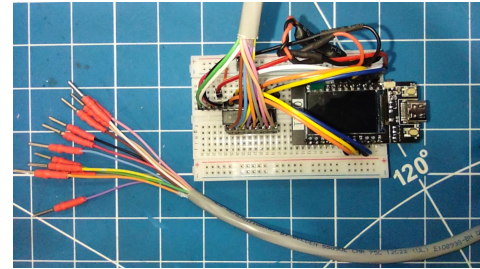
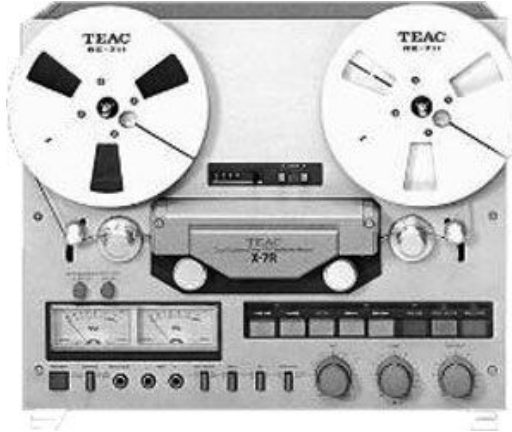
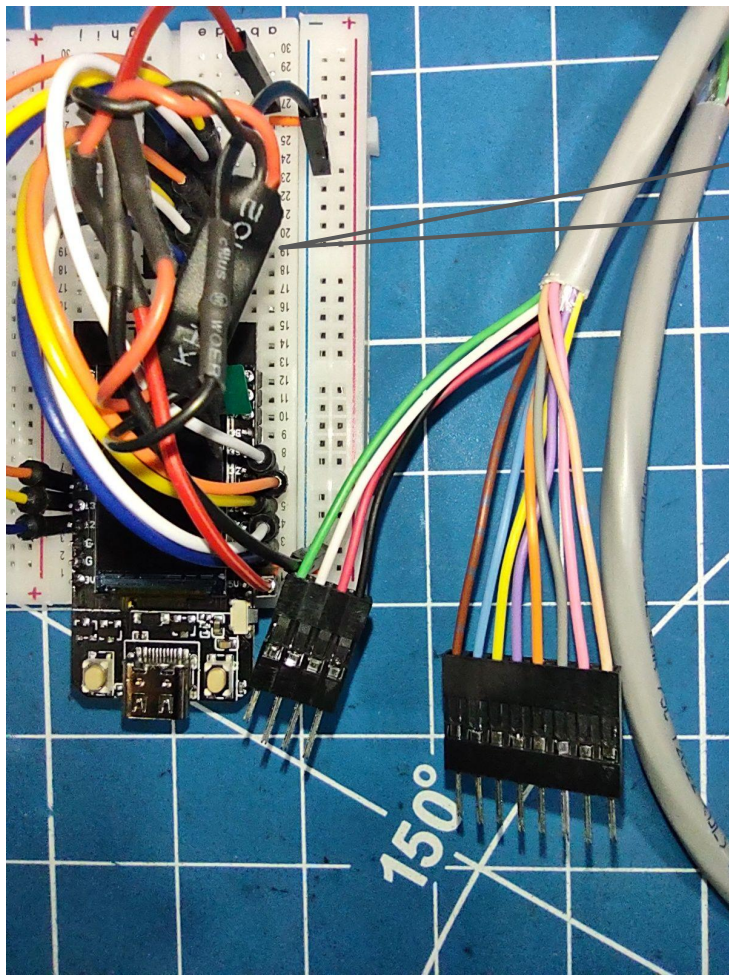


