

micro: IoT - micro:bit IoT Expansion Board

SKU:MBT0012



Introduction

With the development of IoT, there are so many mature IoT platforms emerging in both domestic and overseas, but most of them are mainly designed for the professional, which could be very hard for the non-experts to get started. Therefore, we specifically developed this Micro: IoT, a micro:bit-based IoT expansion board. Use the board together with DFRobot Easy IoT platform, lower the barrier of using IoT.

This micro: IoT board is pretty cute and delicate, on which we integrated Wi-Fi, OLED, 2way motor drive, 6-way IO port, 2-way IIC, 1-way serial port, 1-way buzzer, 3-way RGB, 2-way servo, Li-ion battery holder, charging circuit, emergency power interface etc. So many resources for you to programme! Even without complicated background knowledge, you can build you IoT applications in few steps!

We designed the board as cloud shape to make it more suitable for the theme of IoT. As for power supply, we selected CR123A 3.6V lithium rechargeable battery of 1000mA. This kind of battery features small size, high capacity and high safety. What's more, we add short circuit and reverse connection protection for the product to further improve the safety in using Li-ion Battery.

Supports makecode and Mind+ graphical programming platforms.

Specification

- Battery Type: CR123A 3.6V Rechargeable Li-ion Battery (Note: do not use 3V CR123A battery and non-rechargeable. Recharging the non-rechargeable battery is dangerous.)
- Onboard charging circuit
- Interface: 2-way IIC, 1-way serial
- Micro:bit Interface: P0 P1 P2 P8 P12 P16
- Other Interface: two DC motor ports, two servo ports
- Standard Gravity Pins
- On-board 3-way RGB LED
- On-board buzzer and Switch
- On-board OLED display
- Dimension: 148×112mm/5.83×4.41"
- Weight: 104g
- Programming Platforms: makecode, Mind+



Overview

Color	Indication
Red	failed to connect
Blue	connecting to WiFi
Green	Work properly
Purple	MQTT disconnected
White	WiFi module firmware upgrading

Note: when the indicator turns purple, it means that MQTT is disconnected, and please check if the id account is correct.

Makecode Online Graphical Programming

Micro:IoT library address: <u>https://github.com/DFRobot/pxt-microIoT</u>. <u>How to install an library?</u>

Easy IoT Platform

- Easy IoT from DFRobot is dedicated to simple solutions for Internet of Things.
- Features Included:
 - \circ $\;$ Get started in 10 minutes, plug and operate $\;$
 - OBLOQ supported, serial port transmission
 - Real time monitoring, date analysis

Sign in and Setting Easy IoT

• Open the easy IoT website : <u>http://iot.dfrobot.com.cn/</u>



- With a micro:bit board, a micro:bit IoT expansion board and Easy IoT, a whole IoT system will be ready.
- Sign up and Sign In
 - Click the Sign up/Sign in at the upper right corner of the webpage to register a account.
 - Fill in the black with your personal information, you can register via phone or email.
 - Sign in the Easy IoT, then it will enter into Workshop interface. You need to add a new device to match your micro:bit.



 Enter 6-16 digits new password Enter 6-16 digits new password 	×	Please input the email address
Enter 6-16 digits new password Next	A	Enter 6-16 digits new password
Next	Ô	Enter 6-16 digits new password
		Next

<mark> </mark> Easy IoT	Homepage	Documents	Workshop		Logout	⊕ en
lot_id(user)	-	+				
lot_pwd(password)		·				
Allocated: 0/10000	F	ree access to 10	,000 messages storage.	Fre	e Signu	p

• Easy IoT Setting

- When added a new device, a device topic Topic: eIJA7JHZg will be generated randomly, and you can click the device name to change it.
- Click "send message", then the webpage of message receiing and transmitting will appear. You can find the details of the received data.
- Get to know other information in this page- ID account interface



Click to check the details of this topic.

Seasy IOT Homepage Documents Workshop	France	Logout	⊕ en
←Go back to my workshop			
micro:bit device Device name			
Send a new message			
Adding a -> prefix to the message means that the message is a pure command message and will not be stored in the database. For instance "->off" Please enter the message. Input limit is 128 bits.	Send		
View message Check messages			
Date range			
Check			
List of the latest messages			
Time Message			
Previous Next			



Easy IoT Basic Tutorial

Smart Emojis

Makecode Program: smart emojis

Function: display your current feeling. For example, if you are not in the mood, you can send a message to micro:bit through Easy IoT to let micro:bit board display the set pattern.

