

Rethinking Sensing Technology



BeanDevice® Wilow® QuickStart

DOCUMENT				
Document ID	NONE	Version	V1.3	
External reference	Quick-Start-WiLow-Wifi-Low- Power-Sensor	Date	31/10/2018	
Author	Fahd ESSID, Applications engineer			
		Project Code		
Document's name	Wilow Ouick Start			

Validation				
Fonction Destination		For validatio n	For info	
Writer	Fahd Essid, Applications Engineer			
Reader	Antje Jacob, Electronic technician	✓		
Validation	Youssef Shahine, Technical Suport engineer		✓	

DIFFUSION				
Fonction Destination For For in			For info	
Reader n°1	Mohamed-Yosri Jaouadi., Software Architect	✓		
Reader n°2	Antje Jacob, Electronic technician	✓		

UPDATES			
Version	Date	Author	Evolution & Status
V1.0	07/01/2016	Salah Riahi	First version of document
V1.1	26/12/2017	Aymen Jegham	Updated info and screenshot
V1.2	18/08/2018	Aymen Jegham	MQTT info addedDatalogger info added
V1.3	31/10/2018	Fahd ESSID	 Screenschots revision Chart update WLAN network configuration update Data acquisition update DataLogger & MQTT revision

Contents

1.	TECHNICAL SUPPORT	6
2.	VISUAL SYMBOLS DEFINITION	7
3.	ACRONYMS AND ABBREVIATIONS	8
4.	ACCESSORIES DESCRIPTION	9
	4.1 USB 2.0 cable	9
	4.2 Magnet	
	4.3 Locknuts and screws	10
	4.4 M8 protection cap	11
	4.5 Connectors and leds	11
	4.6 Important Notice: USB to M8 Cable insertion	12
5.	HOW TO CONNECT MY BEANDEVICE® WILOW® TO MY WIFI NETWORK	13
6.	A QUICK SETTINGS OVERVIEW	
	6.1 How to setup a data acquisition	
	6.2 Using the datalogger	
	6.3 Firmware update	
	6.4 MQTT Module	
	6.4.1 MQTT broker	23
	6.4.2 MQTT STATUS	
	6.4.3 topic for static measurement	24
	6.4.4 topic for Dynamic measurement	
	6.4.5 Subscribe	25
7.	TECHNICAL NOTES AND VIDEOS	26

