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Mega_Link 2
Product Familiarisation
Thames Water

Part 4 - 4G Comms

26th March 2026

SIM Card

- Each node requires a SIM card:
  - Fixed IP, Private APN with Peer to Peer operation
- We supply Vodafone or O2:
  - Come with 24 months of data
  - Towards the end of the term we will contact you for renewal for another 24 months
- Or, you supply your own:
  - With credentials, we can configure and test

4G Aerial

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OSCAR40/5M — 5m cable
OSCAR40/10M — 10m cable
CON43 — SMA to TNC adaptor

4G SIM Card

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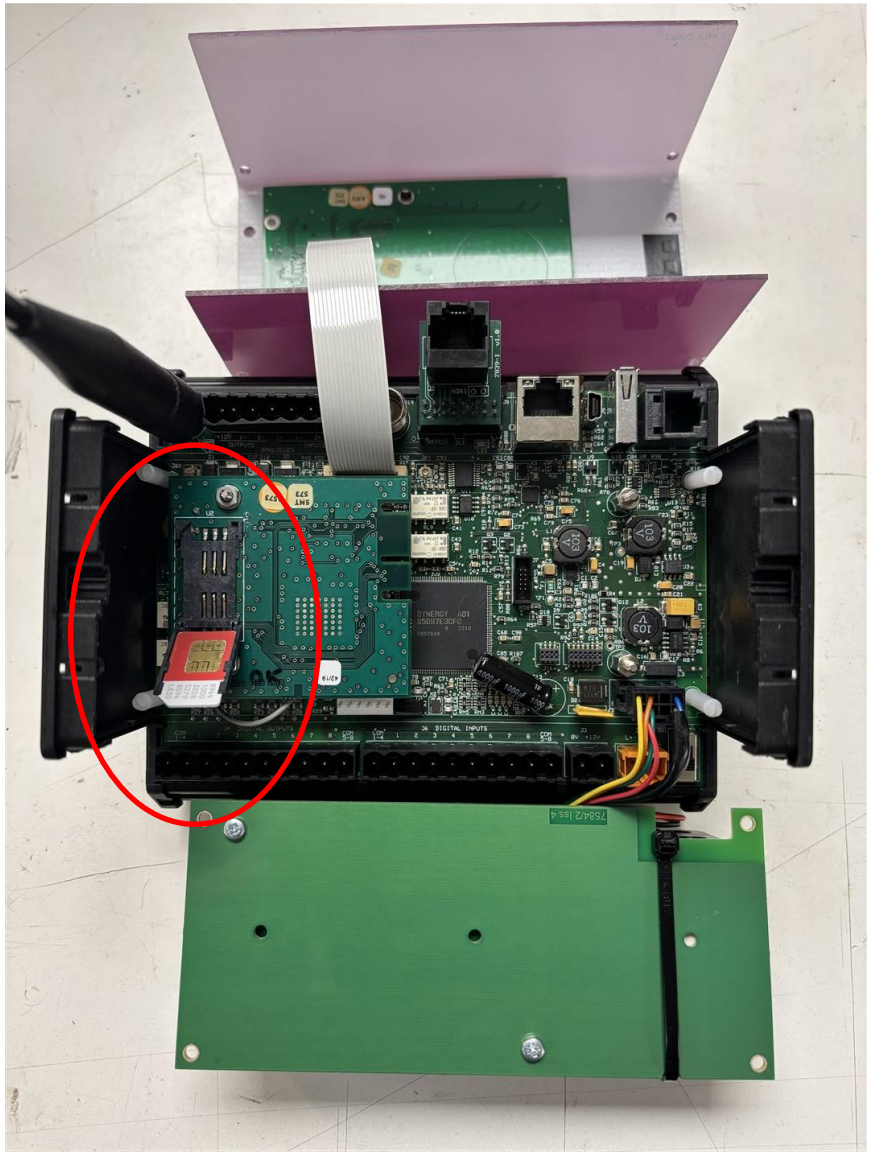