Programs for reference



Program Effects:

• Enter Easy IoT webpage to send message to micro:bit and find the related Topic, click "send message".

New Dev	vice
l'opic:	
lk	
Send msg	View details

• Input your command into the blank, and send it out. Send the message "yes", micro:bit displays "√"; "no", "×"; "cry", "crying face pattern"; "smile", "smiley face".

Send a new message	
Adding a -> prefix to the message means that the message is a pure command message and will not be stored in the database. For instance "->of yes	f" Send



Voting Machine

Makecode programs: voting machine-hosting

Makecode programs: voting machine-voting

Function description: voting machine utilizes the wireless communication function. The voting machine has hosting post and voting port. The voting port can have abundant devices. When the voter presses the related button, the number of the votes will be displayed on the screen. Meanwhile, the data will be sent to IoT platform.

radio set group 1									
initDisplay									
Ricro:TeT setup Hi-fi: name: (* dfrobot	Yanfa' password:	hidfrabot							
Micro:IoT setup mutt	and the second second	and the second second							
101_10: ('H1_j01x2t')		-				r			
101_1MD : (SANOr63804.)		receivedStr		Button	then				
loT service:	chang	e A + by	-						
(default topic_0) Topic: (*ellATHIg)	нотт	Send Ressage	jain (Az'		∋ ⊕ •	topic_0 *			
start connection:	OLED	show line 💿	text Jul	• • A:*	A+ 0	•			
serveri EasyI0T_0I •	€			_	-				
subscribe additional topic_1 + :	oząbifna 1f	receivedStr	ing	"Button_B	then				
show ican iiii *		e B = by	1						
MQTT Send Message ("hello") to topic	.е.т нотт	Send Hessage	Şola 🛄		Ə 🟵 🚥	topic_1 =			
MQTT Send Message ('hello' to topic	3.* 0.00	show line 1	text jai	- (11)		•			
set A = to 0	•								
	_								
-									
on start									
on start									
on start									
on start radio set grou	1p 1								
on start radio set grou	1P 1								
on start radio set grou	IP 1								
on start radio set grou	1P 1			* *		-	4		
on start radio set grou	p 1		on	butto	n B	• pr	essee	1	
on start radio set grou	pressed		on	butto	пВ	• pi	ressed	1	
on start radio set grou	pressed		on	butto	n B tring	- pr	resser		
on start radio set grou on button A • show string •	pressed		on	butto	n B tring	• pr	ressed		
on start radio set grou on button A • show string •	pressed		on	butto how s	n B tring	• pr	ressec	utton	в
on start radio set grou on button A • show string • radio send stri	pressed	tton_A	on si r	butto how si adio	n B tring send	• pr • B" string	resser	utton	_B

Programs for reference

Programs Effects :

Press down button A, send a message to topic0 and change A by 1; press down B, send a message to topic1 and change B by 1.



🛃 Latest news			
Time	Message		
2019/9/4 13:24:16	B:2		
2019/9/4 13:24:12	B:1		

Light and Temperature Monitor

Makecode programs: light and temperature monitor

Function description: use micro:bit to detect the light and temperature, and send the data to Easy IoT and OLED by pressing button A and B.

Programs for reference

on start initDisplay	
Micro:IoT setup Wi-Fi: namo: dfrobotYanfa	a) password: ('hidfrobot')
Micro:IoT setup mqtt	
101_10; "HJ_j01x2E"	
IOT_PMD : 'SygDo03gn4'	Her sein nessage john 1: Leoperature (-C) O O to topic o +
IoT service:	OLED show line () text join 'T:' temperature (*C) 🕞 🕤
(default topic_0) Topic: [el]A73HZg]	
start connection:	on button 8 - pressed
server: Easy101_CN ¥	MQTT Send Message Juin 1: light level 🖂 🕢 to topic_0 *
show Icon	OLED show line 1) text join 11: light level Θ
MQTT Send Message hello: to topic_0 +	

Programs effects:

Press down button A, send the current temperature value to the workshop; the first line of the OLED screen displays the temperature value. Press down button B, send the current light value to the workshop; the second line of OLED screen displays the light value.

