







Contents

1.	TECHNICAL SUPPORT	4
2.	VISUAL SYMBOLS DEFINITION	4
3.	ACRONYMS AND ABREVIATIONS	5
4.	 Beandevice[®] 2.4GHz ONE-T/ONE-TH/ONE-TIR. 4.1 UNBOX YOUR BeanDevice[®]. 4.2 PRODUCT OVERVIEW. 4.3 NON-CONTACT BUTTONS AND LEDS DESCRIPTION. 4.4 OPERATIONS ON NON-CONTACT BUTTONS AND NETWORK LEDS. 	6 6 7 7 8
5.	WIRELESS IOT COORDINATOR (BEANGATEWAY®)	9 9 10 12 13
6.	START YOUR APPLICATION	14
7.	 A QUICK SETTINGS OVERVIEW. 7.1 DATA ACQUISITION CONFIGURATION. 7.2 USING THE DATALOGGER. 	20 20 22
8.	WHERE TO FIND MORE TECHNICAL INFORMATION?	25





List of Figures

Figure 01	÷	BeanDevice [®] Box	6
Figure 02	;	BeanDevice® ONE-TH	7
Figure 03	÷	BeanGateway [®] Outdoor Box	9
Figure 04	ł	BeanGateway [®] accessories	10
Figure 05	÷	BeanGateway [®] Indoor Box	10
Figure 06	÷	BeanGateway [®] Indoor version	11
Figure 07	ł	BeanGateway [®] Indoor Accessories	11
Figure 08	÷	Static IP allocation on your PC	15
Figure 09	÷	Dynamic IP allocation on your PC	15
Figure 10	ł	Turn on the BeanGatewa [®]	16
Figure 11	ł	Localization process	16
Figure 12	ł	Start the Server	18
Figure 13	ł	BeanGateway [®] Dashboard	18
Figure 14	ł	Powen on the BeanDevice [®]	19
Figure 15	ł	Connect the BeanDevice [®] to the BeanGateway [®]	19
Figure 16	ł	Add to Firewall	19
Figure 17	ł	Expert View	20
Figure 18	ł	DAQ frame	20
Figure 19	ł	DAQ Configuration	21
Figure 20	ł	Real-Time Graph	21
Figure 21	ł	DataLogger Options	22
Figure 22	ł	DataLogger Status	22
Figure 23	ł	DataLogger Tab	22
Figure 24		DataLogger status	23
Figure 25		DataLogger Manager	23
Figure 26		DataLogger Management	23
Figure 27		DataLogger memory configuration	24





Disclaimer

The information contained in this document is the proprietary information of BeanAir[®].

The contents are confidential and any disclosure to persons other than the officers, employees, agents or subcontractors of the owner or licensee of this document, without the prior written consent of BeanAir[®] GmbH, is strictly prohibited.

BeanAir[®] makes every effort to ensure the quality of the information it makes available. Notwithstanding the foregoing, BeanAir[®] does not make any warranty as to the information contained herein, and does not accept any liability for any injury, loss or damage of any kind incurred by use of or reliance upon the information.

BeanAir[®] disclaims any and all responsibility for the application of the devices characterized in this document, and notes that the application of the device must comply with the safety standards of the applicable country, and where applicable, with the relevant wiring rules.

BeanAir[®] reserves the right to make modifications, additions and deletions to this document due to typographical errors, inaccurate information, or improvements to programs and/ or equipment at any time and without notice.

Such changes will, nevertheless be incorporated into new editions of this document. Copyright: Transmittal, reproduction, dissemination and/or editing of this document as well as utilization of its contents and communication thereof to others without express authorization are prohibited. Offenders will be held liable for payment of damages. All rights are reserved.

