

Interfacing YieldPoint's dMUX with an Ackcio Digital Node

YieldPoint



Sensing the future



ACKCIO

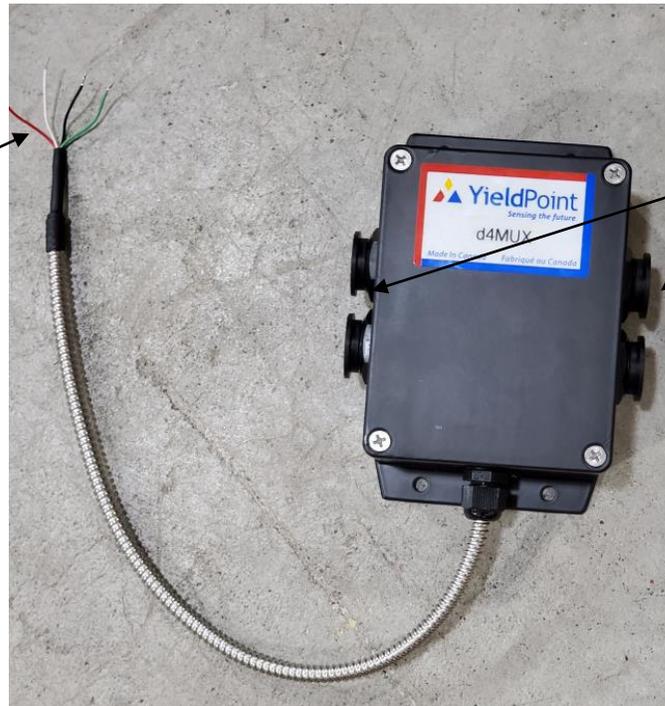
July 2021

YieldPoint's dMUX

The d4MUX and d8MUX are a low-cost solution for multiplexing an array or cluster of instruments (4 or 8) to a telemetry device such as a Radio or Gateway. This allows up to 160 channels of data to be sampled (20 channels/instrument)

Power: 6-38VDC
Red: +6-38VDC
Black: GND

RS232:
White: Tx
Green: Rx



4 ports
for 4 YieldPoint instruments
RS485: 9600, 8, N,1



dMUX Instruction Set

Teraterm session

Only 3 instructions

:V <CR><LF> Gets the Version number

:Q <CR><LF> Self Test

Returns version + Polls all 8 ports.

Note: For a d4MUX the Self test will only return 4 ports.

The other will return X and will Fail overall.

:I01 <CR><LF> Polls Port1. Powers up and reads.

Times out with Y after 15 seconds.

Note: the d4MUX can be connected to a using a smart cable:

<https://www.digikey.ca/en/products/detail/ftdi-future-technology-devices-international-ltd/TTL-232RG-VIP-WE/2441358>

```
YP 8 INSTRUMENT GATEWAY Power Up
:V <CR><LF> 'No Echo
2.0
:Q <CR><LF> 'No Echo
Yieldpoint Inc. (c) 2001-2021
2.0
Test(8) Port1 :YP,160612009,d1TEMP,12,+ 20.5,C,
-PASS
Test(9) Port2 :YP,160612010,d1TEMP,12,+ 20.5,C,
-PASS
Test(10) Port3 :YP,160612011,d1TEMP,12,+ 20.9,C,
-PASS
Test(11) Port4 :YP,160612012,d1TEMP,12,+ 20.8,C,
-PASS
Test(12) Port5 :YP,X
-FAIL
Test(13) Port6 :YP,X
-FAIL
Test(14) Port7 :YP,X
-FAIL
Test(15) Port8 :YP,X
-FAIL
Yieldpoint Inc. (c) 2001-2021
2.0
: FAIL **
** not all 8 ports returned positive status **
```



Ackcio Digital Node

In this document we will outline the process based on an Ackcio Digital Node using the RS232 inputs.