T for temperature; L for Light

ĺ	🛃 Latest news	
	Time	Message
	2019/9/16 17:29:57	L:255
	2019/9/16 17:29:56	T:27
	2019/9/16 17:29:30	hello

Remote Watering System

makecode programs: watering system

Function description: connect a soil moisture sensor to the module's P1, connect a servo to pin S1. When the internet connected, send the command "see" to Easy IoT to check the soil humidity. We can decide if the plants need to be watered according to the humidity data. In order to avoid we forget to turn off the water system, we should first set that, when the humidity is over than 550, the water system will be turned off automatically.

Components: servo, soil mositure sensor(P1)

initioisplay	(KED show line () text (join ('hunidity)') analog read pin P1 +	0
ticro:IoT setup Wi-Fi: nume: ("dfrobotYanfı	passend: "hidfrobat"	
ticro:loi setup mytt		
DT_TD: ('H3_j01x2E')	Serve 51 + angle 100	
IDT_PAD : * SygDo01gn4*		
toT service:	and the second	
an a	POTT on topic.8 + received message +	
default topic 0) Topic: (e13AJ3H2g)		
(default topic_0) topic: (e124/3H/2g)	if ansage ('see') then	
(default topic 0) topic: ("el3AJ3H2g") start convection:	if example then AUT Send Ressage onto humidity: analog read pin Pl . O O to topic.d .	
(ertault topic_0) Topic: (213477822) start connections enver: EmsyEDE_CN *	if ersage 'so' then AUTT Send Aessage folls 'humidity:' enalog read pin Pi • O • to tapic_# •	
default tapic_0) Topic: (21307H2g) tart connection: erver: EasytOF_ON = how Ican # -	if ersage • •• 'ast' then PUT Send Ressage folds 'hunddity:' enalog read pin 'PI • O O to tapic_if •	
wranit topic () Topic (1337)Hig art connection: arver: Easy101_ON = No Icon + = TT Send Ressage (Tells) to topic.# =	if artsage 'so' then RUTT Send Ressage form 'humidity:' analog read pin Pl + O O to topic_d + O if artsage 'D' then	
wranit topic () Topic: (1347H2g) art connection: awer: Easy100_CN = aw icon () () () () () () aw icon () () () () () () aw icon () () () () () () () () () () () () ()	if armage 'as' then RUTT Send Ressage (only 'humidity:' energie read pin P1 + O O to tapic_# + O if armage 'D' then Servo S1 + angle 10	
Artwalt topic #) Topic: #1347Hig* tart commettion: cover: Easy100_CN * how icon ## * UTT Send Ressage *hells* to topic.# * erve Si * angle 100	if ensage 'as' then NUTT Good Ressage fold "humidity:" enalog read pin P1 + O O to topic.# + O if ensage '(N' then Serve 51 + angle 10 O	
default impic_0) topic: *e1347Hig* tart connections enver: fany101_CH * how icon ### * QTT Send Rescape *helis* to topic_0 * enve 51 * angle 100	if example 'as' then NUTT Send Ressage fold 'humidity:' enalog read pin Pi • O (•) to tapic_# • (•) if example 10 (•) if example 10 (•) if example 10 (•) (•) (•) (•) (•) (•) (•) (•)	

Programs for reference

Program Effects:

Watering plants by remote control: when connected with WiFi, the servo rotates 100 degrees, and the watering system is closed. Send commands to micro:bit via Easy IoT, if the micro:IoT received the command "ON", the servo rotates 10 degrees to enable the watering system. When the micro:IoT received the command "OFF", the servo rotates to 100 degrees, or the humidity is larger than 550, the system will be disabled.

Note: when the servos turns to 100 degrees, the watering system is closed, servo to 10 degrees, the system opened.

on start	
Micro:IoT setup Wi-Fi: name: dfrobotYa	nfa" password: "hidfrobot"
Micro:IoT setup mqtt	the second s
101_10: ('HJ_j01x2E')	forever the second s
101_PMD : ('Syg0o0Jgn4')	set trsd ★ to analog read pin Pi ★
IoT service:	Send Message join 'trsd:' trsd - 💬 📀 to topic_0 -
(default topic_0) Topic: <code>elJA7JHZg</code>	pause (n5) 80000 -
start connection:	
server: China 🕶	
show icon	on topic_0 • received message • on button A • pressed
Send Message 'hello' to topic 0 •	if message • • • • • • • • • • • • • • • • • • •
Servo S1 • angle 160	Servo S1 + angle 30
	on button 8 • pressed
	if message OFF' then
	Servo S1 → angle 160

🛃 Latest news	5
Time	Message
2019/9/17 17:11:7	humidity:2
2019/9/17 17:11:6	see





Automatic Clothes Hanger

Makecode Programs: automatic clothes hanger

Function Description: send humidity value to Easy IoT every 8 minutes, then user can determine if it is suitable to dry our clothes. When OBLOQ receives "OFF", the servo rotates to a certian degree to retract the clothes hanger; When OBLOQ receives "ON", the servo rotates to another degree to stretch the hanger.

