

Manual Instruction DMS Data Mobile Solution

Rev. 2 - 05/2019



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Quick Start Guide

We send devices pre-configured in most cases. If yours were pre-configured by us, please go through this page to get started with your DMS system in a matter of minutes.

- 1 Download and install on your Android the app DMS Data Mobile Solution from Google Play
- 2 Power on Gateway and turn on its inbuilt WiFi network.
- 3 Connect your Android phone to the DMS Gateway WiFi network.
- 4 Connect the Android cable to the phone first using the OTG adapter.
- 5 Open the DMS Offline Android app.
- 6 Load the project and tap on it to go to the home screen of the app.
- 7 Then connect the Android cable's other end to the Node and click on Setup Device and follow the wizard.
- 8 Repeat step 7 for all your Nodes.
- 9 Then press the Cloud Sync on the app to sync back all the Node settings to the gateway.
- 10 That's it. Now the Nodes will send the sensor data at the configured time intervals.

You can export the data and set Engineering conversions using the Gateway software.

Setting up the Gateway

This page explains the process of setting up the DMS gateway in the offline mode.

- 1 Connect a 12V DC power supply to the gateway. Ensure the polarities are affixed correctly while connecting the power supply. The power supply can be a 12V DC power adapter or a 12V solar panel power setup.
- 2 Switch on the gateway by putting the power switch to ON position
- 3 Once the gateway turns on, you will see RF LED (Radio Signal) starts blinking. RPI LED will follow to blink 1~2 minutes later. Wait for another 2~3 minutes for RPI LED to blink slowly every 5 sec.
- 4 You can now turn on WIFI by pressing and holding the SYS TEST button for 6 to 7 seconds. The RPI LED will then stop blinking and remain lit up. This indicates that the on-board WiFi network was successfully switched on. If the RPI LED continues to blink after pressing and holding the button as mentioned above, please repeat until you see the RPI LED remain lit up.
- 5 On your computer, search for WiFi networks and connect to the DMS_Gateway WiFi network. The password is adminadmin



6. Open your favorite browser, and visit http://192.168.0.10 U/N: admin PW: admin123

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admin From this website	
Password	•
Login	Ð
Forgot your password?	

7. Go to settings menu for Gateway configuration.

AAS					🧸 Administrator * Log Out (3- 🚍
nboard no > Pro	ojects				Мар
	Name Demo Project	No of Devices	Cilent Name Sisgeo Asia Pacific Co., Ltd.	Action	Oops! Not available in offline mode. Mee don't load correctly. Leg on to www.ke.ablco.com for more functionative.
De	evice Summary				
				No proje	ct is selected



(i) **Date and Time tab:** Click on "Sync Date Time with PC" and choose your country time zone.

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25 Dahbourd	
Date and Time Radio Internet Data Upload Wifi	
© Settinge	Sunc DateTime with PC
04-09-2019 11:22:16	Sync Daternine with PC
(UTC+07:00) Bangkok, Hanol, Jakarta	\$
Save	

(ii) **Radio tab**: Type the "Frequency". Refer to the following link to get your country frequency. Reset Interval can be default value, 30.

https://www.thethingsnetwork.org/docs/lorawan/frequencies-by-country.html

(CDAAS				🔊 Administrator -	
E Dashboard					_
E Device >	Date and Time Radio	Internet Data Upload Wifi			
🏚 Settings	Frequency Reset Interval	924			
			Save		



(iii) **Internet tab**: Choose either LAN or CELLULAR. If CELLULAR is chosen, set the APN based on the configuration given by your service provider.

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(adams)					🕂 Administrator * Log Out 🕒 🚍 -
E Dashboard					
E Device >	Date and Time Radio	Internet Data Upload Wifi			
🏚 Settings	Internet Mode	LAN ✓ CELLULAR ÷			
	APN	internet			
	User Name				
	Password				
			Save		

(@DAAS		👗 Administrator Log Out 🕒
Dashboard		
E New Project	Date and Time Radio Internet Data Upload Logs	
🌣 Settings	Data Upload Type	
	FTP URL	
	FTP UserName	
	FTP Password	
	Save	

(iv) **Data Upload tab**: Four options. LOCAL, API, FTP. In LOCAL mode, the gateway stores data locally in the gateway itself for manual retrieval.

For uploading to API: Type the respective API URL.

For uploading to FTP: Type type the respective FTP information.

(v) Logs tab: You can export the Log file of the Gateway.

(vi) Once you have configured Gateway setting, click on Save button. You will see the prompt in green color on top of the page.

8. You can now add the device (node).

(i) First, you need to add all the devices (Nodes) before creating Project.



(ii) Click on **Device>Add** at the side menu.

Device ID (Mac ID): the first 4 digits found on the sticker of the device

Device Name: Name it according to your device location or sensor as per your preference.

No of Channels: Select either 1,4 or 8 based on the device channels (port).