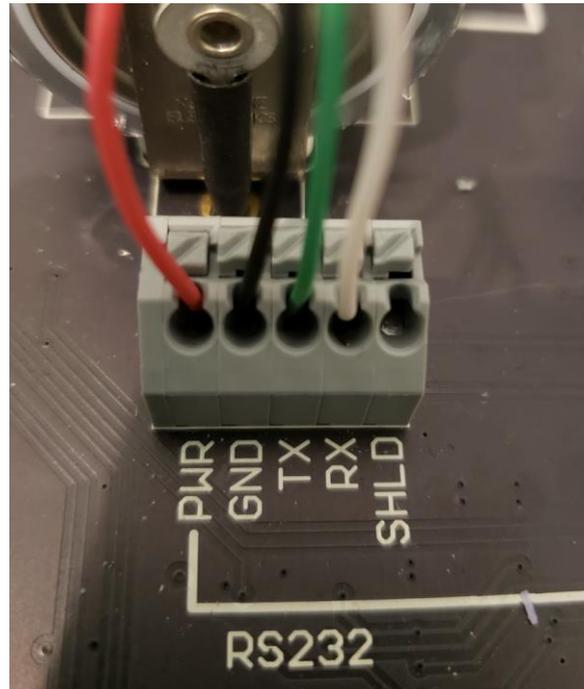


Physical Connection

The first thing we should look at is how the d4MUX or d8MUX is physically connected to the Ackcio Digital Node. It is wired directly into the RS232 connector inside the Node.

Note: Make sure to run it through the grommet to the outside of the box first.

Red: PWR
Black: GND
Green: TX
White: RX



Before you continue to Software,
You will need to have all instruments
Connected to the dMUX.

Software Setup

At this point the YieldPoint equipment is ready to go, and it's all about setting up the Node to know what type of device it is talking to.

- Install the App
- Connect to the Gateway's Wi-Fi
- Plug into the Node
- Configure the Node
- Link it to the Gateway