Components: Servo(S1), soil moisture sensor(P1)

stari	t																		
	ToT cot		-		dfuch	******		hidfushet											
ticro:	ToT set	up m1		ane: (01100		passiona.	n10170001											
OT T	т. с. на	101+2				2	forever		_	_									
or_n		Jorxe					set trsd ▼	to analog r	ead pin F	P1 •			_						
	wD : 5	ygooo	Jgn4				OLED show line	e 🕘 text 🌔	join (tr	sd: *	trsd) (
DT SE	ervice:			_			MQTT Send Mess	sage join 😁	trsd: *	trsd 🔻	Θ	\odot	to t	opic_					
defai	ult topi	c_0)	Topic:	el	DA7 JHZg	2	pause (ms) 8	0000 -				24	10.1						
tart	connect	ion:											1						
erver	r: Easy	101_0	N -				MOTT on topic	0 • received	nessage				٥	n but	ton a	A 👻	press	ed	
how i	icon								- caut	then	1.0			Serve	o 51	• a	ngle	30	
ervo	51 🕶	angle	160						UN	their	1.0								
							Servo S1 🔻	angle 30	8	_	1			2.3					
									* OFF.		10		- 1	n but	ton I	8 💌	press	ed	
									UFF	Click				Servi	o 51	• •	ngle	160	
							Servo S1 •	angle 160							1.25				

Programs for Reference

Program Effects:

When Easy IoT sends "ON", the servo rotates to 160 degrees to stretch the clothes hanger; when Easy IoT sends "OFF", the servo rotates to 30 degrees to retract the clothes hanger. Or we can control it manually by pressing the button A and B.

(🛃 Latest news	
	Time	Message
	2019/9/17 15:48:16	OFF
	2019/9/17 15:48:1	ON
	2019/9/17 15:47:20	trsd:2





Remote Entrance Guard System

Makecode programs: remote entrance guard system

Function description: imagine when you are on business, your friend suddenly calls you and says he is waiting at the door of your house, but you cannot go home immediately. However, you have this remote entrance guard system, so you can just use your phone to open the door and let he enter your house.

Component: servo (S1)

Programs for Reference

	if button A = is pressed then
croilol setup Mi-fil name: dfrobolyanfa p	MQTT Send Message somebody rung the bell to topic_0
1_10: "HJ_j01x2E"	OLED show line 0 text tell:15196541600
I_PAD : ('Syg0o83gn4')	
I service:	and the second sec
efault topic_0) Topic: (eliA73HZg)	MQTT on topic_0 * received message *
art connection:	1f essage (01) then
ver: EasyIOT_CN +	Servo S1 = angle 90
w Jeon 🏥 +	pause (us) 18000 -
T Send Message ('hello') to topic_0 •	Servo 51 - angle 0
vo 51 + angle 0	clear

Programs Effect:

Press down button A, the telephone number will be displayed. If the house master gets the phone call, he will send command "ON" via Easy IoT to the guard system, the servo rotates to 90 degrees to open the door. 1 minute later, the servo rotates to 10 degrees, the door will be closed.

E Latest news	
Time	Message
2019/9/18 10:28:51	ON
2019/9/18 10:27:56	somebody rang the bell
2019/9/18 10:27:56	somebody rang the bell



Remote controlled RGB LEDs

Makecode Programs: remote controlled RGB LEDs

Function Description: you were gonna throw a home party, unfortunately, you have to work overtime, so you told your friends to start the party themselves. They want to turn on the festival lamps but cannot find the remote controller. This time you use you phone to turn the lamp on.

Programs for reference



Programs Effect:

Send a command "L" via Easy IoT, to dispaly an effect of water lamp (alternatively emit red and purple). When the module receives the command "B", it will play the music "twinkle, little start" and the RGB shines with the music.

	Latest news							
	Time	Message						
	2019/9/18 14:55:25	L						
	2019/9/18 14:55:13	В						
	2019/9/18 14:55:11	hello						



IFFTT IoT Platform

- IFFTT, short for "If this then that", is a free web-based service to create chains of simple conditional statements, called applets.
- IFFTT helps users to connect all of their different apps and devices and let them talk to each other.
- Operation process: if the conditons of this web service are met, then automatically trigger that web service to do a action.