BeanDevice® Wilow® QuickStart

List of Figures

Figure 2: USB to M8 cable. 9 Figure 3: Power on/off and Network Reset. 10 Figure 4: Screws and Locknuts 10 Figure 5: Protection Cap. 11 Figure 6: Connectors and Leds overview on BeanDevice® Wilow® 11 Figure 7: BeanScape® icon. 13 Figure 9: WLAN Configuration on BeanScape® menu. 13 Figure 10: Wilow Wlan/LAN Configuration 14 Figure 11: Frame LAN/WLAN config. 14 Figure 12: COM port configuration 15 Figure 13: Enabling DHCP 15 Figure 14: WIFI configuration success. 16 Figure 15: Configuration success. 16 Figure 16: Closing WLAN configuration window 17 Figure 17: Starting the Server. 17 Figure 18: BeanDevice® WiLow® Profile. 18 Figure 19: Data acquisition configuration tab. 18 Figure 21: Data acquisition on BeanScape® 20 Figure 22: DataLogger information on BeanScape® 20 Figure 27: DataLogger Folder on PC. 21 Figure 27: DataLogger Folder on PC. 22 Figure 27: DataLogger manager. 21 Figure 28: DataLogger memory configuration	Figure 1: BeanDevice® Wilow® AX-3D	9
Figure 3: Power on/off and Network Reset 10 Figure 4: Screws and Locknuts 10 Figure 5: Protection Cap. 11 Figure 6: Connectors and Leds overview on BeanDevice® Wilow® 11 Figure 7: BeanScape® icon. 13 Figure 9: WLAN Configuration on BeanScape® menu 13 Figure 10: Wilow Wlan/LAN Configuration 14 Figure 11: Frame LAN/WLAN config 14 Figure 12: COM port configuration 15 Figure 13: Enabling DHCP 15 Figure 14: WIFI configuration 15 Figure 15: Configuration Success. 16 Figure 16: Closing WLAN configuration window 17 Figure 16: Closing WLAN configuration tab 18 Figure 17: Starting the Server. 17 Figure 18: BeanDevice@ WILow@ Profile 18 Figure 20: Data acquisition configuration tab 18 Figure 21: Data acquisition on BeanScape@ 20 Figure 22: Datal acquisition on BeanScape@ 20 Figure 23: Datal ogger tabs 20 Figure 24: Datal Logger tabs 20 Figure 25: Datal Logger status 20 Figure 27: Datal Logger download manager 21	Figure 2: USB to M8 cable	9
Figure 4 :Screws and Locknuts 10 Figure 5: Protection Cap 11 Figure 5: Connectors and Leds overview on BeanDevice® Wilow® 11 Figure 7: BeanScape® icon 13 Figure 8: Connecting BeanDevice® WiLow® to a PC 13 Figure 9: WLAN Configuration on BeanScape® menu 13 Figure 10: Wilow Wlan/LAN Configuration 14 Figure 11: Frame LAN/WLAN configuration 14 Figure 12: COM port configuration 15 Figure 13: Enabling DHCP 15 Figure 14: WIFI configuration 15 Figure 15: Configuration Success 15 Figure 16: Closing WLAN configuration window 17 Figure 17: Starting the Server 17 Figure 18: BeanDevice® WILow® Profile 18 Figure 19: Data acquisition configuration tab 18 Figure 21: Data acquisition mode options 19 Figure 22: DataLogger information on BeanScape® 20 Figure 24: DataLogger manager 21 Figure 25: DataLogger folder on PC 20 Figure 26: DataLogger manager 21 Figure 27: DataLogger manager 21 Figure 26: DataLogger memory configuration <td< td=""><td>Figure 3: Power on/off and Network Reset</td><td>10</td></td<>	Figure 3: Power on/off and Network Reset	10
Figure 5: Protection Cap. 11 Figure 6: Connectors and Leds overview on BeanDevice® Wilow® 11 Figure 7: BeanScape® icon. 13 Figure 8: Connecting BeanDevice® WiLow® to a PC. 13 Figure 9: WLAN Configuration on BeanScape® menu 13 Figure 10: Wilow Wlan/LAN Configuration 14 Figure 11: Frame LAN/WLAN config. 14 Figure 12: COM port configuration 15 Figure 13: Enabling DHCP 15 Figure 14: WIFI configuration 15 Figure 15: Configuration Success. 16 Figure 16: Closing WLAN configuration window 17 Figure 17: Starting the Server. 17 Figure 18: BeanDevice® WiLow® Profile 18 Figure 20: Data acquisition parameters. 19 Figure 21: Data acquisition node options 19 Figure 22: DataLogger information on BeanScape® 20 Figure 24: DataLogger tabus 20 Figure 25: DataLogger manager. 21 Figure 26: DataLogger tabus 20 Figure 27: DataLogger memory configuration 21 Figure 26: DataLogger formation 22 Figure 27: DataLogger memory configuration <td< td=""><td>Figure 4 :Screws and Locknuts</td><td>10</td></td<>	Figure 4 :Screws and Locknuts	10
Figure 6: Connectors and Leds overview on BeanDevice® Wilow® 11 Figure 7: BeanScape® icon 13 Figure 8: Connecting BeanDevice® WiLow® to a PC. 13 Figure 9: WLAN Configuration on BeanScape® menu 13 Figure 10: Wilow Wlan/LAN Configuration 14 Figure 11: Frame LAN/WLAN configuration 14 Figure 12: COM port configuration 15 Figure 13: Enabling DHCP 15 Figure 14: WIFI configuration Success 16 Figure 15: Configuration Success 16 Figure 16: Closing WLAN configuration window 17 Figure 17: Starting the Server. 17 Figure 18: BeanDevice® WiLow® Profile 18 Figure 20: Data acquisition parameters. 19 Figure 21: Data acquisition non BeanScape® 20 Figure 22: DataLogger information on BeanScape® 20 Figure 24: DataLogger tab 20 Figure 25: DataLogger tab 20 Figure 26: DataLogger tabus 20 Figure 27: DataLogger tabus 20 Figure 26: DataLogger memory configuration 21 Figure 27: DataLogger memory configuration 22 Figure 28: DataLogger folder on PC <td>Figure 5: Protection Cap</td> <td>11</td>	Figure 5: Protection Cap	11
Figure 7: BeanScape® icon	Figure 6: Connectors and Leds overview on BeanDevice® Wilow®	11
Figure 8: Connecting BeanDevice® WiLow® to a PC. 13 Figure 9: WLAN Configuration on BeanScape® menu 13 Figure 10: Wilow Wlan/LAN Configuration 14 Figure 11: Frame LANWLAN config 14 Figure 12: COM port configuration 15 Figure 13: Enabling DHCP 15 Figure 14: WIFI configuration 15 Figure 15: Configuration Success 16 Figure 16: Closing WLAN configuration window 17 Figure 17: Starting the Server. 17 Figure 18: BeanDevice@ WiLow® Profile 18 Figure 20: Data acquisition configuration tab 18 Figure 21: Data acquisition mode options 19 Figure 22: DataLogger information on BeanScape® 20 Figure 23: DataLogger tab 20 Figure 26: DataLogger manager. 21 Figure 27: DataLogger manager. 21 Figure 28: DataLogger model on PC 22 Figure 29: BeanDevice MQTT module configuration 22 Figure 30: MQTT configuration frame 23 Figure 31: Broker configuration frame 23 Figure 32: Totatic for static measurement configuration frame 24 Figure 31: Broker config	Figure 7: BeanScape® icon	13