Setting Up

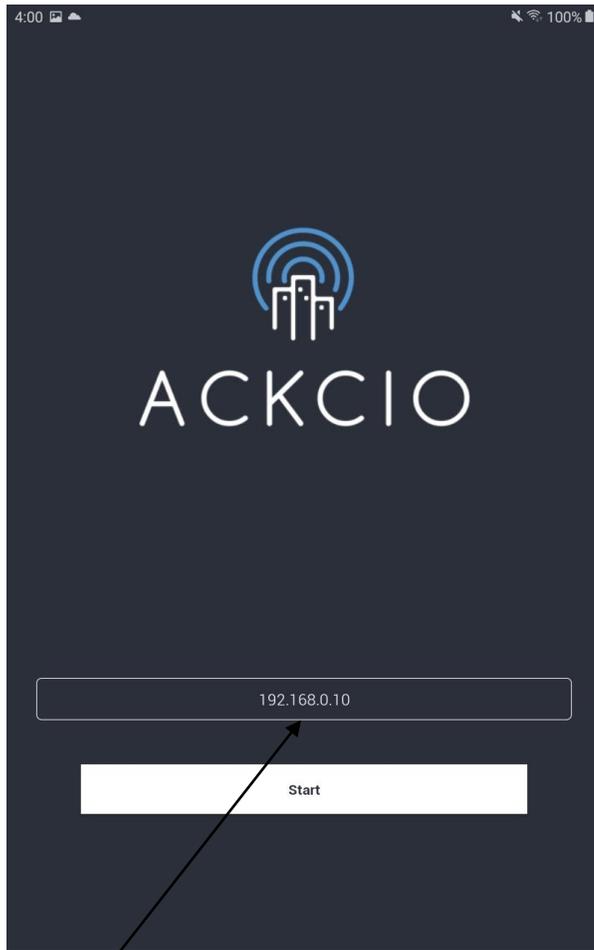


Figure 1

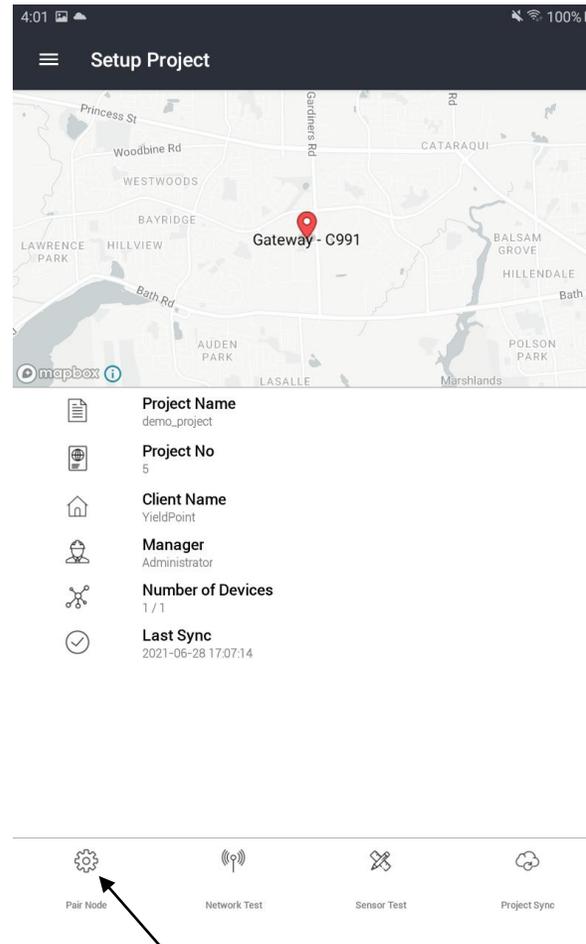


Figure 2

You will need the Ackcio Nimbus app installed on your tablet.

Then you enter the IP Address of the Gateway and tap START (Fig. 1) . Once in the Nimbus application, plug the USB cable into your node and into your tablet. Press RESET on the node and tap PAIR NODE on the app (Fig. 2).