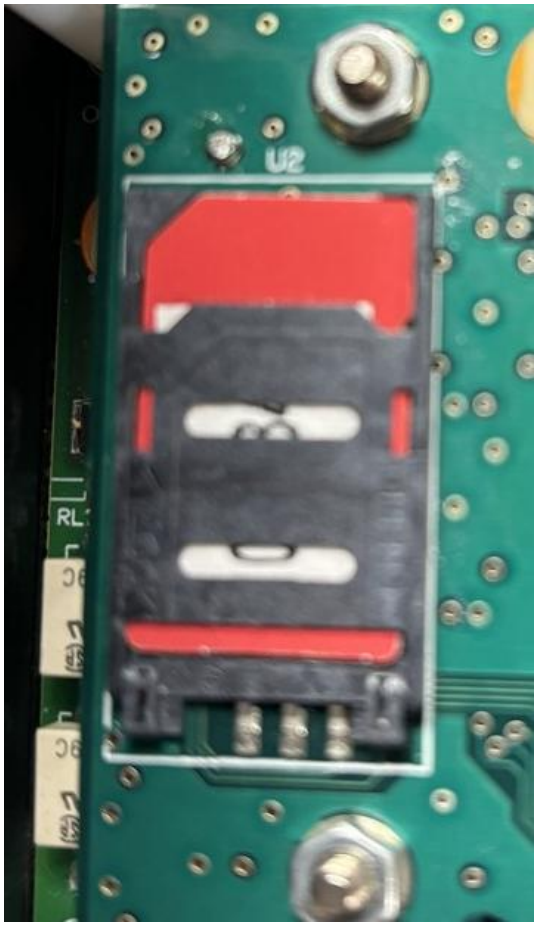

4G Site Survey

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CSL CS2389 signal analyser

Typical RSRP Signal Strength Ranges

- **-40 dBm to -70 dBm (Excellent):** Optimal signal, high data speeds.
- **-71 dBm to -90 dBm (Good):** Reliable connection, good performance.
- **-91 dBm to -110 dBm (Fair/Poor):** Marginal connection, potential for dropped calls or slow data.
- **-111 dBm to -140 dBm (Unusable):** Very weak signal, constant drops. wraycastle.com +4

4G Survey Report

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Ref:	Q11300															
Time	09:22:28	Date	16/10/2025													
Location	SJ 75009 96423	Within building. 1M elevation														
	UU Davyhulme WwTW, M41 7JB															
Customer	UU / Eric Wright Water															
Contact	Paul Standring	07860 700 850														

For link between Davyhulme and Urmston:
Davyhulme: 1DO; 1AO
Urmston: 1DI; 1AO

See location photo on Tab 2

Top Networks	4			
NET NAME	TYPE	RSSI (-dBm)	RSSL (%)	NUMBER OF CELLS
O2 - UK	4G	71	77	2
vodafone UK	4G	74	73	3
vodafone UK	2G	85	46	5
O2 - UK	2G	89	39	3

Top Cells	5			
NET NAME	TYPE	ID	RSSI (-dBm)	RSSL (%)
O2 - UK	4G	115064	71	77
23430	4G	8650753	72	76
vodafone UK	4G	114964	74	73
23430	4G	8650765	75	72
23420	4G	740359	76	71

Number of 2G Cells	9												
NET NAME	ARFCN	BSIC	RSSI (-dBm)	BER1	BER2	MCC	MNC	LAC	ID	NUM ARFCN	STATUS	RSSL (%)	TYPE	BAND
vodafone UK	8	255	85	0	0	234	15	59	4857	0	0	46	2G	B_900
vodafone UK	22	255	86	0	0	234	15	59	63283	0	0	44	2G	B_900
23430	645	255	86	0	0	234	30	2468	58825	0	0	44	2G	B_1800
O2 - UK	118	255	89	0	0	234	10	21399	37997	0	0	39	2G	B_900
O2 - UK	119	255	91	0	0	234	10	22819	14380	0	1	36	2G	B_900
vodafone UK	20	255	94	0	0	234	15	58	20872	0	4	31	2G	B_900
O2 - UK	122	255	94	0	0	234	10	22819	38480	0	1	31	2G	B_900
vodafone UK	18	255	97	0	0	234	15	58	6976	0	4	26	2G	B_900
vodafone UK	17	255	98	0	0	234	15	58	24872	0	4	24	2G	B_900

Number of 3G Cells	4												
NET NAME	UARFCN	RSCP (-dBm)	RSSI (-dBm)	ECIO (-dB)	MCC	MNC	LAC	ID	SRC CODE	STATUS	RSSL (%)	TYPE	BAND
O2 - UK	3025	91	88	13	234	10	21722	47365500	5152	0	48	3G	B_900
O2 - UK	3025	91	88	13	234	10	21722	47365500	5152	0	48	3G	B_900
23420	10564	96	94	6	234	20	123	14185294	1232	4	39	3G	B_2100
23420	10588	99	97	7	234	20	123	14175993	1232	4	35	3G	B_2100