Figure 9: WLAN Configuration on BeanScape® menu 13 Figure 10: Wilow Wlan/LAN Configuration 14 Figure 11: Frame LAN/WLAN config 14 Figure 12: COM port configuration 15 Figure 13: Enabling DHCP 15 Figure 14: WIFI configuration 15 Figure 15: Configuration Success 16 Figure 16: Closing WLAN configuration window 17 Figure 17: Starting the Server 17 Figure 18: BeanDevice@ WiLow® Profile 18 Figure 19: Data acquisition configuration tab 18 Figure 20: Data acquisition mode options 19 Figure 21: Data acquisition mode options 19 Figure 22: DataLogger information on BeanScape® 20 Figure 23: DataLogger status 20 Figure 25: DataLogger manager 21 Figure 26: DataLogger memory configuration 22 Figure 27: DataLogger memory configuration 22 Figure 27: DataLogger folder on PC 21 Figure 26: DataLogger memory configuration 22 Figure 27: DataLogger folder on PC 22 Figure 28: DataLogger folder on PC 22 Figure 29: BeanDevice MQTT module configurati	Figure 8: Connecting BeanDevice® WiLow® to a PC	13
Figure 10 :Wilow Wlan/LAN Configuration 14 Figure 11: Frame LAN/WLAN config. 14 Figure 12: COM port configuration 15 Figure 13: Enabling DHCP 15 Figure 14: WIFI configuration 15 Figure 15: Configuration Success. 16 Figure 16: Closing WLAN configuration window 17 Figure 17: Starting the Server. 17 Figure 18: BeanDevice® WiLow® Profile. 18 Figure 20: Data acquisition configuration tab 18 Figure 21: Data acquisition mode options 19 Figure 22: Data Logger information on BeanScape® 20 Figure 23: DataLogger status 20 Figure 24: DataLogger status 20 Figure 25: DataLogger manager. 21 Figure 26: DataLogger manager. 21 Figure 27: DataLogger momory configuration 22 Figure 28: DataLogger Folder on PC 22 Figure 30: MQTT configuration window 23 Figure 31: Broker configuration window 23 Figure 32: MQTT Status frame 24 Figure 33: Topic for static measurement configuration frame 24 Figure 34: Topic for dynamic measurement configuration fram	Figure 9: WLAN Configuration on BeanScape® menu	13
Figure 11: Frame LAN/WLAN config14Figure 12: COM port configuration15Figure 13: Enabling DHCP15Figure 13: Enabling DHCP15Figure 14: WIFI configuration Success.16Figure 15: Configuration Success.16Figure 16: Closing WLAN configuration window17Figure 17: Starting the Server.17Figure 18: BeanDevice® Willow® Profile18Figure 19: Data acquisition configuration tab18Figure 20: Data acquisition parameters.19Figure 21: Data acquisition mode options19Figure 22: DataLogger information on BeanScape®20Figure 24: DataLogger status20Figure 25: DataLogger manager.21Figure 26: DataLogger rolder on PC21Figure 27: DataLogger Folder on PC21Figure 27: DataLogger Folder on PC22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame23Figure 32: MQTT Status frame24Figure 32: Mort Status measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 10 :Wilow Wlan/LAN Configuration	14
Figure 12: COM port configuration15Figure 13: Enabling DHCP15Figure 14: WIFI configuration15Figure 15: Configuration Success16Figure 16: Closing WLAN configuration window17Figure 17: Starting the Server17Figure 18: BeanDevice® WiLow® Profile18Figure 19: Data acquisition configuration tab18Figure 20: Data acquisition parmeters19Figure 21: Data acquisition mode options19Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger status20Figure 26: DataLogger manager21Figure 27: DataLogger manager21Figure 26: DataLogger folder on PC21Figure 27: DataLogger Folder on PC22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MOTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24 <tr <tr="">Figure 34: Topic for dynamic measurem</tr>	Figure 11: Frame LAN/WLAN config	14
Figure 13: Enabling DHCP15Figure 14: WIFI configuration15Figure 15: Configuration Success.16Figure 16: Closing WLAN configuration window17Figure 17: Starting the Server.17Figure 18: BeanDevice® WiLow® Profile.18Figure 20: Data acquisition configuration tab18Figure 21: Data acquisition parameters.19Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger tab20Figure 24: DataLogger tab20Figure 25: DataLogger manager.21Figure 26: DataLogger manager.21Figure 27: DataLogger manager.21Figure 28: DataLogger manager.21Figure 29: BeanDevice MQTT module configuration22Figure 29: BeanDevice MQTT module configuration23Figure 31: Broker configuration frame23Figure 31: Broker configuration frame24Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 12: COM port configuration	15
Figure 14: WIFI configuration15Figure 15: Configuration Success16Figure 15: Configuration Success16Figure 16: Closing WLAN configuration window17Figure 17: Starting the Server17Figure 18: BeanDevice® WiLow® Profile18Figure 20: Data acquisition configuration tab18Figure 21: Data acquisition parameters19Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger tab20Figure 24: DataLogger status20Figure 25: DataLogger download manager21Figure 26: DataLogger memory configuration21Figure 27: DataLogger memory configuration21Figure 28: DataLogger Folder on PC22Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 13: Enabling DHCP	15
Figure 15: Configuration Success16Figure 16: Closing WLAN configuration window17Figure 17: Starting the Server.17Figure 18: BeanDevice® WiLow® Profile18Figure 19: Data acquisition configuration tab18Figure 20: Data acquisition parameters.19Figure 21: Data acquisition mode options19Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger information on BeanScape®20Figure 24: DataLogger status20Figure 25: DataLogger manager.21Figure 26: DataLogger mony configuration21Figure 27: DataLogger memory configuration21Figure 27: DataLogger remory configuration21Figure 28: Datalogger Folder on PC22Figure 29: BeanDevice MQTT module configuration23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 14: WIFI configuration	15
Figure 16: Closing WLAN configuration window17Figure 17: Starting the Server17Figure 18: BeanDevice® WiLow® Profile18Figure 19: Data acquisition configuration tab18Figure 20: Data acquisition parameters19Figure 21: Data acquisition mode options19Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger tab20Figure 24: DataLogger status20Figure 25: DataLogger manager21Figure 26: DataLogger memory configuration21Figure 27: DataLogger memory configuration21Figure 28: DataLogger memory configuration21Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 33: Topic for static measurement configuration frame24Figure 33: Topic for dynamic measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 15: Configuration Success	16