Setting Up

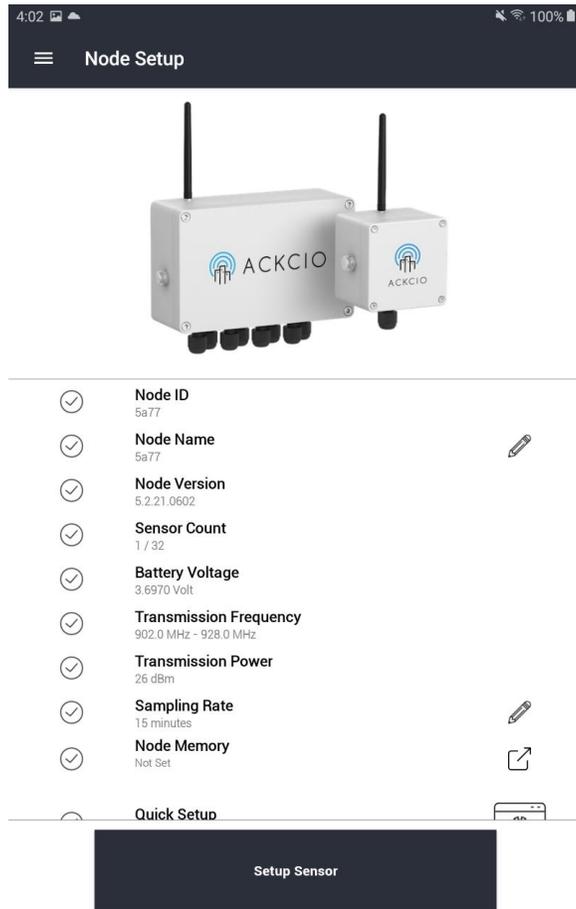


Figure 3

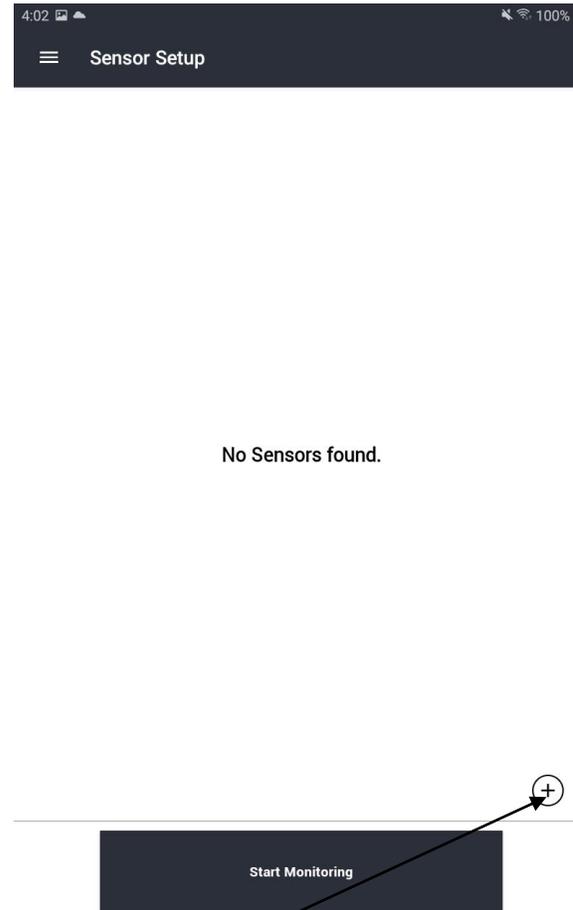


Figure 4

Tap SETUP SENSOR (Fig. 3). If there are any sensors already there, tap the TRASH icon to delete them, then tap the + symbol to begin adding new devices. (Fig. 4)

Adding your Devices

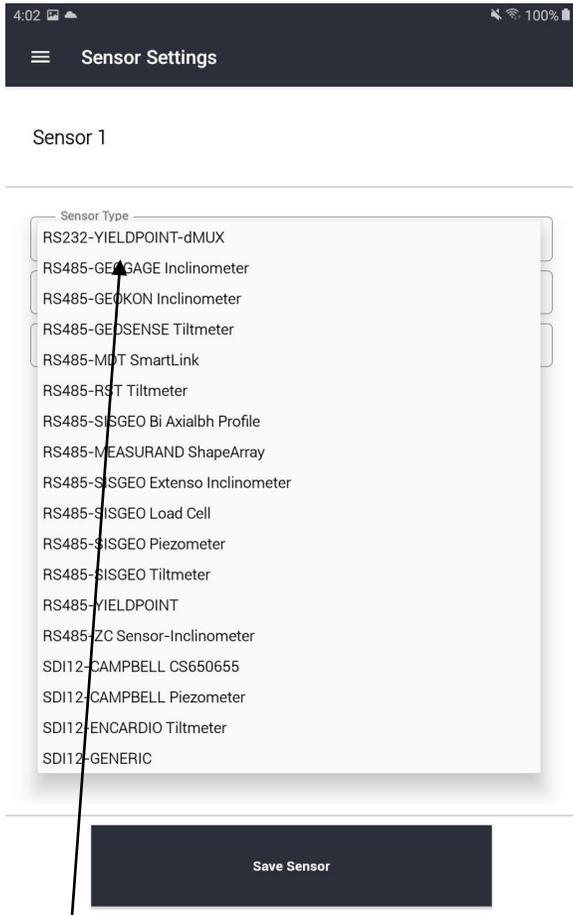


Figure 5



Figure 6

In the Sensor Type dropdown, select RS232-YIELDPOINT-dMUX (Fig. 5)

Give it a base name in the SENSOR CODE field, and click on the Magnifying Glass (Fig. 6) Enter the number of mux channels (4 or 8). The devices will show up in the SENSOR ADDRESS field separated by commas. Once all the devices appear, tap SAVE SENSOR.