Copyright © BeanAir GmBh 2021





1. TECHNICAL SUPPORT

For general contact, technical support, to report documentation errors and to order manuals, contact BeanAir[®] Technical Support Center (BTSC) at: tech-support@beanair.com

For detailed information about where you can buy the BeanAir[®] equipment/software or for recommendations on accessories and components visit: www.beanair.com

To register for product news and announcements or for product questions contact BeanAir's Technical Support Center (BTSC).

Our aim is to make this user manual as helpful as possible. Please keep us informed of your comments and suggestions for improvements. BeanAir[®] appreciates feedback from the users.

2. VISUAL SYMBOLS DEFINITION

Symbols	Definition
	Caution or Warning – Alerts the user with important information about BeanAir [®] wireless IOT Sensors. if this information is not followed, the equipment /software may fail or malfunction
	Danger – This information MUST be followed if not you may damage the equipment permanently or bodily injury may occur.
()	Tip or Information – Provides advice and suggestions that may be useful when installing BeanAir Wireless IOT Sensors.



3. ACRONYMS AND ABREVIATIONS

AES	Advanced Encryption Standard
CCA	Clear Channel Assessment
CSMA/CA	Carrier Sense Multiple Access/Collision Avoidance
GTS	Guaranteed Time-Slot
kSps	Kilo samples per second
LDCDA	Low duty cycle data acquisition
LLC	Logical Link Control
LQI	Link quality indicator
MAC	Media Access Control
PER	Packet error rate
POE	Power Over Ethernet
RF	Radio Frequency
SD	Secure Digital
UPS	Uninterruptible power supply
USB OTG	USB On The Go
WDAQ	Wireless DAQ
WSN	Wireless Sensor Networks





4. Beandevice® 2.4GHz ONE-T/ONE-TH/ONE-TIR

4.1 UNBOX YOUR BeanDevice®

Open the BeanDevice[®] box





Figure 2 : BeanDevice[®] ONE-TH

Use the magnet to:

- Power ON/Power OFF the BeanDevice[®]
 Pair the BeanDevice[®] to your BeanGateway[®]





4.2 PRODUCT OVERVIEW

BeanDevice[®] 2.4GHz ONE-T Ambient Temperature BeanDevice[®]2.4GHz ONE-T-ST BeanDevice[®]2.4GHz ONE-T-HA BeanDevice[®]2.4GHz ONE-T-HAEY BeanDevice[®]2.4GHz ONE-T-ST-CL BeanDevice[®]2.4GHz ONE-T-STCORE









4.3 NON-CONTACT BUTTONS AND LEDS DESCRIPTION





4.4 OPERATIONS ON NON-CONTACT BUTTONS AND LEDS

Operating status	Network LED	Sensor Activity LED
The BeanDevice® is power off	LED OFF	
The BeanDevice [®] is power on with wireless TX/RX activity	Green LED : Wireless Network Activity Red LED : Wireless transmission failure	
The BeanDevice® is power on	Green LED blinks twice	Green LED ON :
The BeanDevice® is power off (was power on before)	Red LED ON during 2s	Measurement is UK <mark>Red LED</mark> ON : Measurement is not OK
The BeanDevice® is power on & a network Reset is performed by holding the magnet on Network Push Button during 2s	Red LED ON during 2s then Green LED ON during 2s then Green LED blinks constantly until connection to BeanGateway ®	(sensor failure)
The BeanDevice® is power on & waits for a network activity	Green LED blinks	



5. WIRELESS COORDINATOR (BEANGATEWAY®)

The BeanGateway[®] is a wireless coordinator used to build and manage Beanair[®] Wireless IOT Sensors. It supports the conversation of data exchanged, compression and IP connectivity with the network thereby reducing the intelligence required in these platforms, maintenance and therefore the associated cost.

The BeanGateway is available in two versions : Indoor (IP40) and Outdoor (IP67)

5.1 UNBOX YOUR BEANGATEWAY[®] OUTDOOR







The BeanGateway[®] Outdoor is provided with a wall plug-in power supply, a power adapter for your country, a N-Type antenna, a Wall mounting kit and an Ethernet cable.