Preparation

- 1. Enter IFFTT website, register an account. Website: https://ifttt.com
- 2. Sign in and enter the My Applets page, click New Applets.



3. Create an Applet, enter the Applet interface, click This and input webhooks.





4. Fill the Event Name in the next page.



IFFTT Basic Tutorial

Send data to email

Function description: press the button to send a message to email.

• Configure IFFTT, set the event name as "aaa", then webpag will return back automatically. Click "That" and select "Email" in the next page.



• Select "Send me an Email"

A HORENDERS) 204 BE OF IA 46 V - C 2
✓ C 位 ☆ Q 論 https://補ttt.com	creativit-receive a web request-three-enaithid=23	○ #	Q. 副12第 + (2月前 + 111 前半 + 111 前是 + 111 前年 + 111 世界前年
Make an Applet - STTT 4 +			6.0
	FTTT 🐵 Discover 🔍 Search 🛞 My Applete	P Astrony	aliones1 v
¢ Back	_		
	🖂 c	hoose action	
		Step 6 of 6	
Send mu Thin Actor on HTML Images a support	en e en		
	Don't are what you're to	ooking for? Suggest a new action	
	About Biog Mely	a Joke Terma Privery Trust	
	Add your	ervice and become a partner	

• Edit the content, here I chose the default one. Then click "creation action"

Make on Applet - IFTTT -	Antice of the state of the s	C 0
	FTTT	e sizeret v
4 Back	1000	
	🗢 Complete action fi	ields
	Step 5 of 6	
	Send me an email This Action will send you an HTML based	
	email. Images and links are supported. Subject	
	The event named TEventName	
	Coccurred on the Makee Webbooks service	
	Add ingredient	
	Body	
	What: EventName <5r> When: CocurredAt When: CocurredAt	
	Value3	
	Add ingredient	

• To check the password, click HOME to enter "webhooks" and click "Documentation".

FTTT Home	G		
🖂 Email 3		Evernote	a.
🈏 Twitter d	a [A	Webhooks	20 A Y
Getmore Documentation Settings			

	Documentation
Your key is: Back to service	↓ dN6c2aLMKMXIB7E62gpO2D
To trigger an Eve	ent
Make a POST or GET v	/eb request to:

Makecode Programs: Send data to Email

initDisplay						
				1000	_	
Micro:IoT setup Wi-Fi:	name: dfi	robotYanfa	pass	word:	"hidfro	obot'
webhooks config: event	: "aaa" k	ey: dN6c	2аг.МКМХ	187E62g	p020*	
-				-		
button A + pressed	1 (A. 1997)					
button A + pressed	1 1FTTT(p	oost)	-			
button A + pressed	IFTTT(p value1	oost)				
button A * pressed	IFTTT(p value1 value2	HI'		to	tonic	
button A * pressed MQTT Send Message	IFTTT(p value1 value2	Dost) HI' DFRobot		to	topic_	0 -
button A * pressed MQTT Send Message	IFTTT(p value1 value2 value3	DDst) "HI" "DFRobot"		to	topic_	e -
button A * pressed MQTT Send Message	IFTTT(p value1 value2 value3 timeout	DEST) * HI * * DERobot * * * *	99	to	topic_	ə -
button A ♥ pressed MQTT Send Message OLED show line 0 t	IFTTT(p value1 value2 value3 timeout	DDSt) *HI* *DFRobot ** t(ms) 1000	0	to	topic_	0 -
button A ♥ pressed MQTT Send Message OLED show line ① t	IFTTT(p value1 value2 value3 timeout ext •HI•	Dost) 'HI' DFRobot' t(ms) 1000	99	to	topic_	0 -

• Result: press down button A, the message "HI DFROBOT" will be sent to the pre-set Email.



The event named "aaa" occurred on the Maker Webhooks service \star

Send note to Evernote

Function Description: send note to Evernote

• Create a new This. Click Account->Create->This, and create webhooks and name the Event as "kkk".

10 0	
Account	Create your own
Activity	
My Applets	
My services	If EThis Then That
Create	
Help	Build your own service on the IFTTT Platform L2
Sign out	
•	

• The webpage will back to the last page, then click That and search Evernote.



• Select what you like, I chose Create a note here.



