעדכן תכנה, לחכות שבוע.

שאלות עד כה?

The image features a dark blue background with white decorative circuit-like lines in the corners. These lines consist of straight segments and small circles, resembling a stylized PCB or network diagram. The central text is in a clean, white, sans-serif font.

בעיות תקשורת בסדנה ובתחרות

מה עושים אם זה קורה בתחרות?



Control
Systems
Advisor



גורם רציני לבעיות תקשורת - ESD

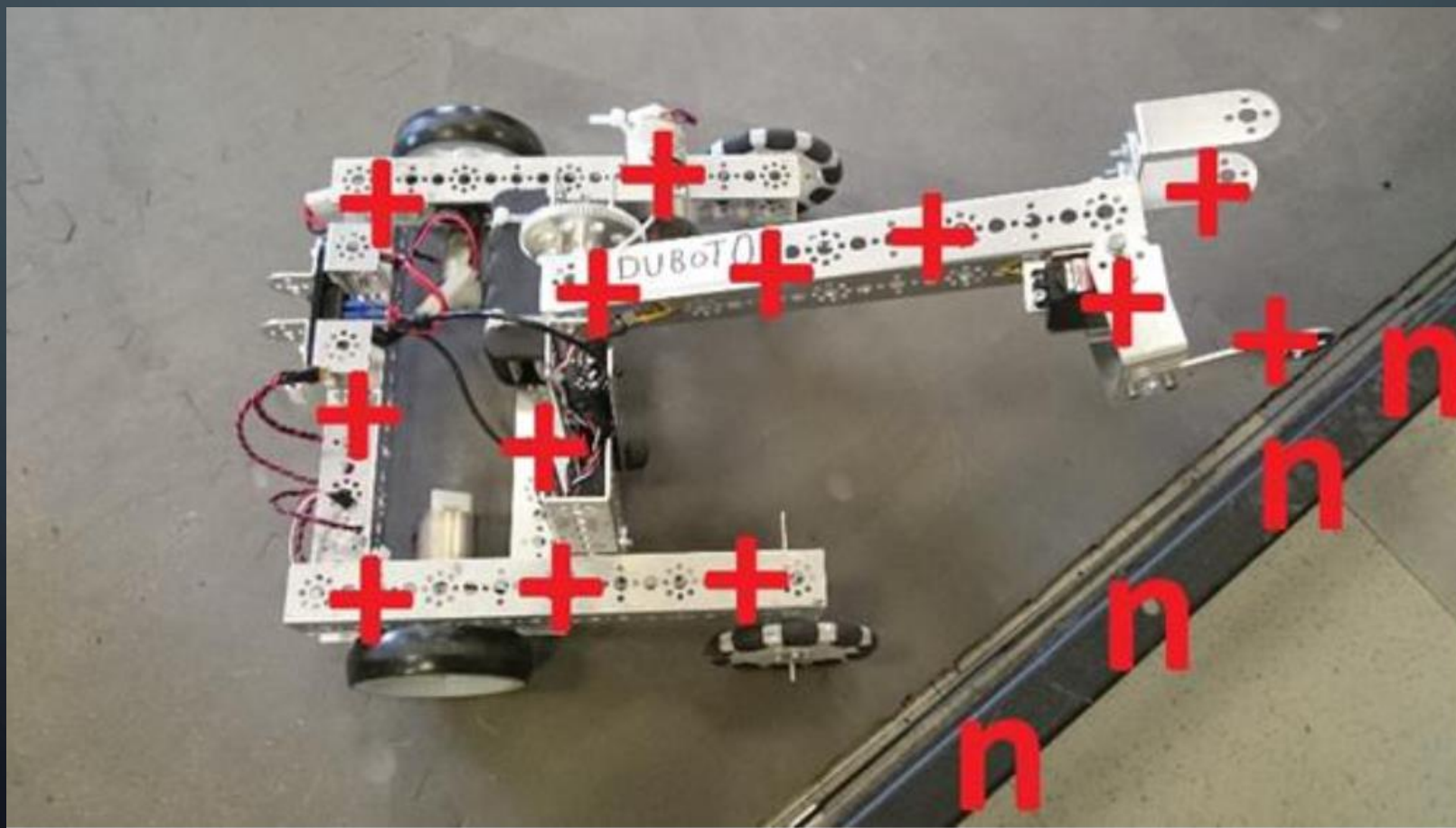


הכל נמצא ברשת וידוע מראש

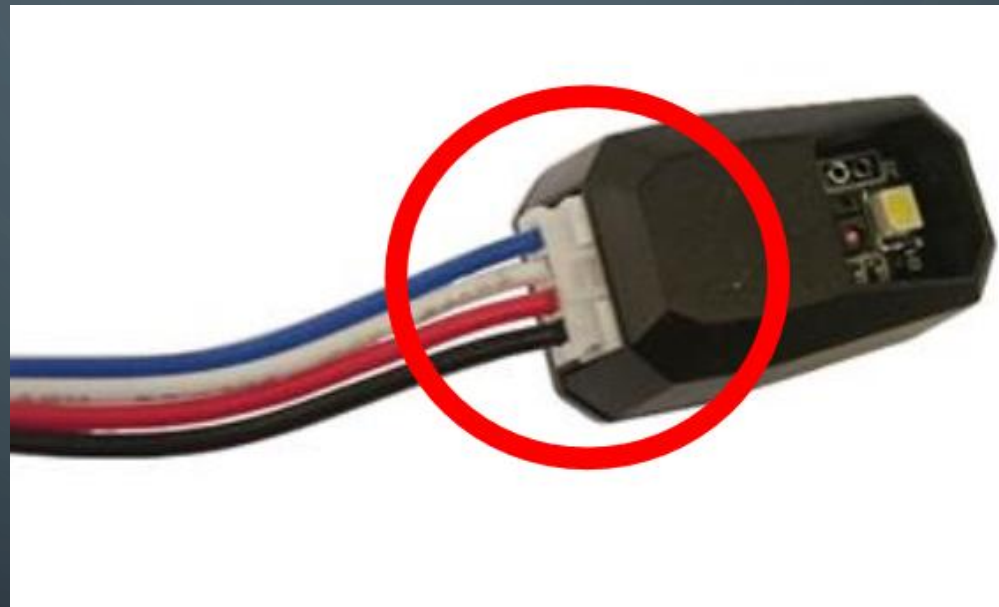
FTC Github Wiki - **Managing Electrostatic Discharge Effects**

An Analysis of ESD Mitigation for the *FIRST* Tech Challenge
– Eric Chin

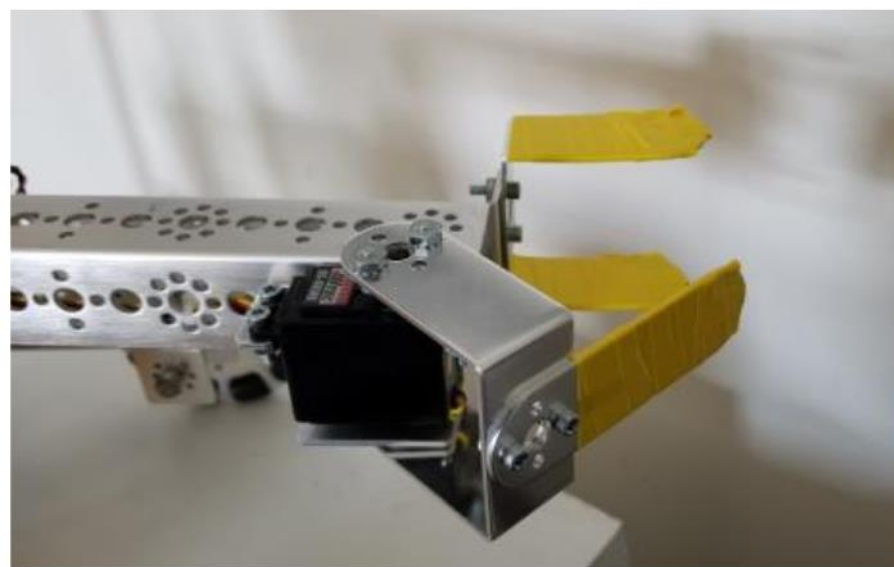
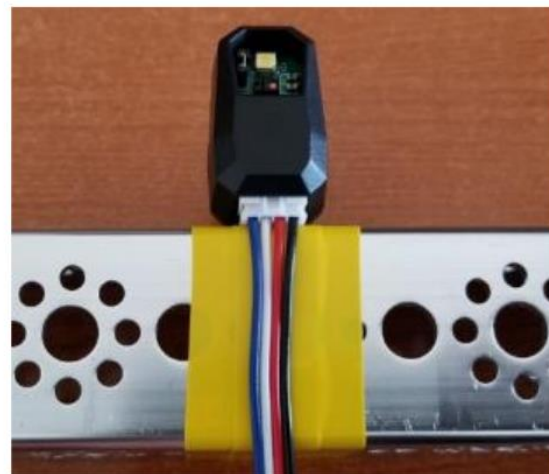
מה זה?