Number of 4G Cells	11													
NET NAME	EARFCN	RSRP (-dBm)	RSSI (-dBm)	RSRQ (-dB)	BW	MCC	MNC	TAC	ID	PHY. CELL ID	STATUS	RSSL (%)	TYPE	BAND
O2 - UK	6400	105	71	17	10	234	10	49824	115064	195	0	77	4G	B_800
23430	1617	110	72	18	20	234	30	20631	8650753	389	0	76	4G	B_1800
vodafone UK	6300	106	74	15	10	234	15	57361	114964	195	0	73	4G	B_800
23430	6225	100	75	11	5	234	30	20630	8650765	298	0	72	4G	B_800
23420	6175	101	76	11	5	234	20	3400	740359	211	0	71	4G	B_800
vodafone UK	3501	108	78	13	10	234	15	57355	4888844	282	0	69	4G	B_900
23430	497	119	80	19	20	234	30	20631	8650771	345	0	67	4G	B_2100
23430	1815	114	82	12	20	234	30	20631	8650756	389	0	64	4G	B_1800
23420	1363	120	84	16	20	234	20	3400	740353	277	0	62	4G	B_1800
vodafone UK	323	120	87	14	15	234	15	57361	114968	195	0	59	4G	B_2100
O2 - UK	199	123	89	17	10	234	10	49824	115068	195	0	57	4G	B_2100

ed.

Comms configuration

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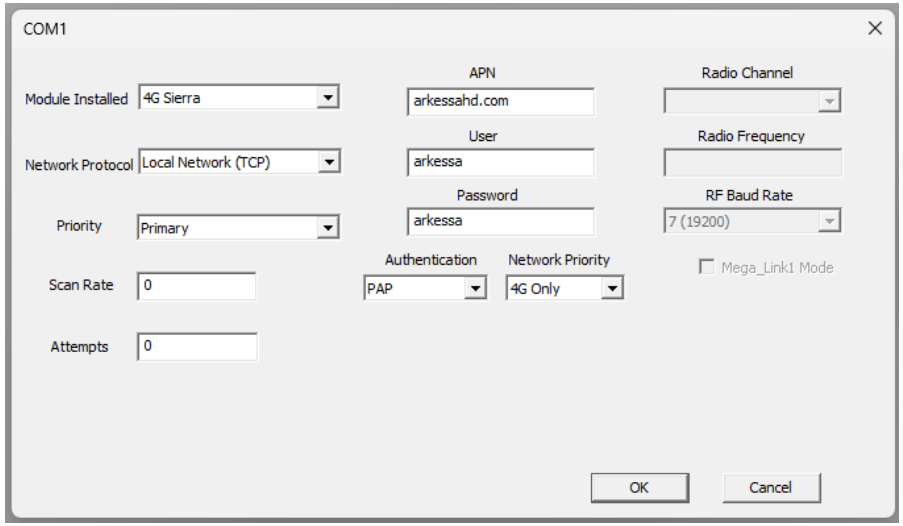
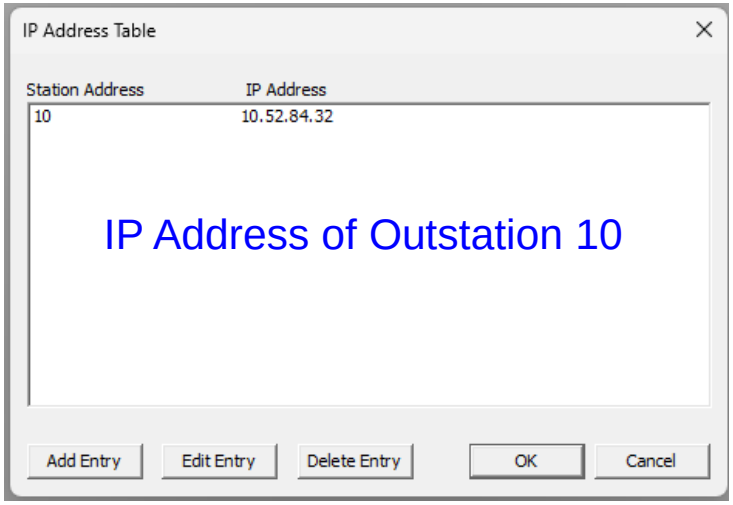
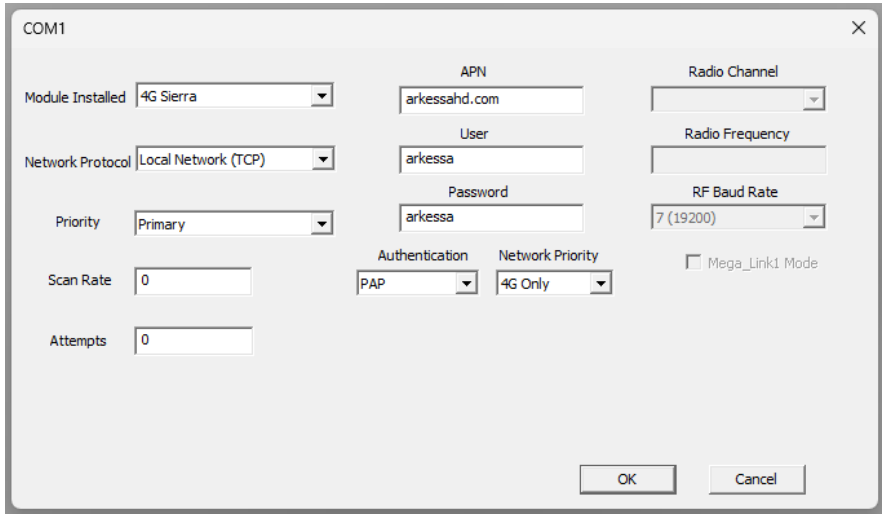
Basestation