• Select the default form

Complete action fields
Title
The event named " EventName " occurred on the Maker Webbooks service
Add ingradient
Body
What: EventName When: OccurredAt Extra Data: Value1, Value2, Value3,
Add ingredient
Notebook
Leave blank for default Add ingredient
Taga
EventName , IFTTT

• Click "Creation action", the password is the same as the previous Email project.

Makecode Programs: send date to Evernote

Programs for reference

on start						
initDisplay	10.00	1.64 (11.65			114	147
Micro:IoT setup Wi-Fi:	name: 付	frobotYanfa	passwo	rd: (hidfro	bot *
Webhooks config: event	: kkk*	key: dN60	ZaLMKMX18	7E62gp	02D*	
	1.1					
on button A 🕶 pressed		1.15	1.11			
	IFTIT	(post)				
	value	HI'				
MQTT Send Message	value:	DFRobot	2	to	topic_	•
	value:	• • • • •	- /			
	timeo	ut(ms) 100	00			
OLED show line 🕘 t	ext ('HI'					
OLED show line 1 t	ext DFRo	bot *				

• Result: press down button A, send "HI DFROBOT" to the Evernote.

The event named "kkk" occurred on the Maker Webhooks service

What: kkk When: September 3, 2019 at 04:05PM Extra Data: HI, DFRobot, ,

Send Message to Twitter

Function description: when you get up in the morning, press down button A and B, send the temperature and light intensity to Twitter.

• Create a new This. Click Account->Create->This, and create webhooks and name the Event as "Twitter".



• The webpage will back to the last page, then click That and search Twitter.



TTT Home Q Search			Get more
(Back	Choose a serv	vice	
	Q twitter	0	
	Telline		

• Select what you like, I chose "post a tweet" here.

	_	Step 4 of 6	
Post a tweet This Action will post a new tweet to your Twitter account. NOTE: Please adhere to Twitter's Rules and Terms of Service.	Post a tweet with image This Action will post a new tweet to your Twitter account with a linked pic.twitter.com image. NOTE: Please adhere to Twitter's Rules and Terms of Service.	Update profile picture This Action will update your profile picture from the image URL you specify and optionally tweet about it. NOTE: Please adhere to Twitter's Rules and Terms of Service.	Update bio This Action will update your bio and optionally tweet about it. NOTE: Please adhere to Twitter Rules and Terms of Service.

• Complete the following steps after that.



• If accidently selected the default setting, add the Event as the following steps.



Makecode Programs: Send message to Twitter

ert Display		an lattan A + process	19117(post) Jeanset 10	
n:lef setap ki fir namr: noks caefig: event: 🚹	dhiobelitanta password: (hidfraid litter) www: (desclas.Netrolibit63ga000)	RTT Send Ressage	valad "Effect" valad (He Clegeralure: Dogerature (4) C/O	te tepic_0
		0120 show line 📀 to 0120 show line 🚺 to	at sl.	
on bottom B.+ pressed	DTTT(pest)			
NJTT Send Ressage	valuet (1970) valuet (1970) valuet (1971) (1971) (1971)	at love) (3 (0)	· task_d -	
OLED show line 💿 he OLED show line 🔳 te	t (10-)	10.000		
OLED slow Line 🕐 te	nt (jele (* light, levels') (light level	00		

• Result: press down button A, send the message to Twitter: Hi DFROBOT and the current temperature; Press down button B, send: HI DFROBOT, and the current light intensity.



Send Message to iPhone

Function description: the climate is changeable during the seasonal alterantion. Use the micro:bit to detect temperature. If temperature is more than 30 degree, send a message to iphone to notice the user to pay attention to heatstroke. If temperature is less than 20 degree, send a message to iphone to notice the user to protect themselves from the cold.

 Create a new This. Click Account->Create->This, and create webhooks and name the Event as "Reminder"

10	
Account	Create your own
Activity	
My Applets	
My services	If CThis Then That
Create	
Help	Build your own service on the IFTTT Platform
Sign out	
• · · · · · · · · · · · · · · · · · · ·	

• The webpage will back to the last page, then click That and search IOS Reminders



• Select what you like, I chose "add reminder to list" here.