Adding your Devices

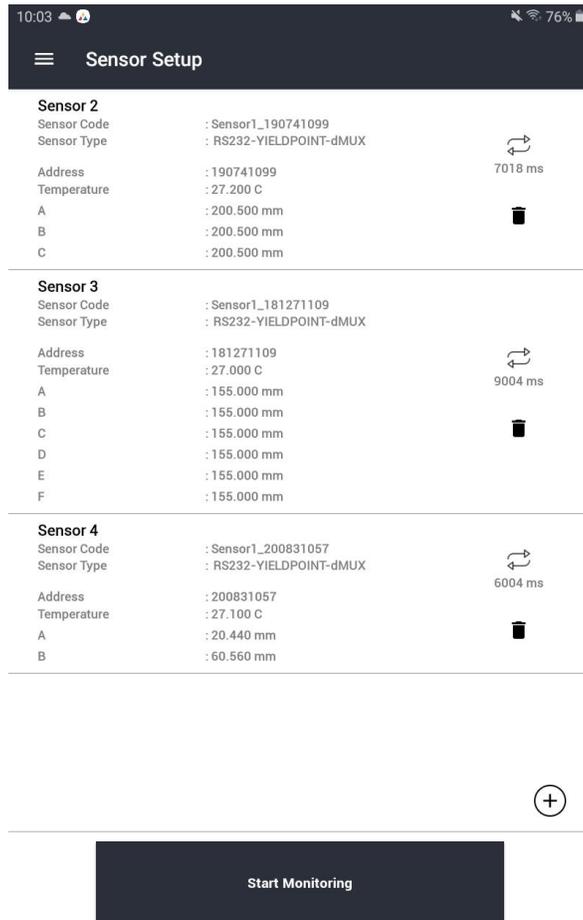


Figure 7

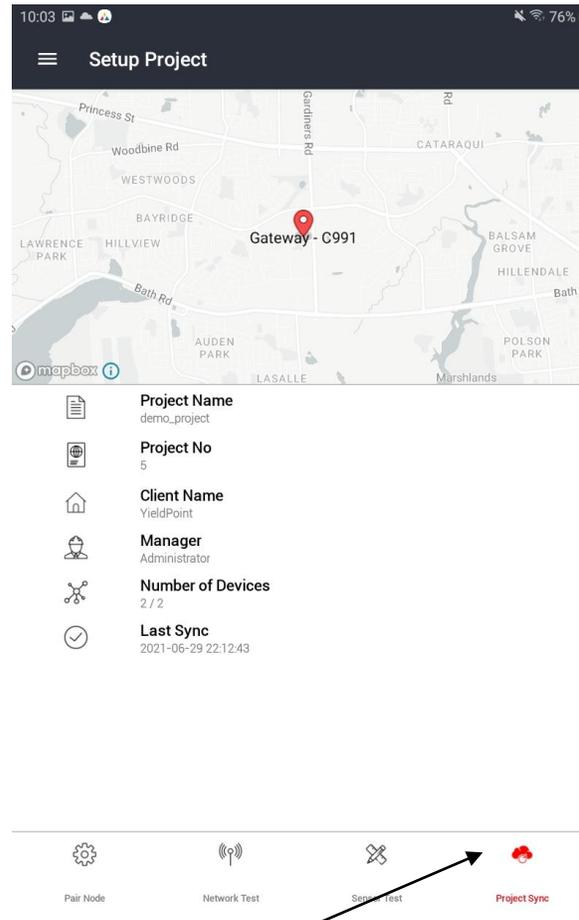


Figure 8

It will take you back to the SENSOR SETUP page but there will be devices there now. The app will get an initial reading from each device. Tap **START MONITORING**. (Fig. 7) Finally tap **PROJECT SYNC** to update the Gateway. (Fig. 8)