Figure 17: Starting the Server.17Figure 18: BeanDevice® WiLow® Profile.18Figure 19: Data acquisition configuration tab18Figure 20: Data acquisition parameters.19Figure 21: Data acquisition mode options19Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger tab20Figure 24: DataLogger status20Figure 25: DataLogger status20Figure 26: DataLogger manager.21Figure 27: DataLogger manager.21Figure 27: DataLogger memory configuration21Figure 28: DataLogger memory configuration21Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 16: Closing WLAN configuration window	17
Figure 18: BeanDevice® WiLow® Profile	Figure 17: Starting the Server.	17
Figure 19: Data acquisition configuration tab18Figure 20: Data acquisition parameters19Figure 21: Data acquisition mode options19Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger tab20Figure 24: DataLogger status20Figure 25: DataLogger manager20Figure 26: DataLogger download manager21Figure 27: DataLogger memory configuration21Figure 28: Datalogger Folder on PC22Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 18: BeanDevice® WiLow® Profile	18
Figure 20: Data acquisition parameters19Figure 21: Data acquisition mode options19Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger tab20Figure 24: DataLogger status20Figure 25: DataLogger status20Figure 26: DataLogger manager21Figure 27: DataLogger download manager21Figure 28: DataLogger Folder on PC22Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 19: Data acquisition configuration tab	18
Figure 21: Data acquisition mode options19Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger tab20Figure 24: DataLogger status20Figure 25: DataLogger manager21Figure 26: DataLogger download manager21Figure 27: DataLogger memory configuration21Figure 28: DataLogger Folder on PC22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 20: Data acquisition parameters	19
Figure 22: DataLogger information on BeanScape®20Figure 23: DataLogger tab20Figure 24: DataLogger status20Figure 25: DataLogger manager21Figure 26: DataLogger download manager21Figure 27: DataLogger memory configuration21Figure 28: Datalogger Folder on PC22Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame24	Figure 21: Data acquisition mode options	19
Figure 23: DataLogger tab.20Figure 24: DataLogger status20Figure 25: DataLogger manager.21Figure 26: DataLogger download manager21Figure 27: DataLogger memory configuration21Figure 28: Datalogger Folder on PC.22Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window.23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for duratic measurement configuration frame24Figure 34: Topic for duratic measurement configuration frame25Figure 34: Topic for duratic measurement configuration frame25Figure 34: Topic for duratic measurement configuration frame26Figure 34: Topic for duratic measurement configuration frame26Figure 34: Topic for duratic measurement configuration frame26Figure 34: Topic for duratic measurement configuration frame25Figure 34: Topic for duratic measurement configuration frame26Figure 34: Topic for duratic measurement configuration frame26	Figure 22: DataLogger information on BeanScape®	20
Figure 24: DataLogger status20Figure 25: DataLogger manager21Figure 26: DataLogger download manager21Figure 27: DataLogger memory configuration21Figure 28: Datalogger Folder on PC22Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for dynamic measurement configuration frame25	Figure 23: DataLogger tab	20
Figure 25: DataLogger manager.21Figure 26: DataLogger download manager21Figure 27: DataLogger memory configuration21Figure 28: Datalogger Folder on PC22Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for static measurement configuration frame25	Figure 24: DataLogger status	20
Figure 26: DataLogger download manager21Figure 27: DataLogger memory configuration21Figure 28: Datalogger Folder on PC22Figure 29: BeanDevice MQTT module configuration22Figure 30: MQTT configuration window23Figure 31: Broker configuration frame23Figure 32: MQTT Status frame24Figure 33: Topic for static measurement configuration frame24Figure 34: Topic for static measurement configuration frame25	Figure 25: DataLogger manager	21
Figure 27: DataLogger memory configuration 21 Figure 28: Datalogger Folder on PC 22 Figure 29: BeanDevice MQTT module configuration 22 Figure 30: MQTT configuration window 23 Figure 31: Broker configuration frame 23 Figure 32: MQTT Status frame 24 Figure 33: Topic for static measurement configuration frame 24 Figure 34: Topic for static measurement configuration frame 25	Figure 26: DataLogger download manager	21
Figure 28: Datalogger Folder on PC. 22 Figure 29 :BeanDevice MQTT module configuration 22 Figure 30 :MQTT configuration window. 23 Figure 31: Broker configuration frame 23 Figure 32: MQTT Status frame 24 Figure 33: Topic for static measurement configuration frame 24 Figure 34: Topic for dynamic measurement configuration frame 25	Figure 27: DataLogger memory configuration	21
Figure 29 :BeanDevice MQTT module configuration 22 Figure 30 :MQTT configuration window 23 Figure 31: Broker configuration frame 23 Figure 32: MQTT Status frame 24 Figure 33: Topic for static measurement configuration frame 24 Figure 34: Topic for static measurement configuration frame 24 Figure 34: Topic for dynamic measurement configuration frame 25	Figure 28: Datalogger Folder on PC	22
Figure 30 :MQTT configuration window. 23 Figure 31: Broker configuration frame 23 Figure 32: MQTT Status frame 24 Figure 33: Topic for static measurement configuration frame 24 Figure 34: Topic for static measurement configuration frame 24 Figure 34: Topic for for static measurement configuration frame 24	Figure 29 :BeanDevice MQTT module configuration	22
Figure 31: Broker configuration frame 23 Figure 32: MQTT Status frame 24 Figure 33: Topic for static measurement configuration frame 24 Figure 34: Topic for static measurement configuration frame 24 Figure 34: Topic for static measurement configuration frame 24	Figure 30 :MQTT configuration window	23
Figure 32: MQTT Status frame 24 Figure 33: Topic for static measurement configuration frame 24 Figure 34: Topic for dynamic measurement configuration frame 25	Figure 31: Broker configuration frame	23
Figure 33: Topic for static measurement configuration frame 24 Figure 34: Topic for dynamic measurement configuration frame 25	Figure 32: MQTT Status frame	24
Figure 34: Topic for dynamic measurement configuration frame	Figure 33: Topic for static measurement configuration frame	24
	Figure 34: Topic for dynamic measurement configuration frame	25
Figure 35: Subscribe frame	Figure 35: Subscribe frame	25