		Value1 Value2 Value3
		Add ingredient
	Choose action	List Name
	Step 4 of 6	Distances (0111) Add Ingredient
		Priority
Add reminder to list		None
This Action will add a new reminder to the list		Alarm date
Ann ableria.		tomorrow at 7:00am
		e.g., 2/22/2018 at solution of formation at root?
	Don't see what you're looking for? Suggest a new action	
		Create action

2. Add ingredient under "Reminder". List Name and Priority keep the default status. Set Alarm date to "tomorrow at 7:00 am.

Note: the alarm date can be set according to your actual use.

Makecode: Send a message to iPhone

Programs for reference



• Result: Send a message to iPhone every 10 hours. When Temperature>30, send: the weather is so hot, please pay attention to heatstroke. When temperature<20, send: Cold outside, please put more clothes on.



Use an Android phone to Send Message

Function description : We often forget to water out plants, sometime, you have to be on business for a long time, but you want someone to take care of your plants. We can use the IoT expansion board to make an application to solve this problem. When the soil moisture is less than 350, the system automatically sends a message to your friend to water the plants. If it is over 520, send a message that the moisture is suitable.

• Create a new This. Click Account->Create->This, and create webhooks and name the Event as "message"



• The webpage will back to the last page, then click That and search "Android sms"



• Select what you like, I chose "send an sms" here.

(Back		Choose action	Complete action fields
Sen This SMS devi num	d an SMS Action will send an from your Android ce to any phone ber you spacify.	Stap 4 of 6	Phone number 1004403403403 Induktorovski di Motorovski di Message Value1 Value2 Value3 Add ingredient
		Don't see what you're looking for? Suggest a new action	Add ingredient Create action
	1. Click "send an	SMS"	2. Set "send an SMS"

• Set the phone number to receive the message -Enter->Home->webhooks->add the phone number to receive phone number

Q. Search		C (Esplore	manage The next of the event, Na Toutor, pressed or "both, photopenergy"
Your world	works better together	If Maker Event "message", then Send an	Send an SMS This Action will send an SMS from your Android device to any phone number you specify.
Android Device	🤉 📫 Andraid SMS 🎄	is-11092/0026	Phone number 1000000000000000000000000000000000000
9 Location	Notifications 🖉 w		Mossage Yuluet (Yulue2) Yulue2
🖋 Space	WU Weather Underground	* Settings	Add ingendu
	•	2. Click "Setting" at the right-	Save
	Viewall	top corner of Webhooks page	Delete

1. Click "home" and click Webhooks

3. Slide down, input the telphone number to receive messages.

Note: the type of the phone to send messages must be Android, and there should be a IFFTTT app installed on the phone. IFFTTT needs to have the access permission to Message.



n sta	rt													forever set hamidity + to analog read pin P1 +		
init	Disp	lay											_	OLED show line 🕘 text join humidity: humidi	ity • \ominus 🕣	
Nicr	o:Io ooks	it set	up Wi	·Fi: vent:	nane:	df	robot	Yanfa y: (*	cH7d4	eNNTE	d: y0vn1z	hidfro QiPKx	p'	1f humidity • <• 358 and • A	• • • • then	
set		• to	0							1	1	1		IFTTT(post) value1 [•] HI,DFR0807		
set		• 10												MQTT Send Message value2 Join * humidity:	humidity • 🕞 💿 to 1	topic_0
														value3 * the flowers nee timeout(ms) 1000	d watering"	
														set A + to 1		
														set B + to 0		
														if humidity + > + 520 and + B	0 then	
														IFTTT(post)		
														value1 ("HI,DFROBOT")		
														value2 oin " humioity:	to the soil is sufficient'	opic_e
														timeout(ms) 1000		
														set A + to 0		× 0
														set B + to 1		

Makecode Programs: <u>Send messages to Android phone</u>

• Result: when moisture < 350, send: the flowers need watering; When moisture > 250, send: the moisture of the soil is sufficient.





Beebotte IoT Platform

- Beebotte is a Cloud Platform for Real Time Connected Objects
 - Connecting anything and everything in real-time using a rich API supporting REST, WebSockets and MQTT
 - Designed to empower Internet of Things and real-time communicating applications
 - Beebotte brings you a platform as a service connecting thousands of objects and delivering millions of messages
 - One platform suited for diverse applications like instant messaging, dashboards, online gaming and score boards, domotics, Internet of Things and reporting
 - o Seamless scalability to meet your growing demands
- How to use Beebotte

Send data configuration from MQTT to Beebotte

• Website: <u>https://beebotte.com</u>

• Enter the Website, register an account. Then Back to Homepage and click Get Started For Free



• Enter Create New Interface to create your Channel Name, Channel Description, Resource name, Resource Description. You can create more than one Resource.