Device Type: Select either **Analogue Node**, **Vibrating Wire Node or Digital Node** based on the device.

After filling up the device information, click "Add" button.

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Dashboard	Add Device						
-	Device ID						
Settings	Device Name						
	No Of Channels	1		\$			
	Device Type	✓ Analogue N	lode	•			
		Digital Nod	e				
				Add			
	Device List						
	Show 10 \$ entries						
	Device Id	^	Project Name	Device Name	Device Type	م د	ction
	70		Demo Project	VW-70	VibratingWire Node		/ 1
	7da8		Demo Project	AN-7DA8	Analogue Node		/ 1
						< Prev	vious 1 Next >

(iii) You will see the green color prompt and added device information under "Device list" section.

(iv) Repeat this step to add additional devices.

9. You can now create project. Click on "New Project" at side menu. Input Name, Client, Start Date and Location (click on pencil icon to input the location).

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## Dashboard					
Project					
New Project Arrow Settings	Demo Project	Start Date	04 Apr 2019		
Client	Sisgeo Asia Pacific Co., Ltd.	Location	Lat: 100	Long: 100	
Device)				
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Sansar					
Sensor	2				
	× Vibrating Wire × Current Loop				
	Vibrating Wire				
	Voltage				
	Current Loop				
	LDVT				
	Wheatstone Bridge				
	RS485-Geogage-Tiltmeter				
	RS232-Geogage-Tiltmeter				
	SDI12-Geogage-Tiltmeter				



(i) On device section, click with cursor in the text box, you will see the device which you have already added previously. Please select your devices. (You can select multiple devices.)

(ii) On Sensor section, please select the respective sensor types. (You can select multiple sensor types.)

(iii) Click on Next.

(iv) You can set the desired "Sampling Rate" at this page for all the nodes. Once completed, click on "Setup" to complete the Project Creation.

Device & Channe	els		
Device 0	Device Name	Coopling Rate	Location
^ 70	VW-70	60	Lat: 13.681494 Long: 100.63002 🖉
^ 7da8	AN-7DA8	60	Lat: 13.681608 Long: 100.630036 🖍
		Previous Setup	

(v) You will see the green color prompt. Gateway wifi will be automatically turn off at this stage. You will need to turn on it again by pressing and holding the SYS TEST button for 6 to 7 seconds on device physical PCB board.

(vi) Click on Dashboard at the side menu, you can now see newly created project. If you want to edit the project, click on pencil button.

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Projects	;				Мар				
De	mo Project	No of Devic	ces ି Sis	Client Name geo Asia Pacífic O Ltd.		Cops! No Map didn't bad correctly	t available in offlir	n tor more functions	and a second secon
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Device \$	Summary (Device State	Demo Proj	ject) Device VW-70	Sampling Rate (mins) 60 /	Battery 0	RSSI	C Last Upd Apr 9, 20 11:00:28	ated 0 D19 AM	Exp



(vii) Next step, please refer to Node Manual (Analogue or Vibrating Wire) to setup and commission the nodes.

(viii) After you have commissioned all the nodes, go to Dashboard, click on your project, you will now be able to see your devices under "Device Summary" Section.

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10. After you are done interacting with the gateway software, please turn off the WiFi network to conserve power. To do this, as in Step 4, press and hold the SYS TEST button for 6 to 7 seconds.

Normal Operating Status of the Gateway

- 1 You should see all three LEDs of the gateway should remain off most of the time.
- 2 The RPI LED will blink every 5sec. If WIFI is on, RPI LED will blink every 5 sec too.
- 3 The NET LED will blink if the Internet mode has been to CELLULAR and when there is Internet activity (e.g., real-time data uploading to a server via FTP or API). Afterwards, the LED will turn off. In the LOCAL mode, the NET will be permanently off since the gateway does not use Internet connectivity.
- 4 The RF LED will blink when there is RF activity (radio transmissions or receptions).

Turning off the Gateway

- 1 Press and hold the SYS TEST button for more than 10 seconds. You will see that the RPI LED will stop blinking and remain turned off.
- 2 RF LED may continue to blink every 5s which is normal.

Put the power switch to off position.



Setting up Analogue Nodes

This page provides information on setting up a Analogue Node to work with the offline DMS gateway.

Installation Analogue Nodes

1.Connect the node antenna to the antenna bulkhead.

2. Connect the sensor wires to the node while ensuring that the wires are plugged in correctly.

Voltage Output Sensors

PWR: +Voltage input to sensor (e.g. +12V) GND: 0 Voltage input to sensor (e.g. 0V) 12VN: 12V Voltage input to sensor 1H: 1st channel output of sensor 1L: 1st channel output of sensor 2H: 2nd channel output of sensor 2L: 2nd channel output of sensor +T: Thermistor -T: Thermistor SHLD: Shield wire of sensor

Current Loop Sensor

PWR: +Voltage input to sensor (e.g. +12V) GND: Not used 12VN: Not used 1H: Not used 1L: 1st output channel of sensor (e.g. -Voltage wire) 2H: Not used 2L: 2nd output channel of sensor (e.g. -Voltage wire) +T: Thermistor -T: Thermistor SHLD: Shield wire of sensor

- 3. Make sure that the Node is switched off.
- 4. Insert the battery while ensuring the polarity is followed correctly.