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 2017

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.

BeanDevice[®] Wilow[®] QuickStart

2. VISUAL SYMBOLS DEFINITION

Symbols	Definition
	<u>Caution or Warning</u> – Alerts the user with important information about BeanAir wireless sensor networks (WSN), if this information is not followed, the equipment /software may fail or malfunction.
	<u>Danger</u> – This information MUST be followed if not you may damage the equipment permanently or bodily injury may occur.
	<u>Tip or Information</u> – Provides advice and suggestions that may be useful when installing BeanAir Wireless Sensor Networks.

BeanDevice® Wilow® QuickStart

3. ACRONYMS AND ABBREVIATIONS

AES	Advanced Encryption Standard
ССА	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
ΡΟΕ	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. ACCESSORIES DESCRIPTION

The BeanDevice[®] WiLow[®] comes with additional accessories, useful for the proper functioning of the device :

- USB 2.0 Cable
- Magnet
- Four screws+Locknut
- Plastic Cup



Figure 1: BeanDevice® Wilow® AX-3D

4.1 USB 2.0 CABLE

The USB cable is used to power supply the BeanDevice[®] WiLow[®] and to setup the Network configuration. It is an M8-5 Pins plug / USB 2.0 cable, used to connect the BeanDevice[®] WiLow[®] to the computer.

It is importatnt to notice, that the M8-5 Pins side of the cable should be pluged correctly on the device connector, respecting the shape.



Figure 2: USB to M8 cable

4.2 MAGNET

To avoid any accidental misconfiguration while installing and using the BeanDevice[®] Wilow[®], a magnet is used to command the BeanDevice[®] instead of common push buttons.

To put ON/OFF the BeanDevice[®] or to make a Network Reset, all you have to do is to point the magnet toward one of the two white circles as shown on the next picture.



4.3 LOCKNUTS AND SCREWS

Inside the packet, you will find four screws and four locknuts that will be used to mount the BeanDevice[®] WiLow[®] of the four sides.

Correct mounting of the BeanDevice[®] WiLow[®] is essential to the success of all measurements.



Figure 4 :Screws and Locknuts

4.4 M8 PROTECTION CAP

The plastic cap is used to cover the connector of the BeanDevice[®] WiLow[®] as a protection. It should be removed when connecting the USB 2.0 cable.



Figure 5: Protection Cap

Do not forget to tighten correctly the M8 cap otherwise you will loose the waterproofness.

4.5 CONNECTORS AND LEDS



Wilow[®] wireless sensors

This device comes with a USB 2.0 connector for device network configuration, Two Radome antennas to connect to the Wi-Fi access points and Leds to show the battery's level and the BeanDevice status(ON or OFF).

4.6 IMPORTANT NOTICE: USB TO M8 CABLE INSERTION



5. HOW TO CONNECT MY BEANDEVICE® WILOW® TO MY WIFI NETWORK

To connect the BeanDevice[®] WiLow, for the first time or after a network reset, to your WIFI Network it is recommended to follow the next steps of configuration:

1. Firstly, install BeanScape[®] WiLow[®] software, then run it by double clicking on the BeanScape[®] icon on the desktop.



<u>Figure 7: BeanScape® icon</u>

2. The next step is to start the BeanDevice[®] WiLow[®] by pointing the magnet toward the On/off Button, and connecting it via the M8/USB cable to your computer.