על מה זה משפיע?



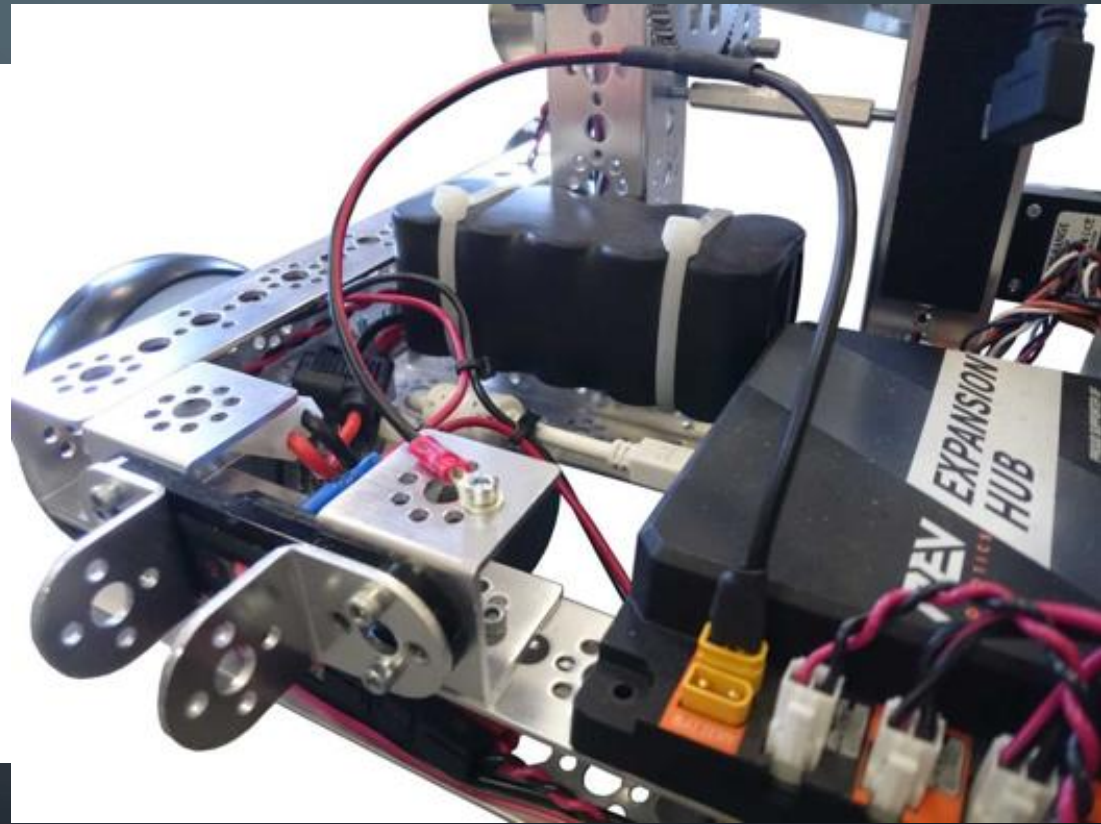
בידוד



Ferrite Chokes



Resistive Grounding Strap



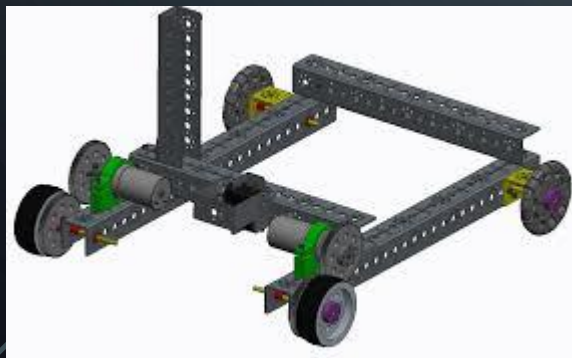
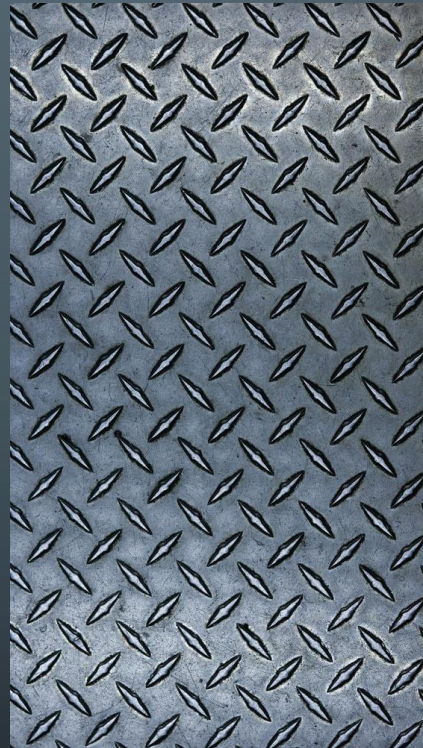
Staticide

נועד למארגני תחרות,
(אולי) אסור לשימוש
קבוצות.



שאלות עד כה?