R2R Bluetooth Remote Using The LILYGO ESP32 T-Display

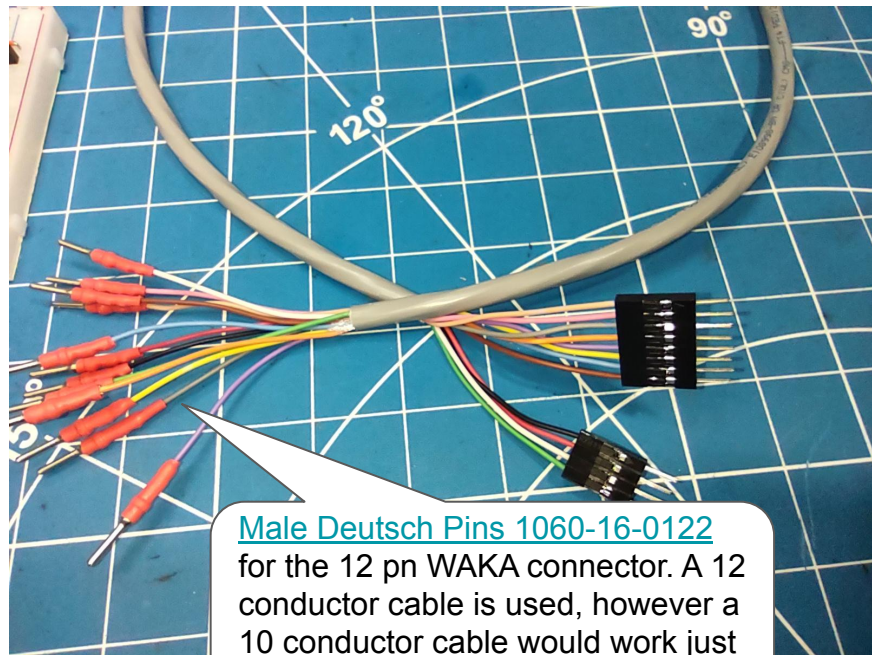


Description

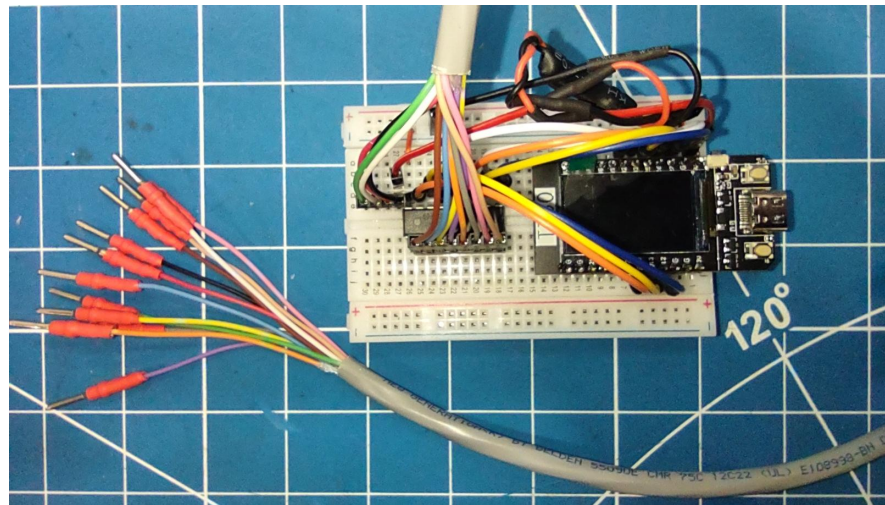
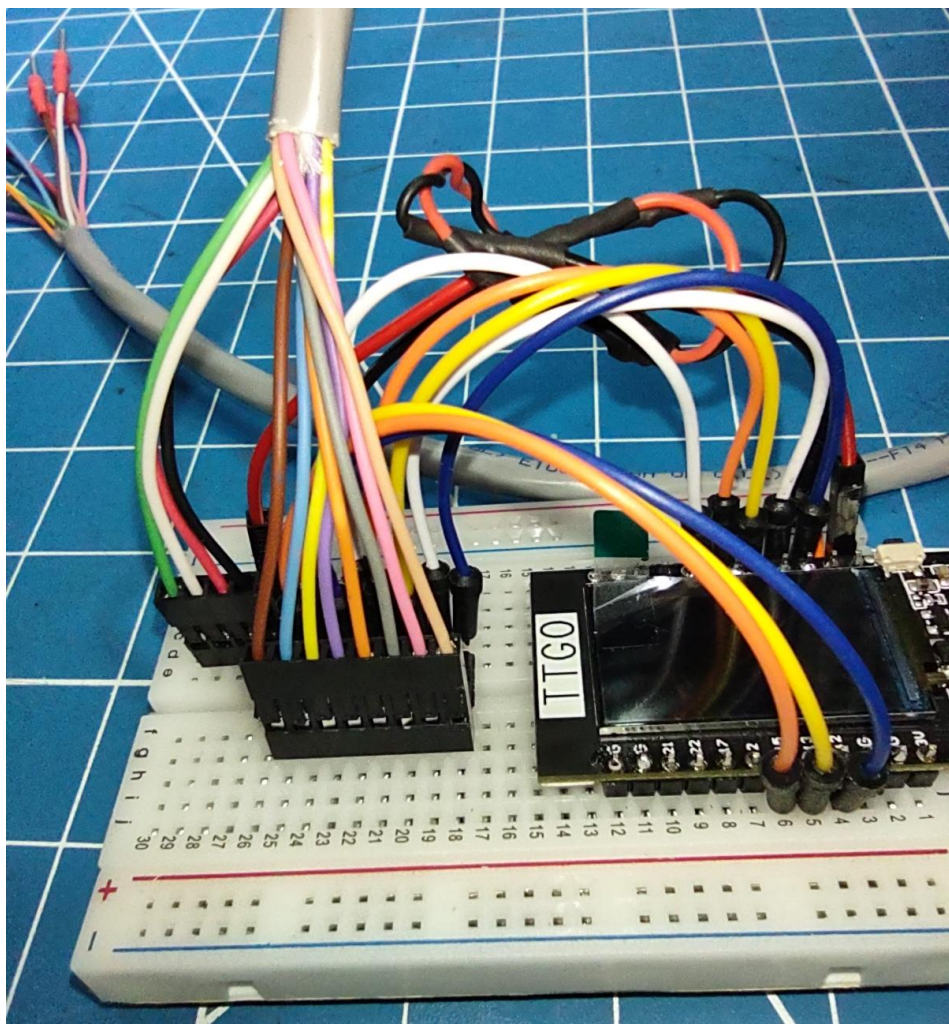
This projects make use of the [LilyGo TTGO T-Display](#) for a Bluetooth based remote control for vintage Teac X10R/X7R Reel to Reel (R2R) tape decks. Using custom firmware it places the TTGO board into classic Bluetooth mode allowing any PC/Mac computer to send commands to the R2R decks over a serial connection. It also works with Android devices as well. In many ways the TTGO board is perfect for such remotes because it's easy to code for using