

Huawei ATD4516R9 (SUA-6) Antenna Array and Port Numbering Layout

Looking at Front of antenna:-

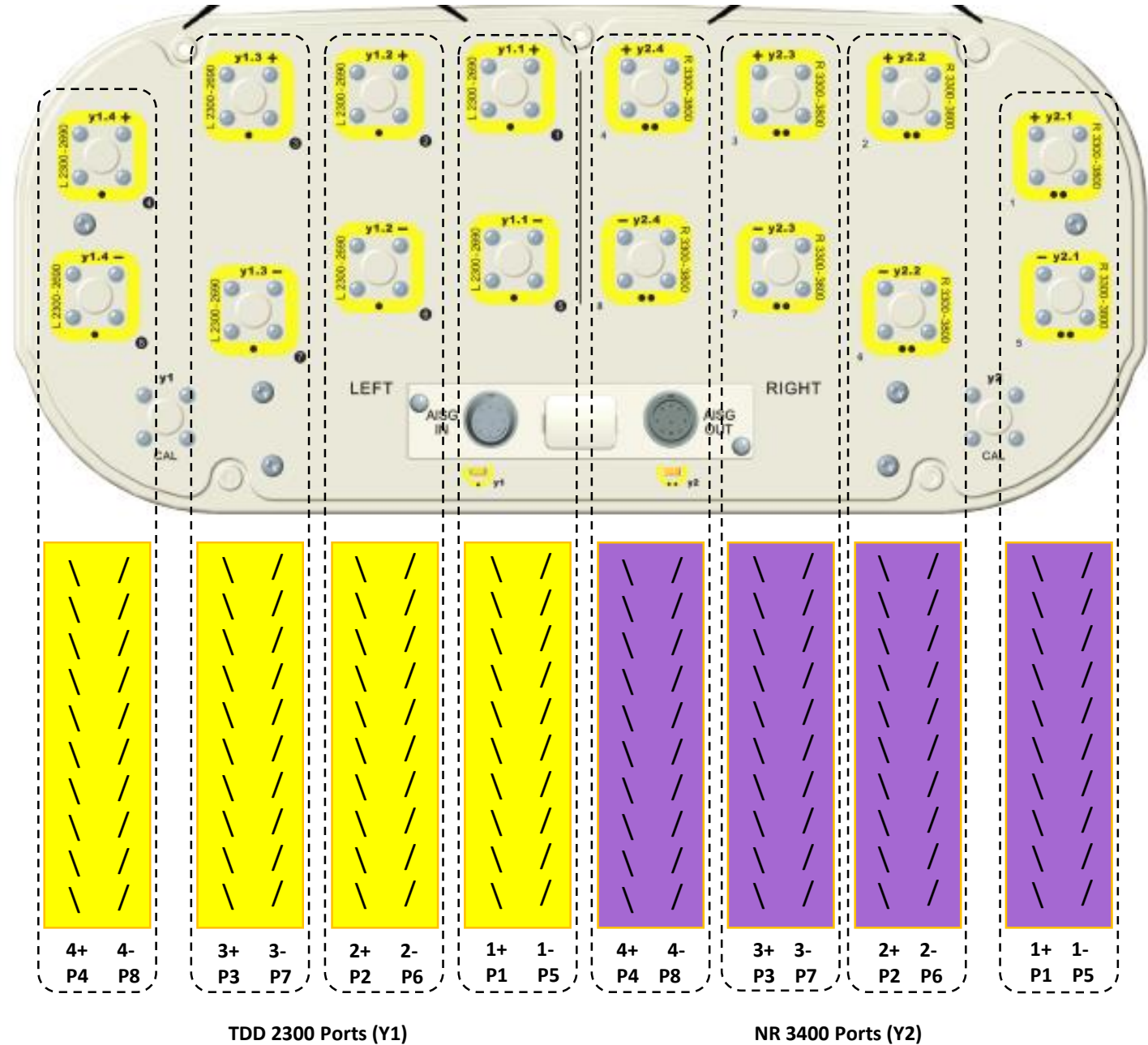
Y1.1+/- is RHS outer array (2300)
 Y1.2+/- is RHS inner array (2300)
 Y1.3+/- is LHS inner array (2300)
 Y1.4+/- is LHS outer array (2300)