5.2 UNBOX YOUR BEANGATEWAY[®] INDOOR









The BeanGateway[®] Indoor is provided with a wall plug-in power supply, a power adapter for your country, a RPSMA antenna and an Ethernet cable.







5.3 INDOOR VERSION





5.4 OUTDOOR VERSION







6. START YOUR APPLICATION

1. Insert the BeanScape[®] 2.4GHz DVD in your DVD drive then follow the installation instructions.



2. Connect your Beangateway[®] directly to your PC or to your WIFI/LAN router by using an Ethernet cable.



If you connect your BeanGateway[®] to your WIFI/LAN router, you can go for Static or Dynamic IP. If your Beangateway[®] is directly connected to your PC, Static IP should be selected as there is no DHCP server hosted on your PC.







Direct connection :

The BeanGateway[®] comes with the default IP address 192.168.4.123 Assign manually a static IP address to your PC with the same subnet as your BeanGateway[®], 192.168.4.2

Eutemet Properues	^	Internet Protocol Version 4 (TCP	/IPv4) Properties
letworking		General	
Connect using:		You can get IP settings assigned	automatically if your network supports
Intel(R) Ethemet Connection I217-LM		this capability. Otherwise, you n for the appropriate IP settings.	eed to ask your network administrator
	Configure	O Charles I The difference in	
This connection uses the following items:		O Obtain an IP address autor	natically
Constant Manual Naturala		Use the following IP address	is:
File and Printer Sharing for Microsoft 1	letworks	IP address:	192.168.4.2
GoS Packet Scheduler Internet Protocol Version 4 (TCP/IPva	D	Subnet mask:	255.255.255.0
C _ Microsoft Network Adapter Multiplexo	Protocol	Default gateway:	
Microsoft LLDP Protocol Driver	i) ~	Obtain DNS server address	automatically
<	>	Use the following DNS served	er addresses:
Install Uninstall	Properties	Preferred DNS server:	
Description	177.14.1	Alternate DNS server:	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Vide area network protocol/internet Proto wide area network protocol that provides co	col. The default mmunication		
across diverse interconnected networks.		Validate settings upon exi	Advanced

Figure 8 : Static IP allocation on your PC

Via LAN Router connection :

You can go for Dynamic IP address on both PC and BeanGateway®

Ethernet Properties X	Internet Protocol Version 4 (TCP/IP.rd) Properties
Networking	General Alternate Configuration
Connect using:	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Configure This connection uses the following items:	Obtain an IP address automatically Ouse the following IP address:
Client for Microsoft Networks File and Printer Sharing for Microsoft Networks GoS Packet Scheduler	IP address: Subnet mask:
Internet Protocol Version 4 (TCP/IPv4) Microsoft Network Adapter Multiplexor Protocol Microsoft LLDP Protocol Driver	Default gateway:
Internet Protocol Version 6 (TCP/IPv6) V	Obtain DNS server address automatically Ouse the following DNS server addresses:
Install Uninstall Properties	Preferred DNS server:
Description Transmission Control Protocol /Internet Protocol The default	Alternate DNS server:
wide area network protocol that provides communication across diverse interconnected networks.	Validate settings upon exit Advanced
OK Cancel	OK Cancel

Figure 9 : Dynamic IP allocation on your PC



BeanDevice® 24



QUICKSTART

4. Turn on the BeanGateway[®] by pushing on the ON/OFF button if you are using the outdoor version or slide the ON/OFF button to the right side if you are using the indoor version.

EcoSensor



Figure 10 : Turn on the BeanGateway[®]

Localize your BeanGateway[®] on your LAN

5. Go to Tools tab then select BeanGateway[®] Ethernet/LAN Config. and select your PC IP address from the scroll down menu then click on localize, your BeanGateway® MAC ID will appear on a scrolling list, select it then click on validate.