the Arduino IDE, and the OLED display makes for easy debugging. As a matter of fact, the most difficult part about fabricating the remotes was making the connection cable to the R2R decks since they make use of a connection (12 pin WAKA) that's no longer in production.



[DC-DC convertor](#) to take the 19V from the Teac X10R/X7R and convert it to 5V to feed into the 5V pin of the TTGO board



[Male Deutsch Pins 1060-16-0122](#) for the 12 pin WAKA connector. A 12 conductor cable is used, however a 10 conductor cable would work just fine as well





REV_PLAY (6)
REC_MUTE (7)
REC (5)

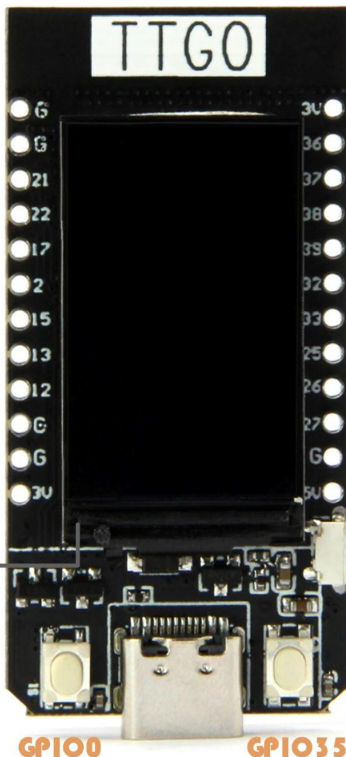
[8]
[7]
[6]