Figure 8: Connecting BeanDevice® WiLow® to a PC

3. On BeanScape® software Menu bar, select Tools and choose the option LAN/WLAN Config



Figure 9: WLAN Configuration on BeanScape® menu

4. This configuration window will appear, and you user have to to fulfill the necessary information.

💔 Wilow Wlan/LAN configuration		x
✓ Wilow Wlan/LAN configuration Configuration pot selection ③ Serial pot Select serial pot Serial pot : Serial pot : Configurations Tcp/IP configuration IP address : Sub network mask : Default gateway IP : Default gateway IP : IP address : Operation game :	IAN/WLAN LAN/WLAN config < Select > < Empty > Wfi configuration Enabled SSID : Password : security type : None Validate	E
Domain name : Domain name : Validate DNS Enabled DNS IP Auto. DNS IP address :		-

Figure 10 :Wilow Wlan/LAN Configuration

5. On the LAN/WLAN config frame, select your Computer IP address

LAN/WLAN	
LAN/WLAN config	
192.168.1.27	Localize
169.254.190.60	
192.168.1.112	
192.168.1.27	

Figure 11: Frame LAN/WLAN config

6. Select the right serial port assigned to your BeanDevice[®] WiLow[®]. If there is more than one BeanDevice[®] connected to your computer, or another kind of devices using COM serial port, you have to select suitable port assigned to your BeanDevice[®] WiLow[®].

BeanDevice [®] Wilow [®] QuickSta	t	Wilow [®] wireless sensors
	Configuration port selection Serial port Select serial port Serial port : <a href="mailto: COM14	

Figure 12: COM port configuration

7. Enable DHCP on the Tcp/IP configuration frame to let the Access Point allocate a dynamique IP address to the BeanDevice[®] WiLow[®]

Configurations Tcp/IP configuration	
DHCP Enabled	
Wilow Tcp/IP	
IP address :	192.168.1
Sub network mask :	255.255.255.0
Default gateway IP :	192.168.11_

Figure 13: Enabling DHCP

8. Enable the Wi-Fi configuration and tape the WIFI Access Point connection parameters (SSID, Password and Security type), then click on validate

Wifi configuration	
Enabled	
SSID :	MYSSID -
Password :	MYPASSWORD
security type :	WPA2 -
	Validate

Figure 14: WIFI configuration

9. If all parameters was filled correctly, a validation window will pop up and let you know that the configuration operation has been completed successfully.

BeanDevice [®] Wilow [®] QuickStart	Wilow [®] wireless sensors
Serial port configuration	
Operation completed successfully.	
ОК	

Figure 15: Configuration Success

For more information you can watch our Video "Getting started with BeanDevice[®] Wilow "on our YouTbe channel.Click here!

6. A QUICK SETTINGS OVERVIEW

6.1 HOW TO SETUP A DATA ACQUISITION

Please your firewall and allow permission for BeanScape[®] to access your Wireless network

1. After a successful validated configuration, click OK on the pop up window and close the Wilow Wlan/LAN configuration window.



Figure 16: Closing WLAN configuration window

2. Now start the BeanScape[®] Server by clicking directly on the **Green** button or selecting **Start the server** from the Server option on the Menu bar

)ata Ana
Jaca

Figure 17: Starting the Server

3. The BeanDevice $\ensuremath{^{\$}}$ WiLow identified by its MAC ID will appears in the left panel



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

Display configuration Notes	Data Acq. config.	Signal Processing	DataLogger	System conf 1
 Data acquisition mode con 	figuration			A
Data Acq. mode : L	owDutyCycle	- Valida	ite	
Data Acq. cycle :	::	nm:ss		
TX_Ratio				
Data Acq. duration :	:: ddd,hh:n	nm:55		_
Data acquisition mode op	tions			=
) Tx Only 🔘 I	.og Only 💿 Tx	&Log 🔘 SA		
Streaming/Streaming Pac	cket options			
Continuous Monitorin	g 🔘 Burst	One	e Shot	
Store and Forward				
				*

Figure 19: Data acquisition configuration tab

5. Setup your Acquisition mode

Se	elect your data acquisition		Select your Data
	mode	Select your Tx Ratio	acquisition duration
	Example: Streaming	Example: 5	Example: 00:00:01:00
Select your dat acquisition cyc Example: 00:00:10	a Data acquisition mode confi Data Acq. mode : Lo Data Acq. cycle :	guration wDutyCycle Validate	
Select your dat acquisition option Example:Tx Only	TX_Ratio TX_Ratio Data Acq. duration : Data acquisition mode opti Tx Only	ions og Only O Tx & Log O SA	85
Select your streaming pack	et Continuous Monitoring	et options	Shot
acquisition opti	Our and Encoded		

Figure 20: Data acquisition parameters

Find more info on the data acquisition modes available on the BeanDevice[®] Wilow and how to configure it in this technical note : **Click Here**

6.2 USING THE DATALOGGER

The BeanDevice[®] Wilow[®] comes equipped with embedded datalogger of up to 5 million data points (with events dating).

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.

You can set the BeanDevice[®] WiLow[®] to **SA** (Stand Alone) in order to perform measurement on its own not relying at any WiFi network .

. duration : 00:00:20 ddd,hh:mm:ss	Data Acq. duration : ddd, hh:mm:ss
	Data acquisition mode options
Tx Log	💿 Tx Only 💿 Log Only 💿 Tx & Log 💿 SA
Figure 21:	Data acquisition mode options

BeanDevice [®] \	Nilow [®]	QuickStart
---------------------------	---------------------------	------------

Wilow[®] wireless sensors

You can monitor the Datalogger status , actual strategy of the datalogger after getting full, download strategy and percentage of Memory used from BeanScape[®].