Configuring Analogue node via DMS App

1.Obtain an Android phone and connect it to the DMS gateway WiFi network. (See the Gateway page to learn about switching on the DMS gateway WiFi network.)

2. Plug in the USB end of the debugger kit (the transparent box provided with our shipment) via an OTG adapter to your Android phone.

3. The green LED on the debugger should turn on. If not, please check your phone settings to enable OTG.

4. **Important!** Please make sure the Node switch is turned off before connecting to your phone.

5. Once the green LED on the debugger turns on, plugin the ribbon wire of the debugger to the black socket on the Node.



6. Switch on the Node.

7. Open the DMS app on the phone. (Please note that you need to add the device (node) and create the project first before you commission the note. Please refer to Gateway Setup for details.)

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All ap	os	•
Sear	rch	
	Contacts	>
Ŵ	DMS 19.69 MB	>
	Docs 111 MB	>
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4	Drive 68.79 MB	>
0	Duo 61.18 MB	>
	Email 2.09 MB	>
Ģ	Facebook 233 MB	>
	Facebook App Installer 668 kB	>
	Facebook App Manager	>
	Facebook Services More	

(i) You will see the project which you have already created once you open your DMS Offline app. Click the button to download the project and go in to the project, you will see the project details.





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≡	Setup Proje	ct	
Google			
	Project Name Test Project	,	
()	Project No		
습	Client Name ABC Company		
泉	Manager Administrator		
Ж	Number of De	vices	
()	Last Sync Not Set		
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Setup Device Network Test Sensor Test Cloud Sync

(ii) Click on "Setup Device" on the lower menu, the app will show connected node information. If the connection is unsuccessful, please press the small button on the debugger and press "Setup Device" again.





(iii) Click on "Setup Sensor", you can now configure the sensor settings.

(iv) You will see this page with the available channels. Tap the "Arrow icon" on the respective channel which your sensor is connected to.

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≡ Sens	sor Set	up
Channel 1		
Sensor Code	:	
Sensor Type	-	
A-axis	: NA	
B-axis	: NA	
Temperature	: NA	
Channel 2		
Sensor Code	:	
Sensor Type	-	
A-axis	: NA	/
B-axis	: NA	
Temperature	: NA	
Channel 3		
Sensor Code		
Sensor Type	-	
A-axis	: NA	>
B-axis	: NA	
Temperature	: NA	
Channel 4		
Sensor Code		
Sensor Type		
A-axis	: NA	>
B-axis	: NA	
Temperature	: NA	

Setup Sensor

(v) **Sensor Code**: Your desired sensor name.

Sensor Type: Select respective sensor type.

Parameters: Turn on the parameters as connected to the Node.

Excitation: Set the warm up time required for the sensor.

Excitation Voltage: Select either 5 or 12 or 24, depending on the sensor.



Channel 1

- Sensor Type			_
Analog Curre	ent		~ 0
- Parameters			
A-axis			
B-axis			
Temperat	ure		
- Excitation ti	me		0
	~		0
Minutes	0	Seconds	1
	1		2
- Excitation V	oltage		



(vi) Click Save Settings. The Node will now read the configured sensor.

(vii) The next page, you will see the readings of the sensor.

■ © ▲	* 141 😤	al 74% 🗎 15:36
≡ Sens	or Setup	
Channel 1		Ċ
Sensor Code	: MEMS	
Sensor Type	: Analog Current	: 2690 ms
A-axis	: 1.456400 mA	
B-axis	: 1.293100 mA	100
Temperature	: 23.51 °C	
Channel 2		
Sensor Code		
Sensor Type		
A-axis	: NA	/
B-axis	: NA	
Temperature	: NA	
Channel 3		
Sensor Code	:	
Sensor Type	:	5
A-axis	: NA	
B-axis	: NA	
Temperature	: NA	
Channel 4		
Sensor Code	:	
Sensor Type	:	>
A-axis	: NA	/
B-axis	: NA	

(viii) To get another reading, click on arrow icon. If reading is ok, please turn on blue color icon to enable the sensor.