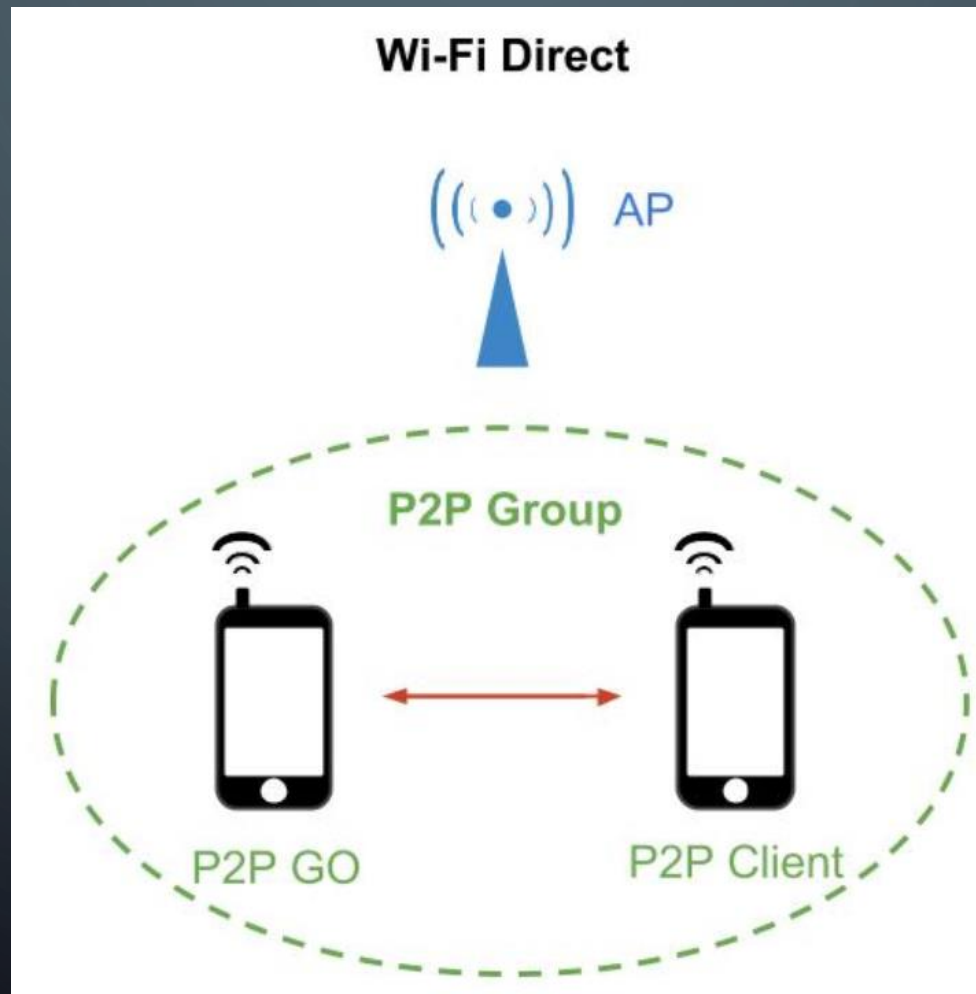
מיקום ה-RC



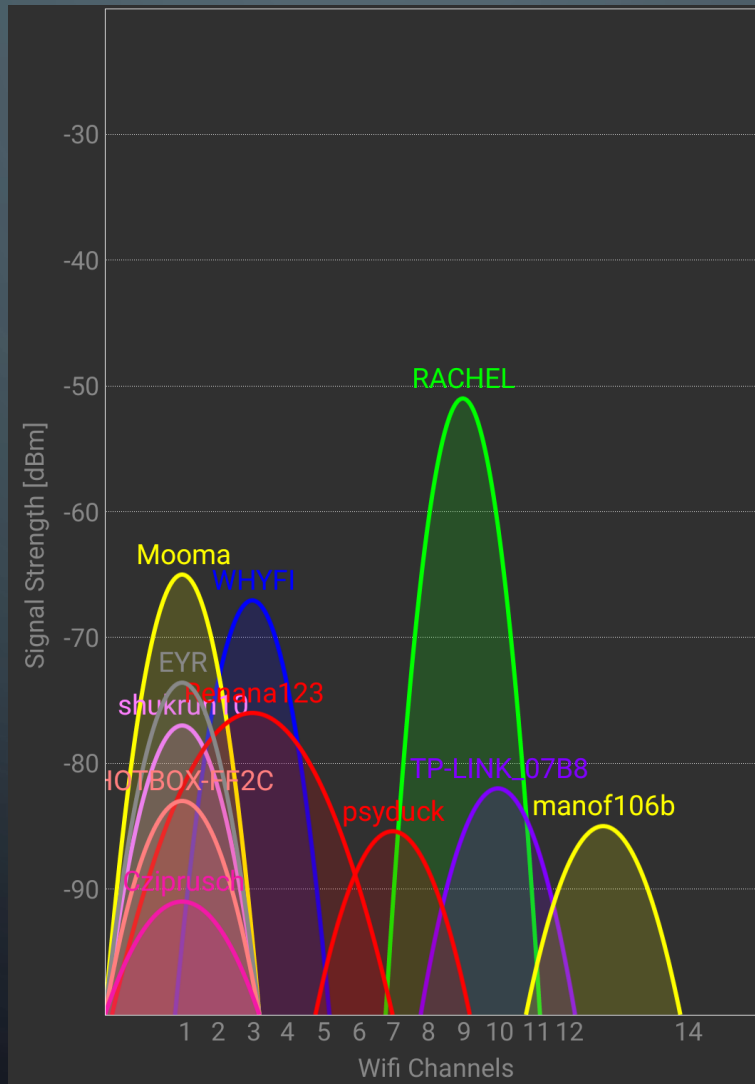
מה מחליש את הסיגנל?



WiFi Direct ובעיותיה



הבעיה בהוטספוטים



The image features a dark blue background with white, stylized circuit board traces in the corners. These traces consist of straight lines and small circles, resembling electronic components or connections. The traces are located in the top-left, top-right, bottom-left, and bottom-right corners, framing the central text.

איך לי תקשורת, מה אני עושה?

הבדיקות הפשוטות

- הרובוט והטלפונים דולקים? האפליקציות פתוחות?
- הטלפונים בעלי ההגדרות הנכונות? (מצב טיסה, Bluetooth כבוי...).
- האם לאפליקציות יש את אותה גרסא?

בעיות יותר קשות

• מה אם לא מצליחים לחבר בין הטלפונים כי יש המון רשתות באזור?

• הטלפונים נכבים ונדלקים כאשר מנסים לחבר ביניהם?

בעיות יותר קשות

- מה אם לא מצליחים לחבר בין הטלפונים כי יש המון רשתות באזור? לנסות לחבר ביניהם במקום מבודד.
- הטלפונים נכבים ונדלקים כאשר מנסים לחבר ביניהם? כמו קודם ולקרוא ל-CSA.

Faraday Cage / כלובי פאראדיי



The image features a dark blue background with white decorative elements resembling circuit board traces and nodes. These elements are located in the four corners of the frame. The central text is written in a clean, white, sans-serif font.

שאלות ואז דיון והעמקה