DataLogger				
Status :	LOGGING	Download strategy:	NONE	
FullMem Mngmnt:	STOP_KEEP_DAQ	Memory Used	56.5	%

Figure 22: DataLogger information on BeanScape®

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

Display configuration	Notes Data Acq. config	. Signal Processing	DataLogger	System conf
DataLogger status				
DataLog	ger status :			
Downloa	d progress : 🛛 % 📃			
Downl	oad status :			
 DataLogger manager 	jer			:
Stop		Erase	1	
-Download manage	r			
Download	Download Then erase	Cancel		
			·	
Switch to	Commissioning, Download	then erase		
Sw	vitch to Commissioning, Dov	wnload		

Figure 23: DataLogger tab

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

DataLogger status :		
Download progress :	10 %	
Download status :		

Figure 24: DataLogger status

Four status are available:

- o *Ready*: the Datalogger is ready to register data
- o NotInit: the Datalogger is not initialized
- o Active logs only: Data acquisition is logged only
- Active TX and Log: Data acquisition is logged & transmitted by Radio
- *Stopped*: Datalogger is stopped

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

BeanDevice [®] Wilow [®] QuickStart	Wilow [®] wireless sensors
DataLogger manager Stop E Figure 25: DataLogger manager	rase
Below, in the download manager, different options to control the datalogge	r
Download manager Download Download Then erase Ca Switch to Commissioning, Download then erase Switch to Commissioning, Download	ancel
Figure 26: DataLogger download manag	<u>ger</u>
 <i>Download</i>: Starts to download all the logs on the BeanDevice[®] <i>Download then erase</i>: downloads all the logs and the erase the 	⁹ flash memory to your computer em.
Cancel: Stops the download process	
Switch to commissioning, download then erase: switch to co data logged then erase it	ommissioning mode ,download the

Switch to commissioning, Download: switch to commissioning then download (without erasing the data logged)

Below, we configure datalogger strategies when the Memory if full and these different choices are available :

DataLogger memory configur	ation	
SC" recording	"Stop Log"	
○ "Stop at end" recording	○ "SDC"	Validate
SCDE" recording	○ "SDER"	

Figure 27: DataLogger memory configuration

- **"SC" recording** : Switch to commissioning mode when the memory is full
- *"stop at end" recording:* Data recording stops when the memory is full
- **ScDE**"recording: Switch to commissioning ,Download then erase the recording
- "Stop Log": Stop logging and recording(switch to TX recording)
- *"SDC":*Switch commissioning mode and then download recording



6.3 FIRMWARE UPDATE

Watch the following video on how to upload the firmware:

https://www.youtube.com/watch?v=HblZnW ri38

6.4 MQTT MODULE

The BeanDevice® Wilow® comes with integrated MQTT module for lightweight data exchange with Internet third party softwares, also to remotely communicate with BeanScape® WiLow RA.

To configure the module of each BeanDevice®, select the BeanDevice® WiLow® from the left panel then go to **BeanDevice** on the **Menu bar** and select **MQTT**.

👐 BeanScape			
File Server Tools Data Analysis	BeanDevice Help	_	
: 🔄 🔤 🧕 🧕 🔔	Enable measure log		
□ MAC_ID : 0 x F4B85E00A5BF0000	Disable measure log	em	
Ch_Z	Reset measure memory cache for all the sensors		
	Display Wireless Network Information	B85E	
	Sensor Conf		
INC_Y	MQTT		
	Label :	MAC_ID	
Figure 29 :BeanDevice MQTT module configuration			

BeanDevice [®] Wile	ow [®] QuickStart		Wilow [®] wireless sensors
MQTT Module : MAC_I	D : 0 x F4B85E00A5BF0000		- 0
Broker Port: 1883 DNSStatus: 1		MQTTSTATUS MQTT Status: Stopped MQTT Ack: NA	Start Validate Restart
Brokerlp: 0.0.0.0 DNS:	Import Validate	Topic Ldc Ldca Publish_status: disabled Channel ID: 0	Ch_Z ~
Authentification User Name:		Topic Name:	Validate
Password:	Validate	Publish_status: disabled Streaming Topic	Default
Interval: 60 Version: V3R1	R1 V3R1R1 ~	Subscribe	Validate
Auto_gen_client_id_	Validate	Clean session: enabled	Default Validate
	Figure 30 :MC	QTT configuration winde	<u>ow</u>

6.4.1 MQTT broker

The Broker is responsible for distributing messages to interested clients based on the topic of a message.

There are two categories of brokers, one that is hosted on the Internet, the other is running on internal network.

Broker	Port:	1883	1883	
	DNSStatus:	1		
	Brokerlp:	0.0.0.0		
	DNS:	iot.eclipse.org	iot.eclipse.org	Validate

Figure 31: Broker configuration frame

- **Port**: TCP/IP port to use with MQTT .1883 and 8883 are the reserved ports for use with MQTT
- **DNSStatus:** check if you want to enter your broker DNS.DNSStaus is 1
- Brokerlp: enter your broker IP address after unchecking DNSStatus .DNSStatus is 0
- **DNS**:domain name server of your Broker

6.4.2 MQTT STATUS

From the MQTTSTATUS frame you can **Start/Stop** your connection and check your MQTT different status (connected ,stopped , connecting or disconnecting).