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= Sens	or Setup	
Channel 1		
Sensor Code	: MEMS	
Sensor Type	: Analog Current	: 2690 ms
A-axis	: 1.456400 mA	\frown
B-axis	: 1.293100 mA	
Temperature	: 23.51 °C	
Channel 2		
Sensor Code	:	
Sensor Type	:	5
A-axis	: NA	
B-axis	: NA	
Temperature	: NA	
Channel 3		
Sensor Code	:	
Sensor Type	:	
A-axis	: NA	/
B-axis	: NA	
Temperature	: NA	
Channel 4		
Sensor Code	:	
Sensor Type	:	
A-axis	: NA	/
B-axis	: NA	
	Enable Sensor	

(ix) Repeat above steps to configure other channels of the Node.



(x) Once all sensors are configured, click on "Enable Sensor", it will take you to next page "Scanning Network" which will scan the wireless signal strength (RSSI) between the Node and Gateway.

(xi) After you get the Network Test information, if you need to, you can refresh by pressing the button located at the lower right corner.





(xii) After that, click "Start Monitoring" button then the app will prompt "Device commissioned". Click OK.



(xiii) **Important!** Next step, please press the Cloud Sync button at lower right area to send all the configuration information back to the gateway.



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≡	Setup Project
Google	
B	Project Name
	Test Project
()	Project No 30
ඛ	Client Name ABC Company
£	Manager Administrator
×	Number of Devices
\odot	Last Sync 2019-04-03 15:41:09
£63	⁶ 1 ⁰ 28 (3)
Setup Devi	ce Network Test Sensor Test Cloud Sync

(xiv) If you would like the Node to immediately send a reading to the Gateway, please press the "SYS TEST" button on the device physical circuit board.

(xv) For additional node commissioning, repeat the steps above.

(xvi) You can now go to the Gateway software dashboard on your computer and click on your project. You will now be able to see your commissioned devices under "Device Summary" Section.

(xvii) In case the node at the moment of the configuration is far from the gateway, it's not necessary to press over the Cloud Sync to send the configuration by Wifi. The node will send it after transfer the first reading (pressing the SYS TEST Button)

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Setting up Vibrating Wire Nodes

This page provides information on setting up a Vibrating Wire Node to work with the offline DMS gateway.

Installation Vibrating Wire Nodes

1. Connect the node antenna to the antenna bulkhead.

2. Connect the sensor wires to the node while ensuring that the wires are plugged in correctly.

+S: Vibrating wire input of sensor

- -S: Vibrating wire input of sensor
- +T: Thermistor
- -T: Thermistor

SHLD: Shield wire of sensor

3. Switch off the Node and insert the battery while ensuring the polarity is followed correctly.

Configuring VW Nodes via DMS App

1.Obtain an Android phone and connect it to the DMS_gateway WiFi network. (See the Gateway page to learn about switching on the DMS_gateway WiFi network.)

2. Plug in the USB end of the debugger kit (the transparent box provided with our shipment) via an OTG adapter to an Android phone.

3. The green LED on the debugger should turn on. If not, please check your phone settings to enable OTG.

4. Important! Please make sure the Node is switch off before connecting to your Android phone.

5. Once the green LED on the debugger turns on, plugin the ribbon wire of the debugger to the black socket on the Node.

6. Switch on the Node.

7. Open the DMS Offline app on the phone. (Please note that you need to add the device (Node) and create the project first before you commission the Node. Please refer to Gateway Setup for details.)



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\leftarrow	Apps	
All ap	ps	•
Sea	rch	
	Contacts 1.53 MB	>
Â	DMS 19.69 MB	>
	Docs 111 MB	>
*	Dragon Mania 3.72 MB	>
	Drive 68.79 MB	>
0	Duo 61.18 MB	>
	Email 2.09 MB	>
Ģ	Facebook 233 MB	>
	Facebook App Installer	>
	Facebook App Manager	>
	Settings More	

(i) You will see the project which you have already created once you open your DMS Offline app. Click the button to download the project and go in to the project, you will see the project details.







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≡	Setup Proje	ect	
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	Project Name Test Project	e	
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습	Client Name ABC Company		
£	Manager Administrator		
ж	Number of D	evices	
()	Last Sync Not Set		
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Setup Device Network Test Sensor Test Cloud Sync

(ii) Click on "Setup Device" on the lower menu, the app will show connected node information. If the connection is unsuccessful, please press the small button on the debugger and press "Setup Device" again.

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≡	Setup Device	
		DMS-VW-1
\oslash	Device ID	
\oslash	Device Name VWS8-F787	Ø
\oslash	Channel Count	
\oslash	Battery Voltage 3.7 Volt	
\oslash	Transmission Frequ 924 MHz	lency
\oslash	Sampling Interval 30 minutes	Ø
\oslash	Wireless Mesh Disabled	
	Setup Senso	r



(iii) Click on "Setup Sensor", you can now configure the sensor settings.

(iv) You will see this page with the available channels. Click "Arrow icon" on the respective channel which your sensor is connected to.