Y2.1+/- is RHS outer array (3400)
 Y2.2+/- is RHS inner array (3400)
 Y2.3+/- is LHS inner array (3400)
 Y2.4+/- is LHS outer array (3400)

Weighting table below is for 65° broadcast beams for TDD 2300

See Huawei Excel sheet "ATD4516R9 -27012749 LTE weights" for full 2300 table and Huawei Excel sheet "ATD4516R9 -27012749 NR weights" for 5G Broadcast beam weighting info

TDD 2300							
P45							
Port 1		Port 2		Port 3		Port 4	
Amplitude I	Phase(°)	Amplitude I	Phase(°)	Amplitude I	Phase(°)	Amplitude I	Phase(°)
0.35	0	1	-10	1	-15	0.55	151
M45							
Port 5		Port 6		Port 7		Port 8	
Amplitude I	Phase(°)	Amplitude I	Phase(°)	Amplitude I	Phase(°)	Amplitude I	Phase(°)
0.35	0	1	-10	1	-15	0.55	151



TDD 2300 Ports (Y1)

NR 3400 Ports (Y2)

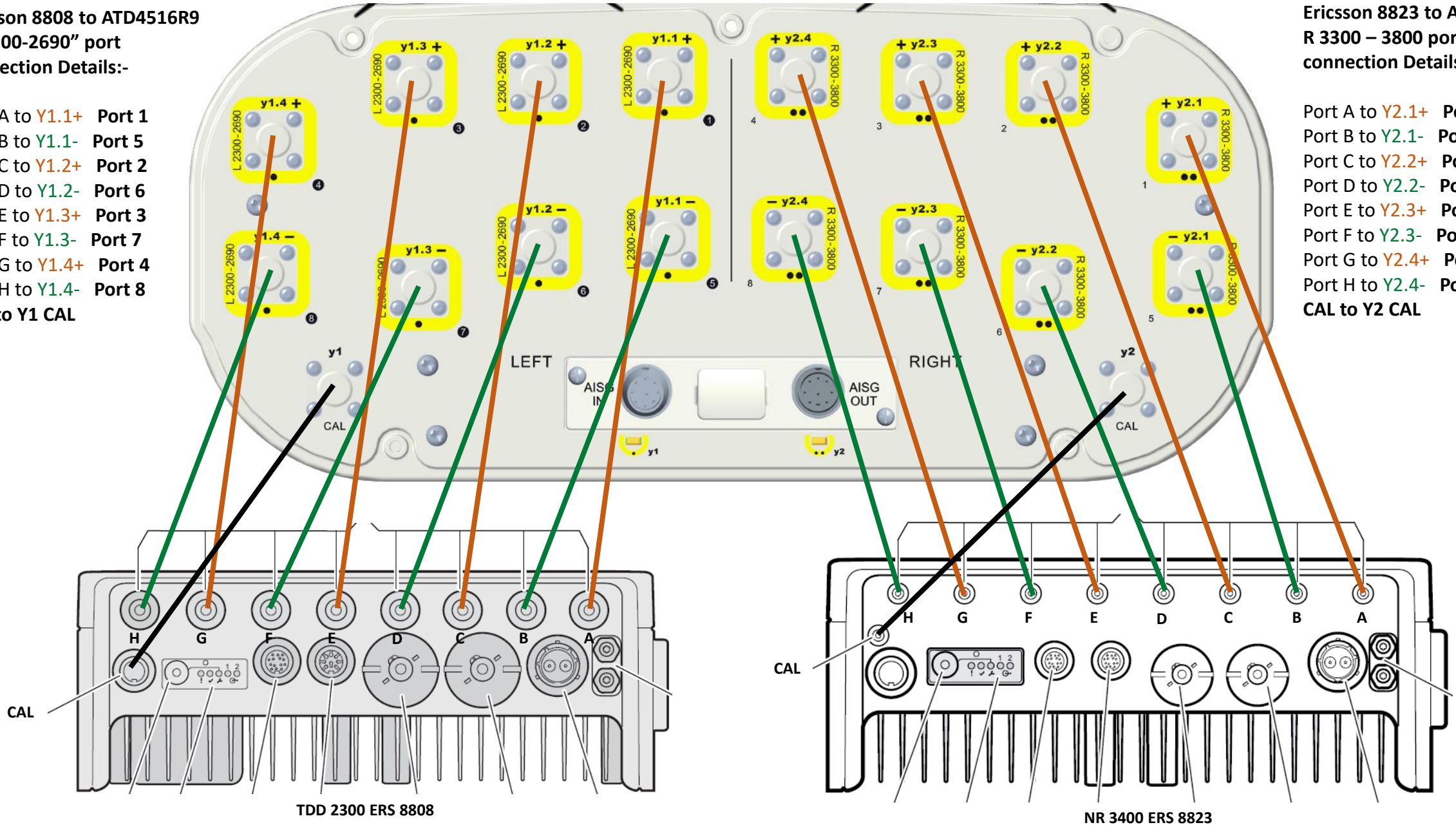
Huawei ATD4516R9 (SUA-6) Antenna Connection Details L23 / NR34