TOUCH2	ADC12	GPIO2	2
TOUCH3	ADC13	GPIO15	15
TOUCH4	ADC14	GPIO13	13
TOUCH5	ADC15	GPIO12	12

ST7789V

MOSI	19
SCLK	18
CS	5
DC	16
RST	23
BL	4

IPS ST7789V 1.14 Inch
ESP32 TTGO T-Display V1.1



3V3	GPIO36	ADC0
5V	GPIO37	
	GPIO38	
5V	GPIO39	ADC3
32	GPIO32	ADC4
33	GPIO33	ADC5
25	GPIO25	ADC18
26	GPIO26	ADC19
27	GPIO27	ADC17
5V		

RST

GPIO0

GPIO35

Name	
GND	
GPIO	
I2C	
Other	

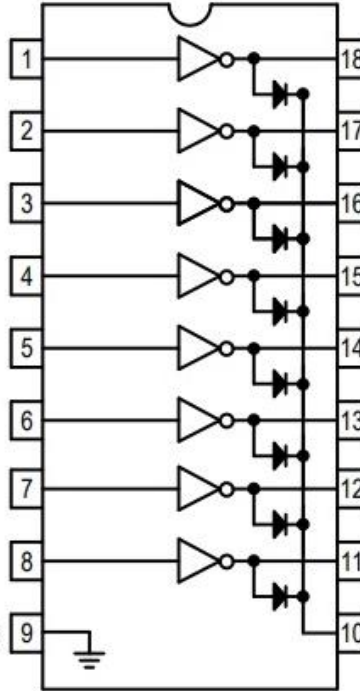
(n) char command for that function. [n] the pin # on the ULN2803 IC chip

PAUSE (4)	[5]
STOP (0)	[4]
REV (2)	[3]
FF (3)	[2]
PLAY (1)	[1]