D 🗟 🕨 1 88 😒		96% 📖 09:04
≡ Sens	or Setup	
Channel I	14/1000	Ĵ
Sensor Code	: VK4000	NA
Sensor Type	: VIDrating Wire	
Tomporature	. 904.376Z	_
Signal Quality	: 99.0000	
Channel 2		
Sensor Code	:	
Sensor Type	:	()
Frequency	: NA	\sim
Temperature	: NA	
Signal Quality	: NA	
Channel 3		
Sensor Code	:	
Sensor Type	:	\ \
Frequency	: NA	/
Temperature	: NA	
Signal Quality	: NA	
Channel 4		
Sensor Code	:	
Sensor Type	:	>
Frequency	: NA	/
Temperature	: NA	
Signal Quality	: NA	
Channel 5		
Sensor Code	:	
Sensor Type	:	>
Frequency	: NA	/
Temperature	: NA	
	Enable Sensor	

(v) **Sensor Code**: Your desired sensor name.

Sensor Type: Select respective sensor type.

Parameters: Turn on the parameters as connected to the Node.

Mode: Please select the respective Sweep Mode (A or B or C), depending on the sensor.

Mode. Please se	lect the
D 🗊 🕨 1 88 🛢	97% 💻 09:03
\equiv Sensor Settings	
Channel 1	
Sensor Code	
VK4000	
Sensor Type	
Vibrating Wire	~] (i)
Parameters	
Frequency	
Temperature	
Mode	
Sweep A - 450 to 1250 Hz	
^C Sweep B - 800 to 2000 Hz	
Sweep C - 1400 to 3500 Hz	
Sweep D - 2400 to 6000 Hz	





(vi) Click Save Settings. The Node will now read the sensor that was just configured. (vii) On next page, you will see the first reading.

D 🗟 🕨 🖠 😫		96% 📖 09:04
≡ Sens	or Setup	
Channel 1 Sensor Code Sensor Type Frequency Temperature Signal Quality	: VK4000 : Vibrating Wire : 904.3782 : 25.5908 °C : 99.0000	Ê↓ NA
Channel 2 Sensor Code Sensor Type Frequency Temperature Signal Quality	: : NA : NA : NA	>
Channel 3 Sensor Code Sensor Type Frequency Temperature Signal Quality	: NA NA NA	>
Channel 4 Sensor Code Sensor Type Frequency Temperature Signal Quality	: : NA : NA : NA	>
Channel 5 Sensor Code Sensor Type Frequency Temperature	: : : NA : NA	>
	Enable Sensor	

(viii) To get another reading, click on the arrow icon. If the reading is ok, please enable the sensor using the blue color icon.

(ix) Repeat above steps to configure other sensors that are connected to the Node.

(x) Once all sensors are configured, click on "Enable Sensor" button. It will then take you to next page "Scanning Network" which will scan the wireless signal strength (RSSI) between the Node and Gateway.

(xi) After you get the Network Test information, if you need to, you can perform another network test by pressing the button located at the lower right corner.







(xii) After that, click "Start Monitoring" button then the app will prompt "Device commissioned". Click OK.

		* 1861 \$ 1 86%	18:25
=	E Network Te	st	
	Node Device ID: RSSI ETX	: f7b1 : -89 dBm : 3	
ľ	Device Setup	oned	٦
		ок	
		(Ð
	Start M	onitoring	

(xiii) **Important!** Next step, please press the Cloud Sync button at lower right area to send all the configuration information back to the gateway.





(xiv) If you would like to get the Node to immediately send a reading to the Gateway, please press the "SYS TEST" button on device physical circuit board.

(xv) For commissioning of additional Nodes, repeat the above steps.

(xvi) You can now go to the Gateway software dashboard on your computer and click on your project. You will now be able to see your commissioned devices under "Device Summary" Section.

(xvii) In case the node at the moment of the configuration is far from the gateway, it's not necessary to press over the Cloud Sync to send the configuration by Wifi. The node will send it after transfer the first reading (pressing the SYS TEST Button)

(CDAAS						Ac	fministrator - Log Out 🗗 🚍
E Dashboard	Projects			Мар			
 B New Project Settings 	Name Demo Project	No of Devices C 2 Sisgeo	lent Name Action		Oops! Not av	vailable in offline mode	
	Device State		Sampling Rate (mins)	Battery	RSSI	Last Updated	Export
	٠	VW-70	60 🖉		•	Apr 9, 2019 11:00:28 AM	Z
	•	AN-7DA8	60 🥒		•	Apr 9, 2019 11:00:28 AM	Z



Setting up Relay Ext Node

This page provides information on setting up a Relay Ext node in case your system need.

Configuring of Relay via DMS App

1.Obtain an Android phone and connect it to the DMS_gateway WiFi network. (See the Gateway page to learn about switching on the DMS_gateway WiFi network.)

2. Plug in the USB end of the debugger kit (the transparent box provided with our shipment) via an OTG adapter to an Android phone.