Ericsson 8808 to ATD4516R9 "L 2300-2690" port connection Details:-

- Port A to Y1.1+ Port 1
- Port B to Y1.1- Port 5
- Port C to Y1.2+ Port 2
- Port D to Y1.2- Port 6
- Port E to Y1.3+ Port 3
- Port F to Y1.3- Port 7
- Port G to Y1.4+ Port 4
- Port H to Y1.4- Port 8
- CAL to Y1 CAL

Ericsson 8823 to ATD4516R9 R 3300 – 3800 port connection Details:-

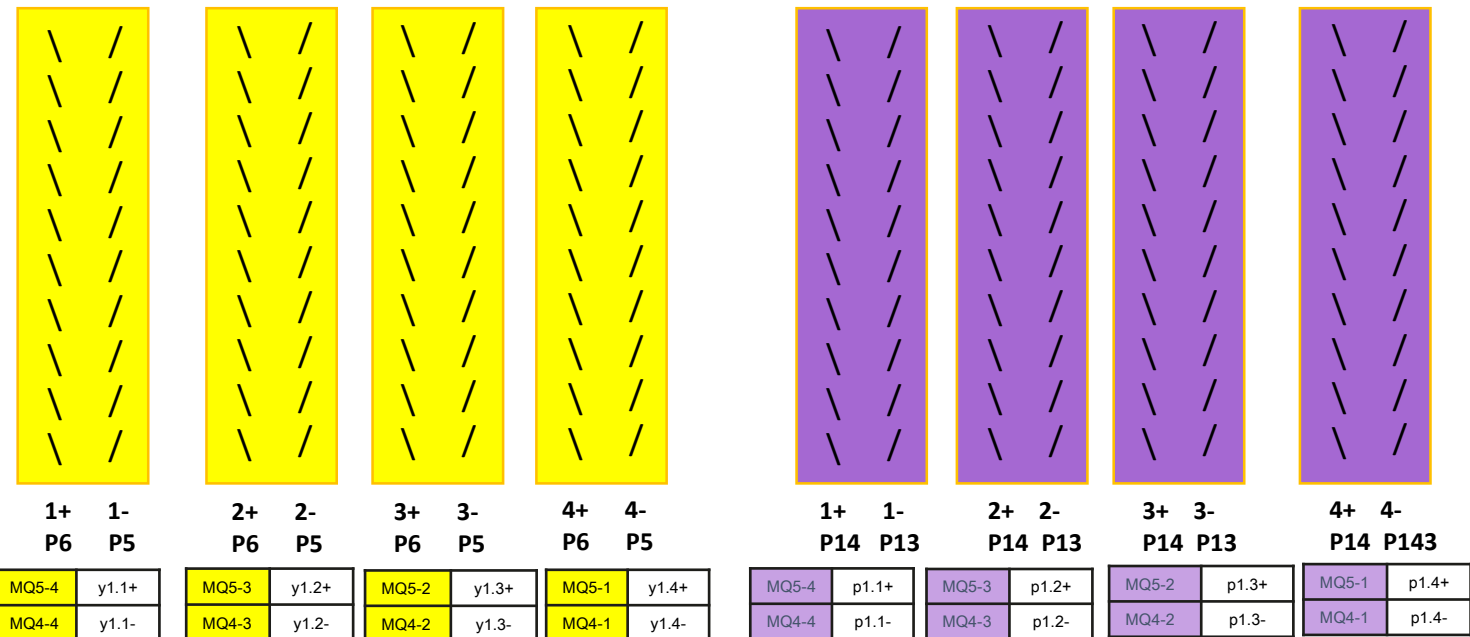
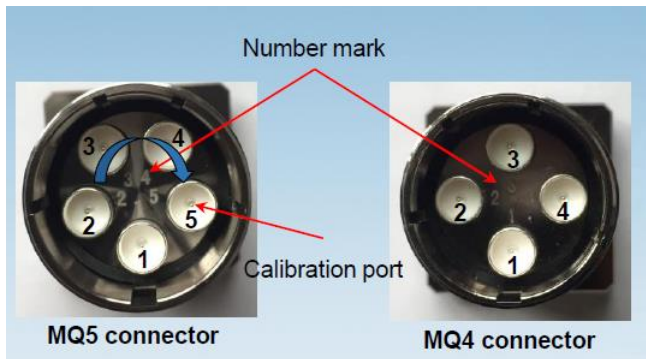
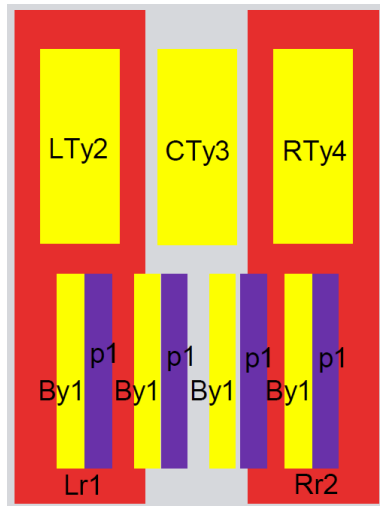
- Port A to Y2.1+ Port 1
- Port B to Y2.1- Port 5
- Port C to Y2.2+ Port 2
- Port D to Y2.2- Port 6
- Port E to Y2.3+ Port 3
- Port F to Y2.3- Port 7
- Port G to Y2.4+ Port 4
- Port H to Y2.4- Port 8
- CAL to Y2 CAL



