PCB
SCOPE OF WORK

Project Title:	ESP Extension Board	**Details Person**	MD YASIR UL HAQUE
Project #:	**SCREEN FREE**		SIGNED
Project Risk Level:	High		
Sponsor:	STEMROBO	**Manager**	AVINASH SIR
			SIGNED

Project Details

Input supply of PCB	12V DC

KIndly mention the voltages and current used or apply in this circuit

#	sensor	Input voltage
1	L298N MOTOR DRIVER	5V to 35 V Current rating:-2A
2	RC522 RFID 13.56MHZ	13-26mA / DC 3.3V
3	ESP-WROOM-32 WIFI Bluetooth Module	3.0V – 3.6V
4	1.3 Inch OLED DISPLAY	3.3 - 5V
5	DF PLAYER MINI MODULE	3.2–5.0 volts DC
6	NEOPIXEL RGB LED STRIP	5V
7	N20 Gear MOTOR 150 RPM	3 ~ 6

PROJECT PURPOSE

High-level narrative regarding what this project is expected to accomplish & its benefits

The Screen-Free Bot is designed to provide an interactive and engaging way for young students to learn coding fundamentals and basic mathematical operations without the need for a screen. By using RFID cards, students can program the bot to perform tasks and solve math problems in a tactile and visual way.

Sensor work

KIndly mention the voltages and current used or apply in this circuit and the work or the purpose of the sensor

sesnor	DESCRIPTION
1	L298N MOTOR DRIVER

	The L298N module can handle up to 2A of current per channel and supports motor voltage from 5V	
	Its built-in H-bridge design, which allows for both forward and reverse motor control.	
2	RC522 RFID 13.56MHZ	
	Operating at 13.56MHz, the RC522 RFID module is designed for low power consumption.	
	The RC522 module is affordable, making it a popular choice for RFID-based.	
3	ESP-WROOM-32 WIFI Bluetooth Module	
	The ESP32 DevKit V1 comes with integrated Wi-Fi and Bluetooth enabling easy and versatile wireless communication.	
	Dual-core 32-bit processor, which provides robust processing power for handling complex tasks, multitasking, and real-time operations efficiently,	
4	1.3 Inch OLED DISPLAY	
	OLED displays provide high contrast with deep blacks and bright whites because each pixel emits its own light.	
	OLED displays only light up the necessary pixels, they consume less power, especially when displaying darker content.	
5	DF PLAYER MINI MODULE	
	The module is very small, making it ideal for projects with limited space.	
	It also supports various control modes, including serial communication and AD key control.	
6	NEOPIXEL RGB LED STRIP	
	NeoPixel strip can be individually controlled for color and brightness, allowing for complex lighting effects, animations, and dynamic displays.	
7	N20 GERA MOTOR 150 RPM	
	N20 motor provides high torque, making it suitable for applications where space is limited but sufficient power is needed.	

DELIVERABLES

for Product DEsigner only

DELIVERABLE #	DELIVERABLE DESCRIPTION
1	22-08-2024
2	
3	DELIVERED AND SAVED ON 22-08-2024
4	