3. The green LED on the debugger should turn on. If not, please check your phone settings to enable OTG.

4. Important! Please make sure the Node is switch off before connecting to your Android phone.

5. Once the green LED on the debugger turns on, plugin the ribbon wire of the debugger to the black socket on the Node.

6. Switch on the Node.

7. Open the DMS Offline app on the phone. (Please note that you need to add the device (Node) and create the project first before you commission the Node. Please refer to Gateway Setup for details.)

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All ap	ps	•
Sear	rch	
	Contacts 1.53 MB	>
Â	DMS 19.69 MB	>
	Docs 111 MB	>
*	Dragon Mania 3.72 MB	>
	Drive 68.79 MB	>
0	Duo 61.18 MB	>
	Email 2.09 MB	>
Ģ	Facebook 233 MB	>
	Facebook App Installer	>
	Facebook App Manager	>
	Facebook Services More	



(i) You will see the project which you have already created once you open your DMS Offline app. Click the button to download the project and go in to the project, you will see the project details.

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Tes	t Project	ł)

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≡	Setup Proje	ect		
Google				
	Project Name Test Project	e		
()	Project No 30			
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皇	Manager Administrator			
ж	Number of D	evices		
()	Last Sync Not Set			
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Setup Device Network Test Sensor Test Cloud Sync

(ii) Click on "Setup Device" on the lower menu, the app will show connected node information. If the connection is unsuccessful, please press the small button on the



debugger and press "Setup Device" again.

D 🔅 🕨	1 88 9	97% 📖 09:03
≡	Setup Device	
		DARS OF THE STREET
\bigcirc	Device ID	
\bigcirc	Device Name VWS8-F787	Ø
\oslash	Channel Count	
\oslash	Battery Voltage 3.7 Volt	
\oslash	Transmission Freque	ency
\oslash	Sampling Interval	Ø
\oslash	Wireless Mesh Disabled	
	Setup Sensor	

(iii) Enable the Wireless Mesh. In this case the node will become a mesh point and can extend the signal between the others node and the Gateway.

(iv) Once all sensors are configured, click on "Enable Sensor" button. It will then take you to next page "Scanning Network" which will scan the wireless signal strength (RSSI) between the Node and Gateway.

(v) After you get the Network Test information, if you need to, you can perform another network test by pressing the button located at the lower right corner.



Start Relay	>

(vi) After that, click "Start Relay" button then the app will prompt "Device commissioned". Click OK.



Setting up the conversion formula

This page provides information on setting up in the software the formula to convert the data from electric unit to engineering unit.

(i) Click on Dashboard at the side menu. To edit the project, click on pencil button.

Name No of Devices Demo Project 2	Sisgeo Asia Pacific O		Oops! Not a Map didn't load correctly. Log	vailable in offline mode.	
Demo Project 2	Sisgeo Asia Pacific C		Oops! Not a Map didn't load correctly Log	vailable in offline mode. on to www.live.ackab.com for more functio	
			Oops! Not a Map didn't load correctly: Log	vailable in offline mode. on to www.live.ackcio.com for more functio	
Device Summary (Demo Project)				
Davice State	so Sampling Date (mine)	Battan	Deel	Last Indated	Ev
	70 60 /	Dattery	•	Apr 9, 2019	
A11.77			•	11:00:28 AM Apr 9, 2019	
	JA8 60 /		•	11:00:28 AM	L.

(ii) Click Next button till arrive at the "Device & Channel" page (iii) click to select the node you want configure

(CDAAS					🕋 Administrator Log Out G
Dashboard	Device & Channe	ls			
New Project	Device 0	Device Name	Sampling Rate	Location	Action
Settings	▲ 63d6	ANS4-63D6	30	Lat: 13.681572 Long: 100.630016	0 iF
	▲ 844b	ANS4-844B	30	Lat: 13.681572 Long: 100.630016 🖉	0 îr
	d828	RL-D828	30	Lat: 13.681572 Long: 100.630016 🖉	0 î:
		VWS8-F787	30	Lat: 13.681572 Long: 100.630016 🖉	0 îF
			Previous	Setup	



(iv) next page will show you the channel configured for selected node.(v) On the "Unit Type" windows can select the engineering unit you want to see.