TDD 2300 ERS 8808

NR 3400 ERS 8823

Huawei AHP4518R7 (SUA-7) Antenna Array and Port Numbering Layout

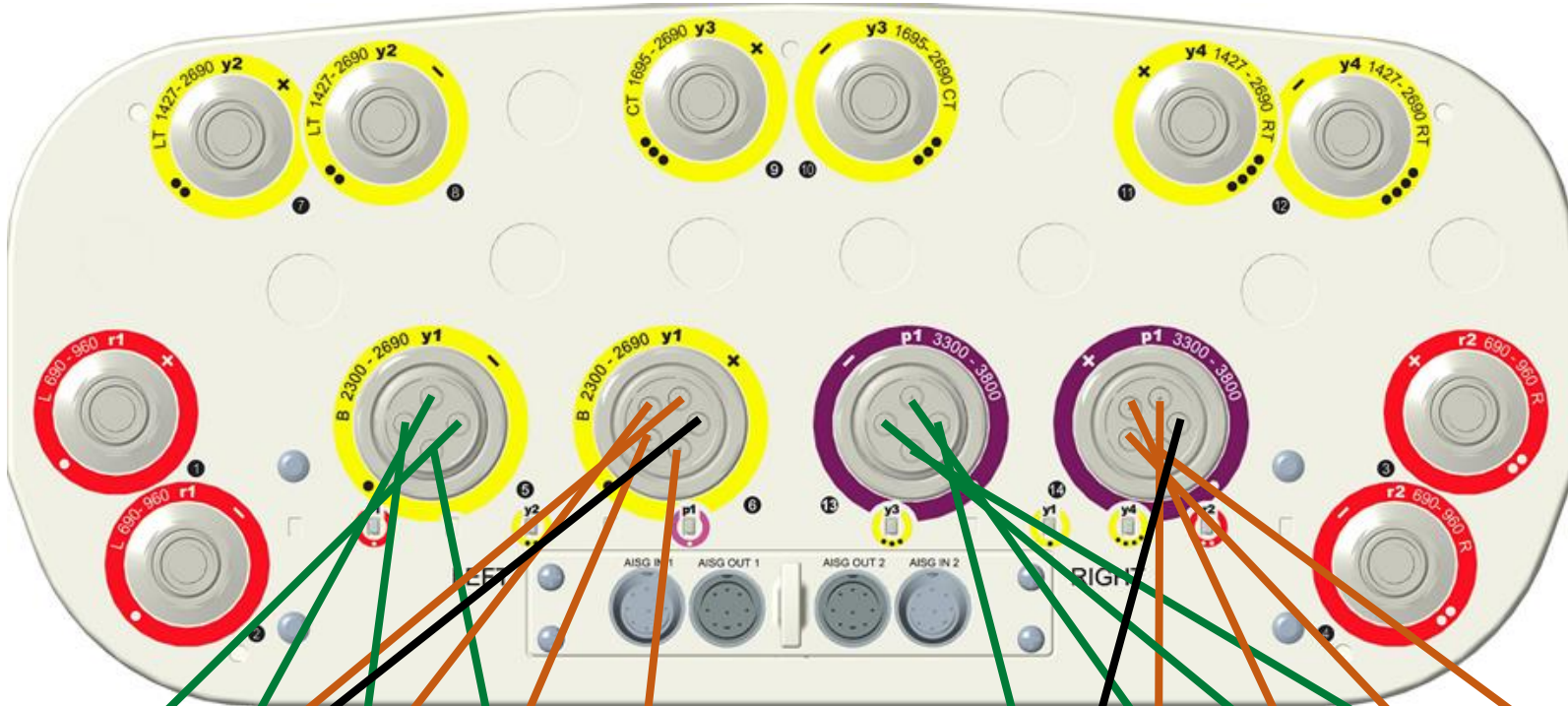


Looking at Front of antenna:-

Y1.1+/- is LHS outer array (2300)
 Y1.2+/- is LHS inner array (2300)
 Y1.3+/- is RHS inner array (2300)
 Y1.4+/- is RHS outer array (2300)