Outstation 10



Outstation does not need to be programmed with IP address of basestation – it gets this in the TCP/IP message

Comms configuration

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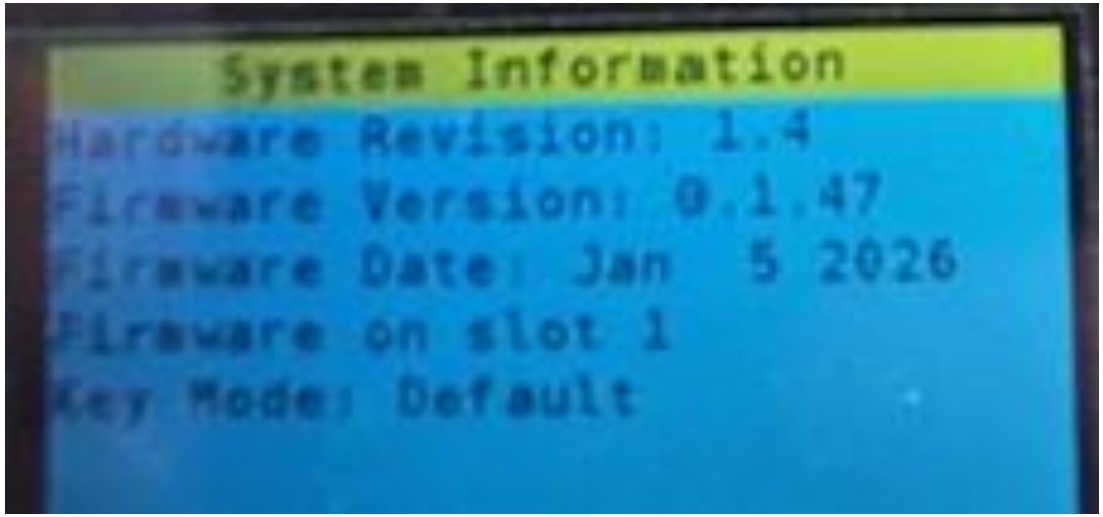
- 4G outstations must be set at addresses 10, 20, 30 etc.
  - And must be entered in basestation IP Address Table

- Giving automatic allowance for 9 in between addresses, e.g. 11, 12, 13….19 for I/O expansion modules at Outstation 10

- I/O expansion module addresses, e.g. 11, 12, 13…19 do not need to be entered in the IP Address Table
  - Different to ML1 GPRS

Firmware Version

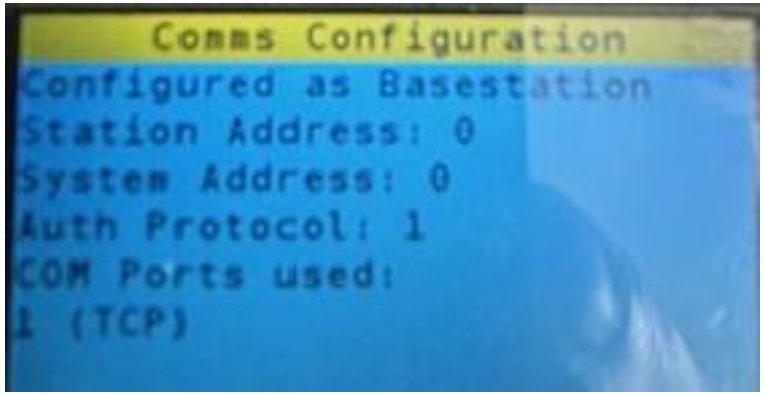
System Configuration -> System Information