^)	63d6		ANS4-63	D6	v 	30			Lat: 13.681572	Long: 100.630016 /	AC	ion
~	844b		ANS4-844	48		30			Lat: 13.681572	Long: 100.630016 /	0	ij;
^	d828		RL-D828			30			Lat: 13.681572	Long: 100.630016 🖉	0	.
^	f787 Channel Id Sensor		VWS8-F787		30				Lat: 13.681572 Long: 100.630016 🖍		o	î
Cł	nannel Id	Sensor Code	. 0	Channel Type	Base Reading	3	Model		Unit Type	Location	Act	tion
	0 \$	VK4000		A \$	904.378235	٢	Vibrating Wire	1	AicroStrain 🗘	Lat: 13.681584 Long: 100.630023 /	Σ	Î
-	1 \$	VK4000		Temperature \$	2916	٢	Vibrating Wire	-	Celcius 🗘	Lat: 13.681584 Long: 100.630023	Σ	Î
	2 \$	VK4000		в \$	99	٢	Vibrating Wire	4	None 🗘	Lat: 13.681584 Long: 100.630023 /	Σ	ĩ

(vi) select the unit type and click on the $\,\Sigma\,$ to set the conversion

	Device	Ó	Dev	ice Name	0	s	ampling Rate			Location
^	63d6		ANS4-63	D6		30			Lat: 13.68157	2 Long: 100.630016 🖉
^	844b		ANS4-84	4B		30			Lat: 13.68157	2 Long: 100.630016 🖉
	d828		RL-D828			30			Lat: 13.68157	2 Long: 100.630016 🖉
	f787		VWS8-F7	787		30			Lat: 13.68157	2 Long: 100.630016 🖉
Ch	annel Id	Sensor Cod	le õ	Channel Type	Base Read	ing	Model		None Degree	Location
l	D \$	VK4000		A \$	904.378235	٢	Vibrating Wire	\$	MicroStrain Voltage	Lat: 13.681584 Long: 100.630023
•	t \$	VK4000		Temperature \$	2916	٢	Vibrating Wire	¢	MilliAmpere	Lat: 13.681584 Long: 100.630023
	2 \$	VK4000		B \$	99	٥	Vibrating Wire	\$	MilliVoltage KiloNewton	Lat: 13.681584 Long: 100.630023
							Previous Setup		Ohms Ohms Percentage MillVoltOverVoltage Tonne MilliNeter MegaPascal KillRascal	



(vii) in the new windows can select the Formula you need and input the coefficient of the instruments selected tht you will find on the calibration report of the sensor.

(CDAAS			Configure Engineering Form	ula (Device: VWS8	None Average	🔬 Adr	inistrator Log Out 🕞
E Dashboard	Device & Channels		Sensor Code : VK4000	Formula :	Load (Absolute) Load (Relative)		\checkmark
New Project	Device 0	Device N	2		MicroStrain (Relative) Polynomial (Absolute)	Location	Action
- Obtangs	63d6	ANS4-63D6	Parameters $L_{Ema} = (B^2/1000) * G$		Polynomia (Relative) Pressure Head Change (Absolute) Pressure Head Change (Relative)	1572 Long: 100.630016 🖉	0 17
	♪ 844b	ANS4-844B	where,		Summation Temperature Tilt (Absolute)	1572 Long: 100.630016 🖉	0 1
	▲ d828	RL-D828	G is gauge factor $(\mu \varepsilon / Digit)$, R is current reading (Hz) ,		Tilt (Relative)	81572 Long: 100.630016 🖉	O îr
	▲ 1787	VWS8-F787	and, L_{Eng} is reading in engineering	$\log unit(\mu\epsilon)$.6	881572 Long: 100.630016 🖉	O îr
	Channel Sensor Co	de Ci	G: 4.043 ©			Location	Action
	0 \$ VK4000	A				↓ Lat: 13.681584 Long: 100.630023 //	Σ 🕯 🧭
	□ 1 \$ VK4000	Те			Save changes	¢ Lat: 13.681584 Long: 100.630023	Σ
	2_\$ VK4000	В	\$ 99 \$	Vibrating Wire	\$ None	¢ Lat: 13.681584 Long: 100.630023 🖉	Σ
				Previous Setu	3		

(viii) when you will export the data you will have on the .csv file the raw reading and the engineering converted reading.