BeanDevice [®] Wilow [®] QuickStart	Wilow [®] wireless sensors		
MQTTSTATUS MQTT Status:	Start Validate		
MQTT Ack:	Restart		
_	Figure 32: MQTT Status frame		
MOTT Status: shows the cu	rent status of the MOTT module:		
Connecting: trying to est	ablish a connection		
connecting. If ying to est			
Connected: connection	established		
Disconnecting: disconne	cting the Client		
• Stopped: the connection	is stopped		
Start/Stop: select and Valid	ate to start or stop your MQTT Client connection		
Restart: restart your connect	tion		
6.4.3 topic for static measureme	ent		
This topic is used to allow user in the the measurement data on LowDutyCyc	other end connecting on the same MQTT broker to monitor and receive all le and Alarm acquisition modes (static measurement).		
Topic Ldc Ldca			
Publish_status: Channel ID: 0	abled Ch_Z		
Topic Name:	Default		
	Validate		
Figure 33: Topic for static measurement configuration frame			
Publish_status:check and value	lidate to enable publishing		
Retain Flag: Check and validate to enable retain flag			
Channel ID : channel identification			
Topic Name: Field to enter your topic's name or you can chose default			
6.4.4 topic for Dynamic measur	ement		

Same as for static measurements, this topic is used to receive measurements on Streaming, S.E.T and Shock Detection modes .

BeanDevice [®] Wilow [®]	QuickStart		Wilow [®] wireless sensors
Streamin	g topic		
Pu	olish_status: disabled		
Stre	aming Topic		
			Validate
<u>I</u>	igure 34: Topic for dynamic n	neasurement configuratio	on frame
Publish_status:	check and validate to enabl	e publishing	
Retain Flag: Che	eck and validate to enable r	etain flag	
Streaming Topic	:: Text field to enter your st	reaming topic's name	
6.4.5 Subscribe			
Subscribe will be used to BeanScape® Wilo RA .	connect to this BeanDevice® \	Vilow® and send OTACs t	from third party software or from
Subscrib	e	_	
subsc	ribe_status: disabled		
1	opic Name:		Default
			Validate
	Figure 35: Si	ubscribe frame	
Subscribe statu	s:check and validate to ena	ble subscribing	
Clean session: (check and validate to enab	e. then the client does	not have a persistent session
and all informat	ion are lost when the client	disconnects for any rea	son
Topic Name: Fie	ld to enter your topic's nan	ne .	
Please refer to the BeanDevice® Wilow® user manual section for more information about MQTT, "click here"			
For detailed i on the MQTT community Several inform our technical note : Bet	nformation on the MQTT e ication protocol ,"click her nation on using MQTT in I anDevice® Wilow® IoT star	exchanged frames ,plea e" oT connected world wi ter Guidelines using MC	se refer to our technical note ith examples can be found in QTT protocol, "click here"

7. TECHNICAL NOTES AND VIDEOS

In addition to this quickstart paper, please consult the user guide of the BeanDevice[®] Wilow and all related technical notes and videos

Document name (Click on the web link)	Related product	Description
Wilow WiFi sensor user manual	Wilow [®] products line	BEANDEVICE [®] WILOW [®] user manual
Wilow Battery life in Streaming <u>mode</u>	Wilow [®] products line	Wilow wireless sensors battery life in streaming mode
Wilow Data acquisition modes	Wilow [®] products line	Data acquisition modes available on the BeanDevice® Wilow
TN_RF_004- «MQTT Communication Protocol »	Wilow [®] products line	MQTT Communication Protocol for a seamless integration into a third-party IOT software
TN RF 005 «Building a reliable Wi-Fi network with Wilow sensors»	Wilow [®] products line	The aim of this document is to describe the autonomy performance of the BeanDevice® SmartSensor® and ProcessSensor® product line in streaming and streaming packet mode.

Beanair video link (YouTube)	Related products
<u>Getting started with BeanDevice[®] Wilow - Wi-Fi</u> Low Power Sensors	BeanDevice [®] Wilow
Wilow - Wi-Fi Sensors-Low duty cycle data acquisition mode on BeanDevice [®] Wilow	BeanDevice [®] Wilow
Wilow - Wi-Fi Sensors-Streaming mode with continuous monitoring on BeanDevice [®] Wilow	BeanDevice [®] Wilow
<u>Wilow - Wi-Fi Sensors-How to setup Wilow</u> <u>Datalogger</u>	BeanDevice [®] Wilow
Wilow - Wi-Fi Sensors-Smart Shock Detection (SSD) mode	BeanDevice® Wilow®



All the videos are available on our YouTube channel

 SCIGATE AUTOMATION (S) PTE LTD

 No.1 Bukit Batok Street 22 #01-01 Singapore 659592

 Tel: (65) 6561 0488
 Fax: (65) 6562 0588

 Email: sales@scigate.com.sg
 Web: www.scigate.com.sg

 Business Hours: Monday - Friday 8.30am - 6.15pm

Your Automation Partner

Beanair GmbH

"Rethinking sensing technology"