Via LAN Router connection :

Make sure that DHCP check box is enabled

Direct connection :

Allocate a static IP to your BeanGateway[®] before to click on validate

beanoacenay earcines ever configuration
Localize BeanGateway
192.168.1.99 LAN Card + Localize
Panid : 391A, Macid : 00158D00000E0EA0 🗸
Configuration
TCP/IP Configuration
UHCP Enabled
BeanGateway TCP/IP
IP address : [192.168.1
Sub network mask : [255.255.255.0
Default gateway IP : (192.168.11
DNS Enabled DNS IP AUTO

Page Gateway Ethernet / AN configuration

BeanGateway Ethernet/LAN configuration

Localize BeanGateway
192.168.1.99 LAN Card · Localize
Panld : 070D, MacId : 00158D00000E070D 🗸
Configuration
TCP/IP Configuration
DHCP Enabled
BeanGateway TCP/IP
IP address : [192.168.1123
Sub network mask : 255.255.255.0
Default gateway IP : (192.168.11

If the BeanGateway[®] scroll down menu appears empty, push on the CNC/Network push button for 10s until the network LED turns to red color. You will restore LAN settings from the factory (static IP address: 192.168.1.123) then redo the localization process.

Make sure you have no antivirus/firewall blocking the network activity between the BeanGateway[®] and the BeanScape[®] software.



Figure 12 : Start the Server

The Beanscape $^{\rm \$}$ launches, and creates a mapping of the BeanGateway $^{\rm \$}$ on the bottom of the left side pane.

Click on the BeanGateway $^{\rm \tiny B}$ identified by the PAN ID in the lower left screen. the screen for monitoring and configuring your BeanGateway $^{\rm \tiny B}$ will show up.

Seanscape 2.4	IGH2		-	0	×
Fie BeenSco	Bit App Tesh View Help Server	Benfattway spoten postfel Swerr Next (#SSENNER278) Ben (50: 1 + CFB)			
6		Annon And was 1005 Soft was 1001			
		Etriability when Millioniting Lawl (So: 1-1990			
* * *					
	Component list Sot To				





7. Power on the Beandevice[®]: hold the magnet next to ON/OFF non-contact push button for more than 2 seconds. The Activity/Failure Led will blink in green color.

Figure 14 : Power on your BeanDevice[®]

8. For the first use, you need to pair your Beandevice[®] to your BeanGateway[®]. Hold the magnet on the label Network

for more than 2 seconds until that Acivity/Failure Led blinks in Red color. Default factory paramaters will be restored.

Figure 15 : Connect the BeanDevice[®] to the BeanGateway[®]



9. Click on the BeanDevice[®] that showed up on the left side pane

Beanscape 2	L4GHz			
rue Beanto	Caper App 10015 Advanced func. Off.Data Ana			
	Server Start	ted bestage section a system section a system section and section		
24	MAC_ID:0x00158D00000E0688	Mac la: CortSJD000000EE0550 Network quality: (0) Diagnostic cycle: Co 40.50 Litums.ss		
	Ch_Temp_0	Site ID: MAC_ID: 8x 40050104040FBJ FER: MA2 (%) Listeming Rate: 48 48 481 https://www.ss		
	Ch_Temp_2 Ch_Temp_3	Peret bit OND2		
Ð	MAC_ID : 0 x 00158D00000E0C37	Partone H Inc Dag, Date: 10/0782 9:5722 M Mess Range: 45/-15 *		
• Ì)		Version Poer supply Mana Dut of fragancy: Net Re		
~ ~		Hard, vors. VIR3 Power mode: Ber Saver Beskled		
		Soft vers V785 Battary Kistage: 4/77 V		
		Eattery lood		
2				
21		Status: Roody Memory option: "Stop DW" recording Memory used: 8 (%)		
		Listening Mode Status Temperature Scorner Configuration		
		Darting Savin Generation Distallogger System config. Power mode manage Unitine Data Analysis Darting, frame is: D Distorm deploy Notes Data Acra, config. Serior Config		
		Durrent didta ona, mode		
		BAQ Status: Stopped Location: Level Location		
		Beta koy ovder NA ddd thrmmas Transfolder Geler (BIG)		
		Samping rate: M le		
12	Component List	teta king duration: Na ddd/thmmm.ss		
٠.	Sort			
* Ø	Access to different sites			
	58e 0×0700			
°`@``				
****e			Ε,	

