



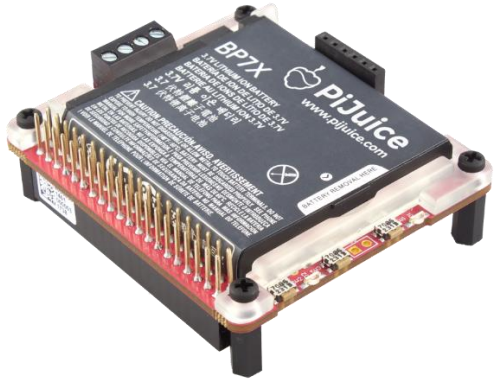
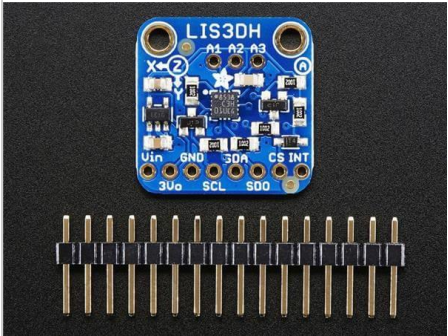










Assembly Manual for tangible coach

Hardware Material

Part N.	Product	Link to italian shop	Image
H1	raspberry pi 3 A+	https://it.farnell.com/raspberri/raspberry-pi-3-modap/scheda-sbc-raspberry-pi-3-modello/dp/2946269	
H2	Matrix voice	https://it.farnell.com/matrix-labs/matrix-voice/kit-sviluppo-iot-riconoscimento/dp/2846912	
H3	SD card Samsung evo plus 32GB	https://www.bpm-power.com/it/product/1703312/32gb_scheda_microsd_samsung_evo_plus_2017.html	
H4	speaker JST	https://www.mouser.it/ProductDetail/Adafruit/33517qss-sGAEPiMZZMIRKY1LzIsEJRKrSeswPTJRccwM4oi-miJl%3D	

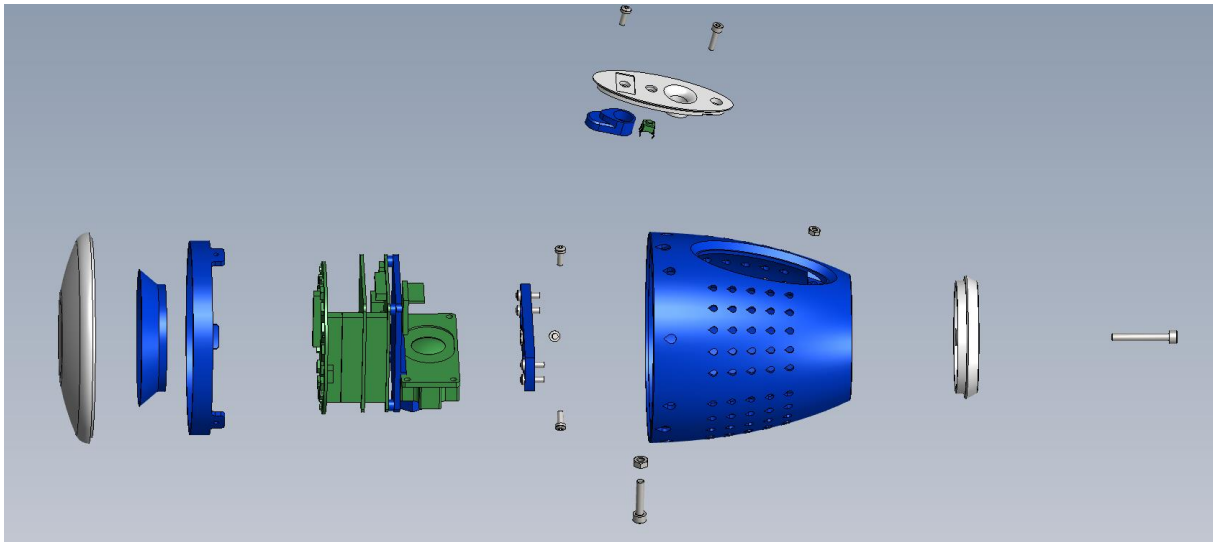
H5			
	pi juice hat	https://uk.pi-supply.com/products/pijuice-standard	
H6			
	ACCELEROMETER LIS3DH	https://www.mouser.it/ProductDetail/Adafruit/2809?qs=sGAEpiMZZMvt1VFuCsPEMtiejWwnLRvgPHoGqk9qRjg%3D	
H7			
	Tactile switches omron	https://www.mouser.it/ProductDetail/Omron-Electronics/B3F-1020?qs=%2Fha2pyFaduqcui%252BrfXlITBGqYd564fRidH8T8R8A%3D	
H8		https://it.aliexpress.com/item/32956966781.html?storeId=3514107&spm=a2g0y.12010612.8148356.10.5ec66b59zN1zD7	 <p>Up Angled</p>
	Extension micro-usb data cable		