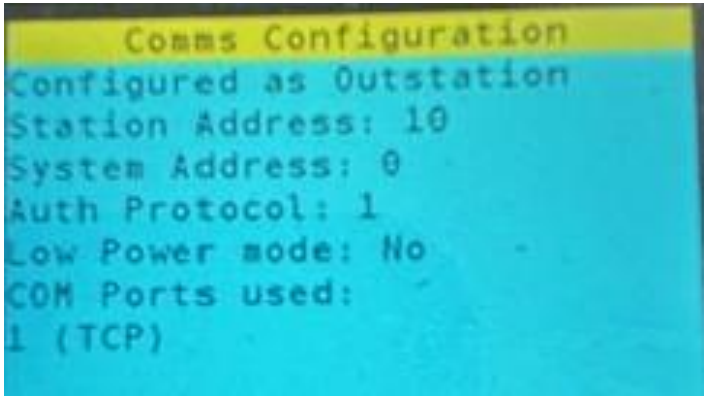


Firmware Version: 0.1.47

Comms Configuration

System Configuration -> Comms Configuration





Basestation
Address 0
COM Port 1 (TCP) 4G

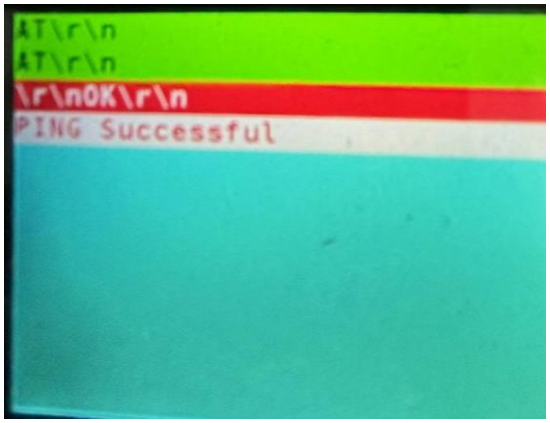
Outstation
Address 10
COM Port 1 (TCP) 4G

Eavesdrop Comms

After power up go to:

Comms Traffic -> COM1 Traffic

Wait 30 – 60 seconds and you should see the following sequence of screen information



Internal modem detected

AT command sequence begin

Eavesdrop Comms

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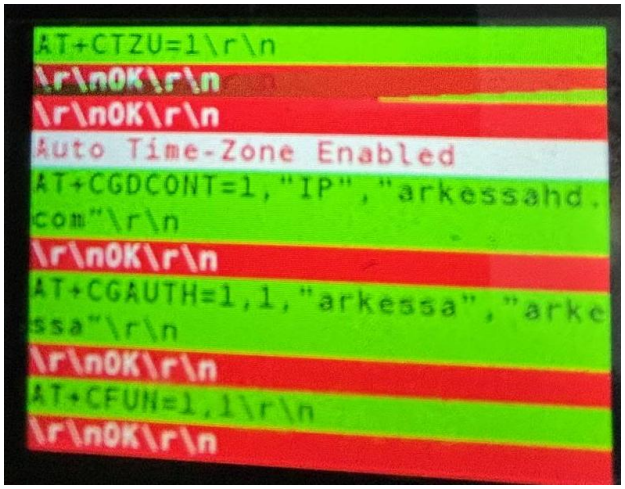
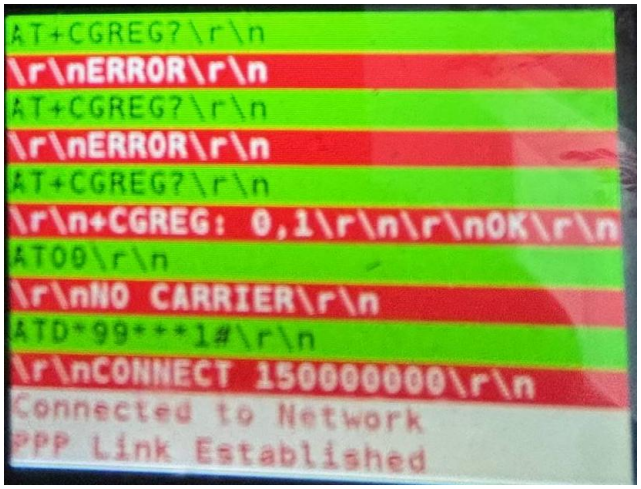
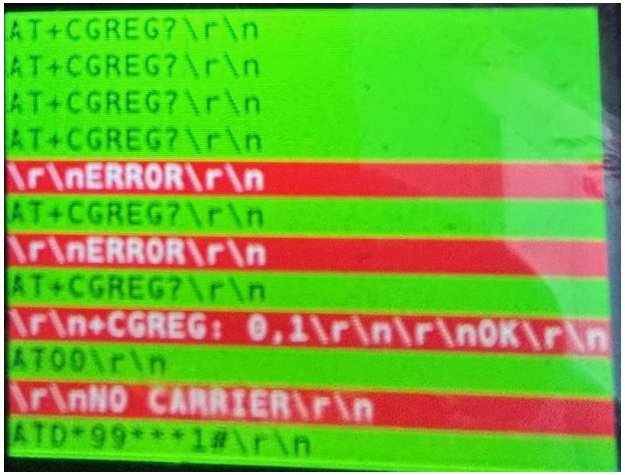