Figure 16 : Add to Firewall

Now you can see the screen for monitoring and configuring the Beandevice $^{\mbox{\tiny B}}$ and its related sensor channels.





7. A QUICK SETTINGS OVERVIEW 7.1 DATA ACQUISITION CONFIGURATION

1. From View tab change the view from Standard view to Expert view by entering the right serial key provided with your BeanScape[®] DVD

Bean	iscape 2.4GHz					1.000
File	BeanScape® App	Tools A	Advanced func.	Off.Data Analysis	View	Help
					S	Standard view
	Serve	ſ			🗸 E	xpert view
	Ex	pert View C	onfig		×	
			Expert User Auth	nentication		
		Serial I	(ey (********			
			Swite	h to expert view	ń	
				II to expert view	J	

Figure 17 : Expert View

2. Go to the configuration frame and select Data Acq. Config tab

The Democra	per app tions advances talle of bete analysis the	n top
	Server	BeanDervice system profile
<u></u>	Started O	
S		Wac Lis (2015/000000000000 Werkeck guainy: 100 Degrastic cycle: (20.20.00 Hammas
		Sta 12: W4C_10: 8 > 265500000113 Ffit: 8.3 S Listening Ratio: 82-88-84 Ninmass
		Pan Lá (283 Power Supply Disgnostic Seman Info
	O_Temp	Net Id: DRI Procedure State Annual Research Tege De
A	Ch_DP.	Pattern: CAE IN USG COM IN UNIVERSITE COMMAN
• 1	Oh_Hum. Oh_Temp.	Version Program (array) In 270 Werken (200 Karry) Karry) Karry (200 Karry) Karry) Karry (200 Karry) Ka
		Nard, vers. [23] Becomy receipt (200)
2		
		Status: Stopped Vernory spten: "Stop at end"recording Vernory used: 🖲 🛞
		Ustranng Mode Status Temperature Scanner Configuration
		Watting Sent Belefad Batalogger System config. Power mode managt
		Config. frame is: Cutom display Notes Data keg. config. Sense/1040 config.
		Current data acquitata acquitata mode configuration
1000		DAQ Status Statud Data Ace, mode: LosDutyCycle Start Start
-		Bata koa mode [Laskbutykyele] Bata koa evole : doddhimmena
		Data loca, cycle : R88884 ddd.bh.mm ss Data localaition mode spitons
		Swepting rate : MA (R) O To Day O Log Dely O To 6 Log
12	Component List	Data Acq. duation : NA ddd.bhmmss
- S	Sort 🕀 🖃	
***	Access to different sites	
	Ste : 0 x 0283	
°⊗° .		

Constant of Ca		
Server status : Sta	rted	

Figure 18 : DAQ frame





3. Setup your Acquisition mode





4. Click on the sensor channel to see real-time measurement graph

File BeanSc	spe® App Tools Off.Data Analysis View Help		
\$	Started MAC, D: 0: 0: 0000000064M4 MC, D: 0: 0: 0000000068HF MC, D: 0: 0: 0000000008HF O, DP, 0: 0000000008HF O, DP, 0: 0000000000000000000000000000000000	Attentions Materia free Security	
•	U	Free Manues Made Text - Ency	
		LowDutyCycle	Unit: %rH
Ĭ.			46.5000
			46.4000
6			46.3000 F2
5	Component List Sort Access to different sites		46 1000
	Ster : 0 x 0283		46.0000
		1154 00 Nov 65 2020 11 56 00 Nov 65 2020 11 56 00 Nov 65 2020 12 00 00 Nov 16 2020 Terms	12:02:00 Nov 05 2020