_										J
1	Date & Time	Temperatures (C)	Rssi (dBm)	Battery (V)	VK4000-Reading-A (mµ)	VK4000-RawReading-A	VK4000-Reading-Temperature (C)	VK4000-RawReading-Temperature	VK4000-Reading-B ()	VK4000-RawRe
2	15/05/19 09:25	26	-100	4.172	3304.3435	904.0464	25.88	2880	98	
3	15/05/19 09:55	26	-94	4.102	3305.152	904.157	25.73	2898	98	
4	15/05/19 10:00	26	-94	4.102	3305.152	904.157	25.59	2916	98	
5	15/05/19 10:15	22	-77	4.103	3304.3435	904.0464	25.18	2969	98	
6	15/05/19 10:30	22	-93	4.102	3302.3225	903.7699	25.21	2965	98	
7	15/05/19 10:45	22	-91	4.102	3302.3225	903.7699	25.21	2965	98	
8	15/05/19 11:00	22	-53	4.101	3302.3225	903.7699	25.18	2969	98	
9	15/05/19 11:15	22	-36	4.102	3302.3225	903.7699	25.21	2965	98	
10	15/05/19 11:30	22	-48	4.101	3302.3225	903.7699	25.11	2978	96	
11	15/05/19 12:00	22	-49	4.101	3305.152	904.157	25.04	2987	93	
12	15/05/19 12:15	22	-50	4.1	3305.9607	904.2676	25.07	2983	92	
13	15/05/19 12:30	22	-46	4.1	3302.3225	903.7699	24.9	3005	92	
14	15/05/19 12:45	22	-49	4.1	3302.3225	903.7699	24.77	3023	92	
15	15/05/19 13:00	22	-50	4.097	3301.5136	903.6592	24.73	3028	91	
16	15/05/19 13:15	22	-50	4.097	3302.3225	903.7699	24.8	3019	91	
17	15/05/19 13:30	22	-48	4.096	3305.152	904.157	24.9	3005	93	
18	15/05/19 13:45	22	-49	4.095	3303.1308	903.8805	24.97	2996	91	
19	15/05/19 14:00	22	-47	4.095	3301.5136	903.6592	25	2992	91	
20	15/05/19 14:15	22	-52	4.094	3302.3225	903.7699	24.8	3019	90	
21	15/05/19 14:30	22	-51	4.094	3300.7055	903.5486	24.84	3014	89	
22	15/05/19 14:45	22	-50	4.094	3302.3225	903.7699	24.8	3019	90	
23	15/05/19 15:00	22	-50	4.093	3300.3007	903.4932	24.8	3019	91	
24	15/05/19 15:15	22	-50	4.093	3302.3225	903.7699	24.84	3014	90	
25	15/05/19 15:30	22	-47	4.093	3301.5136	903.6592	24.77	3023	92	
26	15/05/19 15:45	22	-49	4.093	3302.3225	903.7699	24.84	3014	90	
27	15/05/19 16:00	22	-49	4.09	3301.5136	903.6592	24.8	3019	90	
28	15/05/19 16:15	22	-52	4.09	3301.5136	903.6592	24.8	3019	91	
29	15/05/19 16:30	22	-50	4.091	3302.3225	903.7699	24.8	3019	91	
30	15/05/19 16:45	22	-50	4.089	3301.5136	903.6592	24.77	3023	90	
31	15/05/19 17:00	22	-50	4.089	3300.7055	903.5486	24.73	3028	92	



Export data from DMS Software

(i) Click on Dashboard at the side menu.

(ii) Click the export's action symbol. In this case you will export for the selected project all data about Gateway, Relay and node.

Projects			Мар			
Name MRT ORANGE LINE	No of Devices O Client I 4 4 4	Name Action		Oops! Not ava	illable in offline mo	
			a contract of the second se			
Device Summary (N		Sampling Rate (mins)	Battery	RSSI 0	Last Updated	Exp
Device Summary (N	IRT ORANGE LINE) Device Wws8-F787	Sampling Rate (mins) 0	Battery 0	RSSI 0	Last Updated May 24, 2019 9:33:37 AM	Exp
Device Summary (N Device State	IRT ORANGE LINE) Device VWS8-F787 ANS4-844B	Sampling Rate (mins) 30 / 30 /	Battery 0	RSSI 0 ▼	Last Updated May 24, 2019 9:33:37 AM May 24, 2019 9:30:20 AM	Ex(
Device Summary (N	IRT ORANGE LINE) Device VWS8-F787 ANS4-844B ANS4-63D6	Sampling Rate (mins) 30 30 30 30 30 30 30 30	Battery 0	RSSI 0	Last Updated May 24, 2019 9:33:37 AM May 24, 2019 9:30:20 AM May 24, 2019 9:30:30 AM	Ext

(iii) In case you want to export only the data of a single node, click on the export's action button on the Device Summary table.

Projects			Мар			
Name MRT ORANGE LINE	No of Devices Client N	lame Action				
				Oops! Not av	ailable in offline mo	ode.
Device Summary (M	IRT ORANGE LINE)					
Device Summary (M	IRT ORANGE LINE)	Sampling Rate (mins)	Battery	RSSI	Last Updated	
Device Summary (M	IRT ORANGE LINE) Device Wws8-F787	Sampling Rate (mins)	Battery 0	RSSI 0	Last Updated May 24, 2019 9:33:37 AM	E
Device Summary (M	IRT ORANGE LINE) Device WWS8-F787 ANS4-844B	Sampling Rate (mins) 0 30 / 30 /	Battery 0	RSSI 0	Last Updated May 24, 2019 9:33:37 AM May 24, 2019 9:30:20 AM	
Device Summary (M	IRT ORANGE LINE) Device Device ANS4-844B ANS4-63D6	Sampling Rate (mins) 6 30 ≠ 30 ≠ 30 ≠	Battery C	RSSI 0	Last Updated May 24, 2019 9:33:37 AM May 24, 2019 9:30:20 AM May 24, 2019 9:30:30 AM	