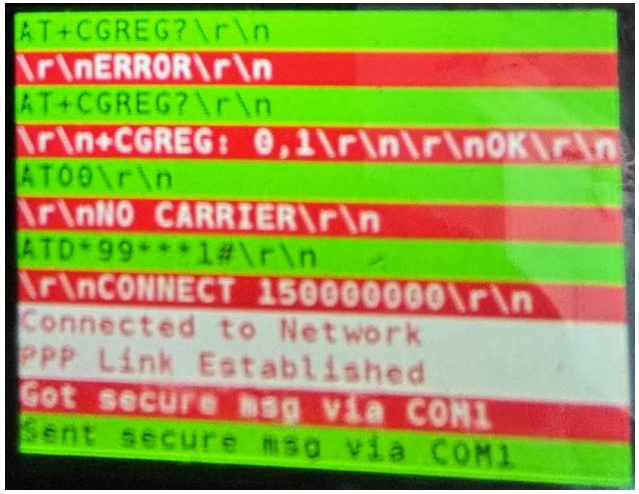
SIM Card credentials



Connected to Network and PPP Link established



Carrier detected



First message sent & reply received ok

Eavesdrop Comms

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Comms Traffic -> COM1 Traffic

Basestation

Outstation 10

Basestation Tx is Green → Outstation Rx is Red

↓

Basestation Rx is Red ← Outstation Tx is Green

LED Indicators

Basestation

Outstation 10

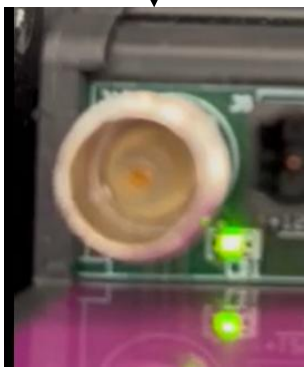
(1)

BS Tx is Green

(2)

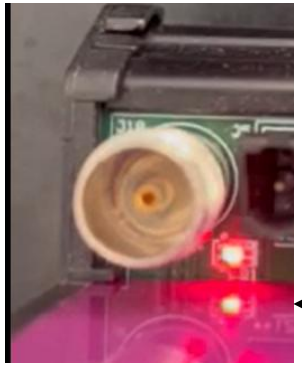
OS 10 Rx is Red

(3)



OS 10 Tx is Green

(4)

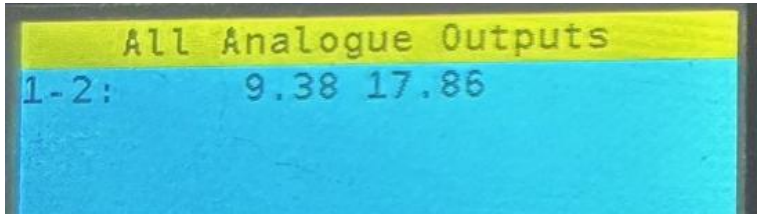


BS Rx is Red

Analogue I/O

System Status -> All Analogue Outputs

Basestation



System Status -> All Analogue Inputs

Outstation 10