H9		https://it.aliexpress.com/item/32959184245.html?spm=2114.search0104.3.1.76311a0brHqSH&ws_ab_te_si=searchweb0.0%2Csearchweb201602.5.10065.10068.319.10059.10884.317.10887.10696.321.322.10084.453.10083.454.10103.10618.10307.537.536.10134%2Csearchweb201603.52%2CpcSwitch.0&algo_expid=599e2116-b9e5-473f-aa43-3f863c340bd8-0&algo_pvid=599e2116-b9e5-473f-aa43-3f863c340bd8&transAbTest=ae803_5	
H10	USB Charger Samsung	https://www.digikey.it/product-detail/en/hirose-electric-co-ltd/DF13-2S-1.25C/H2179-ND/421748?_ga=2.100366174.1793250444.1562756375-889818330.1561716011&_gac=1.92471791.1561716011.CjwKCAjw9dBoBRBUeiwA7VrrzejbN3L1wkg2n2A9rF46AxIRz_5xNdwRLW7VMS1-4JU9IPeSG3d1hoCodUQAvD_BwE	
H11	Connector DF13 speaker	https://www.digikey.it/product-detail/en/hirose-electric-co-ltd/H4BBG-10112-R6/H4BBG-10112-R6-ND/425590?_ga=2.100366174.1793250444.1562756375-889818330.1561716011&_gac=1.92471791.1561716011.CjwKCAjw9dBoBRBUeiwA7VrrzejbN3L1wkg2n2A9rF46AxIRz_5xNdwRLW7VMS1-4JU9IPeSG3d1hoCodUQAvD_BwE	
H12	Cable black speaker	https://www.digikey.it/product-detail/en/hirose-electric-co-ltd/H4BBG-10112-B6/H4BBG-10112-B6-ND/425558?_ga=2.7918578.1793250444.1562756375-889818330.1561716011&_gac=1.148442565.1561716011.CjwKCAjw9dBoBRBUeiwA7VrrzejbN3L1wkg2n2A9rF46AxIRz_5xNdwRLW7VMS1-4JU9IPeSG3d1hoCodUQAvD_BwE	
H13	Cable red speaker	https://www.digikey.it/product-detail/en/jst-sales-america-inc/B2B-PH-K-S-LF-SN/455-1704-ND/926611?_ga=2.7918578.1793250444.1562756375-889818330.1561716011&_gac=1.148442565.1561716011.CjwKCAjw9dBoBRBUeiwA7VrrzejbN3L1wkg2n2A9rF46AxIRz_5xNdwRLW7VMS1-4JU9IPeSG3d1hoCodUQAvD_BwE	
	Connector JST PH		

H14			
	NetDot Gen12 1m	https://www.amazon.it/gp/product/B07QKF14SS/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&th=1	
H15		https://www.adafruit.com/product/759	
	2x Male-male jumper wire		
H16		https://www.adafruit.com/product/1954	
	3x female-female jumper wires		
H17		https://www.adafruit.com/product/266	
	2x male-female jumper wires		

3D printing parts

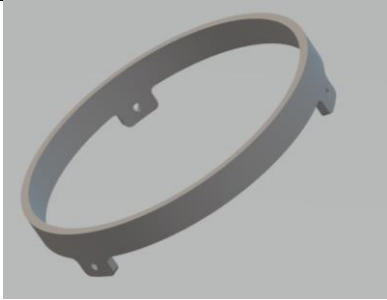




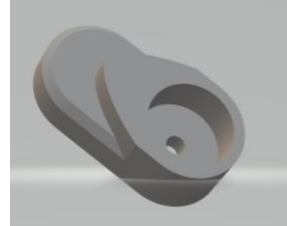

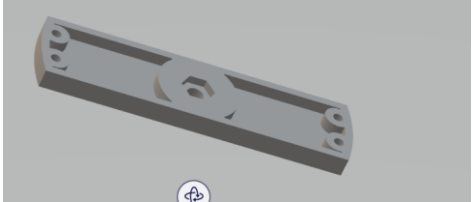

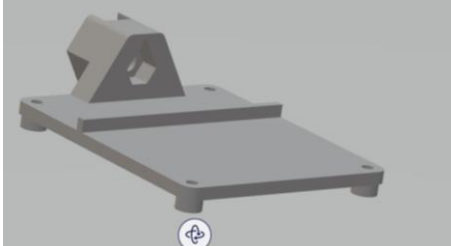


Overview:



SLA = standard resin, white, 100µm layer height

FFF = ABS, Black, 300µm layer height, 40% infill

Part N.	Name	Type	STL	Image
C1	TOP	SLA	 NESTORE_TC_V10_TO P.STL	
C2	BASE	SLA	 NESTORE_TC_V10_BA SE.STL	
C3	BODY BACK	SLA	 NESTORE_TC_V10_BO DY_BACK.STL	
C4	BASE CLIP	FFF	 NESTORE_TC_V10_BA SE_CLIP.STL	

					
C5	BASE LED SHIELD	FFF	 NESTORE_TC_V10_BASE_LED_SHEILD.STL		
C6	BODY	FFF	 NESTORE_TC_V10_BODY.STL		
C7	BODY BACK CLIP	FFF	 NESTORE_TC_V10_BODY_BACK_CLIP.STL		
C8	BODY LOCK	FFF	 NESTORE_TC_V10_BODY_LOCK.STL		
C9	PI PACK MOUNT	FFF	 NESTORE_TC_V10_PI_PACK_MOUNT.STL	  	

Other Material

Part N.	Name	Type	Quantity
S1	Cap head	M4 x 30	1
S2	Cap head	M4 x 20	1
S3	Cap head	M3 x10	2
S4	pan head cross	M3 x 8	4
S5	pan head cross	M3 x 12	4
S6	Nut	M3	1
S7	Nut	M4	2
S8	Bandage tissue (Size D) medium arms, small ankles	https://www.amazon.it/gp/product/B002BTRH5Y/ref=ppx_yo_dt_b_asin_title_o02_s00?ie=UTF8&psc=1	15cm

Hardware Assembly and soldering

- 1) Solder a 3 pin header on top right of Pi 3A+ GPIO back (H1) as in figure. Extra headers are available on LIS3DH package (H6). Take the shorter one.
- 2) Prepare cables for Adafruit Speakers. Mount cables (H11 and H12) in Ff13 connector (H10) (red cable as in figure to match Matrix voice Speaker +) . For Mono speakers, solder the other two ends of the cables to the male JST connector (H13); Plug the JST Connector of the speaker (H4). For Stereo speakers, unmount the wires from the 4pin-JST plug by pressing the metal contact on the back of the connector while pulling the wire. Solder the speaker wires to the cables (H11- and H12) attached to DF13 connector
- 3) Solder two pins (on the same side) of Omron tactile Switch (H7) to two male/male jumper wires. Solder Jumper wires to SW1 in PiJuice (H5).
- 4) Bend 90° and solder two male/female wires (H16) on the external side of the Pi3A+ GPIO. 3rd pin (GND) and 11th pin aligned to the 3AP text on the board, (GPIO for INT, PIN 25)
- 5) Solder the longer header of LIS3DH (H6) on the breakout board. Make the long pins go up from the side with electronic components
- 6) Stick the accelerometer on the side of the C9 mounting part. Connect the wires to RPI header, make the wire pass in the hole and connect all the wires to header.
- 7) Mount the stack: Matrix Voice on Pi Juice on RPI 3A+. Stick the LED Shield (C5) on top of the Matrix voice LED's. Put glue only on the inside to avoid aberrations of the light.
- 8) Add MicroUSB extension cable.
- 9) Stick the Magnetic connector of H14 to the round hole in the body back (c3). Stick the button (H7) in the square hole.
- 10) Stick the speaker on C9 and wire it to the matrix Voice
- 11) Prepare a hole(/some holes) in the tissue for C3. Put the tissue on the body C6

- 12) Add SD card (with preloaded image) in PI3A+
- 13) Remove plastic protection from Pi Juice battery
- 14) Mount all case parts with all the screws
- 15) Tight the tissue in the bottom part
- 16) Turn on with short press on the button. Pair with WoT agent, connect to wifi and test.