	Create a new channel	
Channels	Ghannel Name	Resource Data Type
My shiboards	Channel Description	When creating a new resource, you need to spec the type of data that is expected to be persisted to this resource.
	Public	Beebotte has a number of defined data types; di here for more information.
- Console	Configured Resources	Send on Subscribe (SoS)
Account tings	Resource name Resource Description any T SoS X	A new option called Send on Subscribe (505) has been added to the channel resource model.
Account age	Cancel Create channel	When enabled, this option allows the most receipersistent value to be automatically sent over when a client subscribes to the resource By default, this option is disabled
Support		

• For example, create a humidity channel to receive data

	Create a new channel
Channels	humidity
I Dashboards	Channel Description
B Beerules beta	Public P
Console	Configured Resources
Settings	+ Resource
Account Usage	Cancel Create channel
Support	

• The following interface will appear when you completed.

Channels	humidity		
util Dashboards	Configured resources		
B Beerules beta	humidity	45	a doy ago
>_ Console			
Q ⁰ ₆ Account Settings			
Account Usage			
Support			

• Click Account Settings->Access Management to check the API Key and Secret Key

Channels	Root Access Keys
Ш му	API Key
Console	Secret Key
Account	
Account age	
Support	

• Create Dashboards to check the history of the update value. -Create time table

					New Dashboard	Add Widget+ Save Changes
~				EE Channels	Desception	
and)				all Dashboards	Puble Add Widget+	
	Dashboards Create and manage your dashboards		Credie Dashboard	B tende De	Clock	
Channais			Searcon	> Compile	Text Area	
Dashboards	ntut. presention	CREATED ON	E SCOPE 1 VIEWS 1		Sasic Value	
Destudes 1978	AA.	September 24m 2019	Private 9	Q ^D _D Accourts Settings	Gauge meter	
	New Dashboard	September 24th 2019	Priote 1		Terretore Chart	
Console	Straning Log 2 of Zentries Transloca 1 March		Otage	Multi-line Chart	2 Click Add widget select Timeline Chart	
Account.				Support	Table Chart	z. click Add widget, select filleline chan
					Heat Map	
Account					Google Maps	
					Tracker mes	
					On/Off Bern	
1. Ente	er Dashboards, clic	k "create das	shboard"			

		85	2	
Add a Widget	Size		humidity Dente	see Carge
Timeline Tale humidity	Metalum (23% ander) Color Stimeline widges 7/05/96C	, all B	Sechloards Add Weight-	 Change the title to "humidity" and click "save changes".
Charvel Furnidby	Reserves + humbly	• Og	Number 10 Controller 45 Notewark 40	A Lotert
	Car	ool Done Unge	Necoure 30	
3. Select the relate	ed options according to content of	f chart. 🛛 🍯	lugent 25	1635 1636

Note: choose the correct channel and resource. (The two should be the same.)

Record the data of the Soil Moisture

Function description: Create a channel-humidity and time table. When connected with Internet, the moisture will be updated to Beebotte platform, and we will check the change of the moisture through the curve graph in Dashboards.

Makecode Programs: Record the data of the Soil Moisture

Programs for reference

Note: IoT_id should be API Key; IoT_pwd should be Secret Key; TOPIC is the name of Channel/Resource, there is a / between them.

Chose Beebotte as the server in the Program.



• Record the data of the Soil Moisture: enter Dashboards, click humidity check the data.

Channells	Dashboards Create and manage your deahboarde				Create Dashboard
at Dashboards	TITLE	. DESCRIPTION	CREATED ON	0 SCOPE	Searchi UNEWS
R Bennin Fren	-		September 24th 2019	Private	9
D standars man	humidity		September 25th 2019	Public	12
>_ Consule	New Deshboard		September 24th 2019	Private	9
Q [®] Account	Showing 1 to 3 of 3 entries				Previous 1 Next

Basic Tutorials

Drive a motor

makecode programs: drive a motor

Programs for reference:



Result: the motor rotates forward at speed of 255 for 1 second, and then rotate backward for 1 second.

Light and Temperature Monitor

makecode programs: light and temperature monitor

Programs for reference:



Function description: use micro:bit to detect the light and temperature value, display the values on the OLED.

Results: OLED displays the current temperature and light in real-time.

FAQ

For any questions, advice or cool ideas to share, please visit the **DFRobot Forum**

More Documents