Indicates the pin # on the
TTGO board

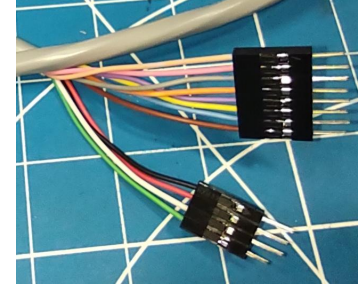
PIN CONNECTIONS

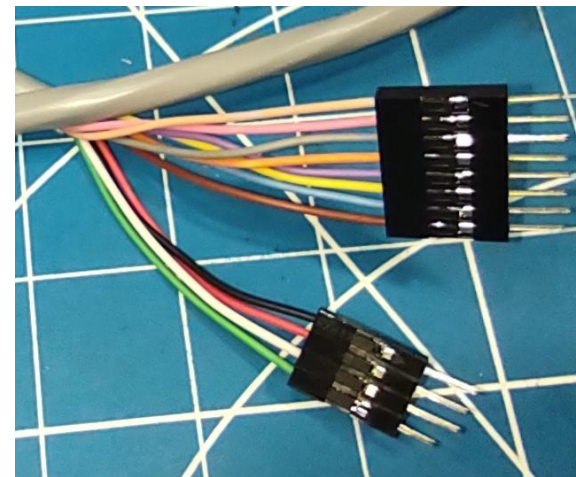
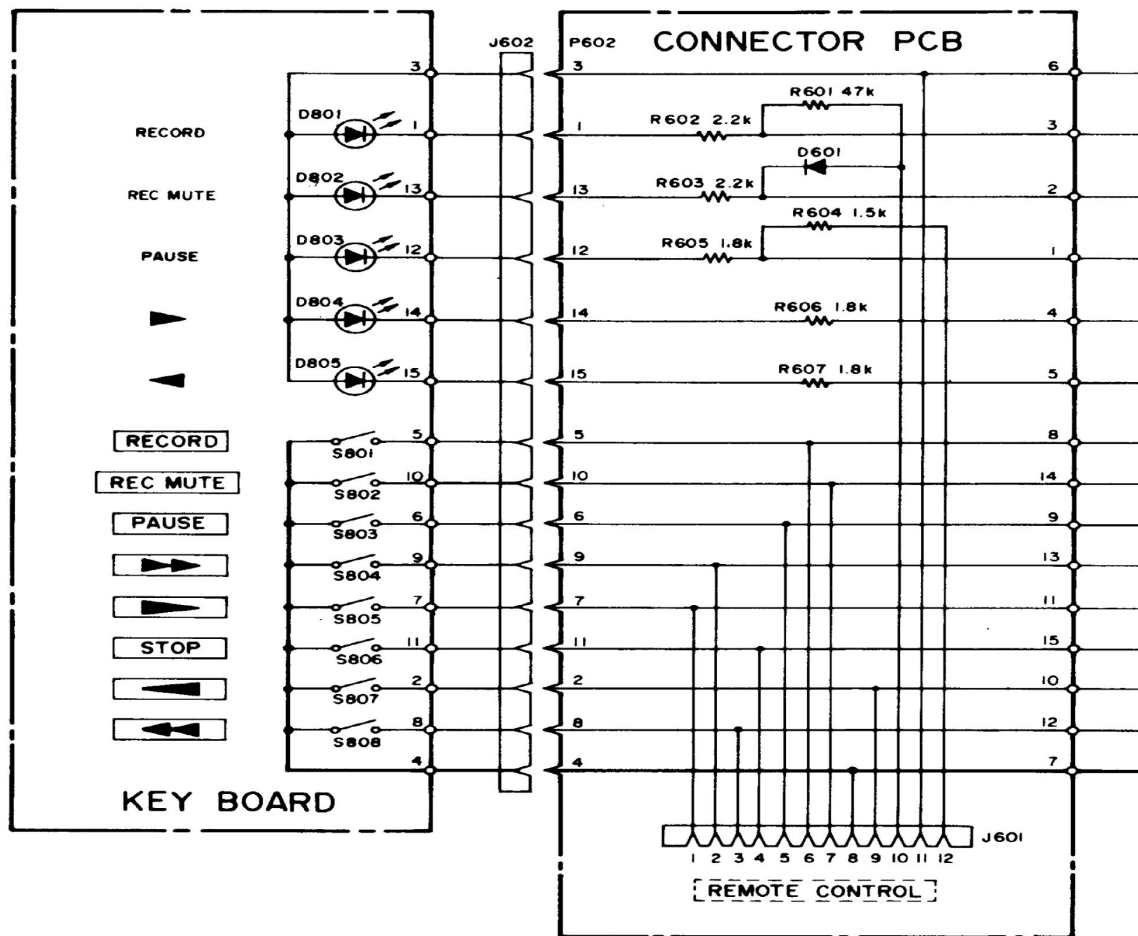
PLAY [27]
FF [26]
REV [25]
STOP [33]
PAUSE [32]
REC [12]
REC_MUTE [13]
REV_PLAY [15]
TTGO/R2R GND Gnd



Beige [1]
Pink [2]
Gray [3]
Orange [4]
Purple [5]
Yellow [6]
Light Blue [7]
Brown [9]

Indicates the pin # on the 12
pin R2R WAKA connector





Pin #	Color	Function (command)
1	Biege	PLAY (1)
2	Pink	FF (3)
3	Gray	REV (2)
4	Orange	STOP (0)
5	Purple	PAUSE (4)
6	Yellow	REC (5)
7	Light Blue	REC_MUTE (7)
8	Black	GND
9	Brown	REV_PLAY(6)
10	White	REC_LED/Not Used
11	Red	PWR 19VDC
12	Green	PAUSE_LED/Not Used