Figure 20 : Real-Time Graph

()

Find more info on the different data acquisition modes available on the BeanDevice[®] 2.4GHz :

http://www.wireless-iot.beanair.com/files/TN-RF-008-Data-acquisition-modes-available-on-the-BeanDevice.pdf



7.2 USING THE DATALOGGER

The BeanDevice[®] 2.4GHz EcoSensors comes equipped with embedded datalogger of up to 1 million data points (with events dating) in the Xrange version.

You can start the datalogging from the previously demonstrated data acquisition tab : you can select **Log only** as data acquisition option for only using the embedded datalogger without transmitting data to BeanScape[®] or you can select **TX & LOG** for jointly save data on your BeanScape[®] Host computer and also in the datalogger at the same time.



Figure 21 : DataLogger Options

From this status frame, you can monitor the Datalogger status, Memory option when the Datalogger is full and percent of memory used.

Datalogger					
Status:	Active Tx & Log	Memory option:	"Stop at end" recording	Memory used: 0.05	(%)

Figure 22 : DataLogger Status

These settings can be changed from the DataLogger tab present on configuration panel :

Custom display Notes	Data Ac	q. config.	Sens/DAQ config.
Datalogger	System config.	Power	mode managt
DataLogger status			
DataLogger status:			
Download progress:	Ν	IA	
Download status:	NA		
DataLogger manager			
Stop		Erase	
Download manager		Erase	

Figure 23 : DataLogger tab





Brief information on the status of the datalogger and download progress can be seen on the tab

DataLogger status	
DataLogger status:	Active Tx && Log
Download progress:	
Download status:	Completed, seq. : 1/1

Figure 24 : DataLogger status

Four status are available:

- o Ready: the Datalogger is ready to register data
- o Active logs only: Data acquisition is logged only
- o Active TX and Log: Data acquisition is logged & transmitted by Radio
- o Stopped: Datalogger is stopped

Two buttons, one to stop the logging and the other is to erase stored data and initialize the Datalogger



Figure 25 : DataLogger manager

Below, on the download manager frame, different options to control the datalogger are available :







Download: Starts to download all the logs on the BeanDevice[®] flash memory to your computer Download then erase: downloads all the logs and the erase them. Cancel: Stops the download process Stop DAQ, download then erase: stop recording data ,download the data logged then erase it

Below, we can configure the datalogger when it's full.

Several choices are available :

DataLogger memory configuration			
• "Stop DAQ" recording • Stop at end" recording			
Stop DAQ DE" recording	Validate		
(

Figure 27 : DataLogger memory configuration

"Stop DAQ" recording : Stop recording when the memory is full "stop at end" recording: Data recording stops when the memory is full "Stop DAQ DE"recording: Stop recording ,Download then erase the stored data



8. WHERE TO FIND MORE TECHNICAL INFORMATION ?

- For more technical litterature, please visit our White Paper Page: http://beanair.com/wireless-iot-sensors-white-paper.html
- Please refer to the BeanDevice[®] 2.4GHz EcoSensors user manual section for more information https://www.wireless-iot.beanair.com/files/UM-RF-03-ENG-EcoSensor-Wireless-Sensors-for-Environment.pdf
- For detailed information on the available Data Acquisition mode ,please refer to our technical note http://www.wireless-iot.beanair.com/files/TN-RF-008-Data-acquisition-modes-availableon-the-BeanDevice.pdf

Facing technical problems ? Contact our technical support team at : tech-support@beanair.com





RETHINKING SENSING TECHNOLOGY



BeanAir Germany Wolfener Straße 32-34 12681 Berlin - Germany



Visit us: www.beanair.com



Office line: +49 (0) 30 98366680