P1.1+/- is LHS outer array (3400)
 P1.2+/- is LHS inner array (3400)
 P1.3+/- is RHS inner array (3400)
 P1.4+/- is RHS outer array (3400)

Huawei AHP4518R7 (SUA-7) Antenna Connection Details – L23 / TEF only NR3400

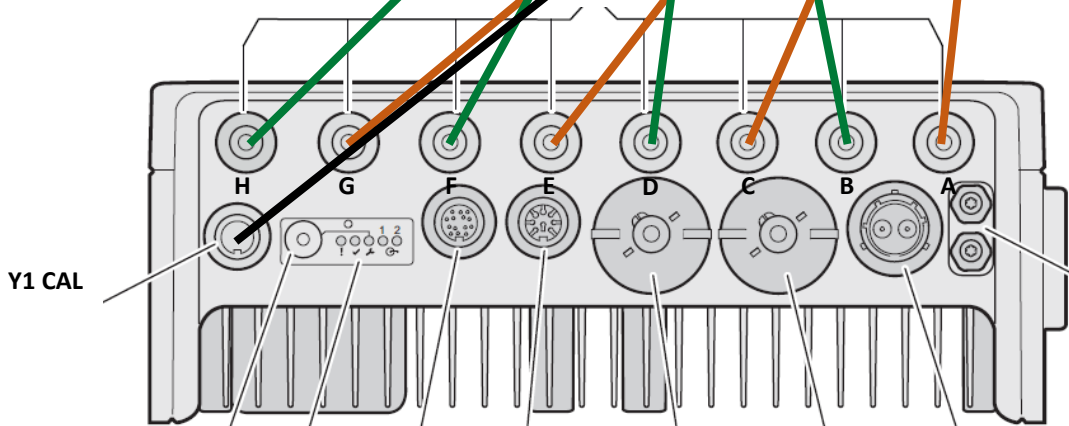


Ericsson 8808 to AHP4518R7 connection Details:-

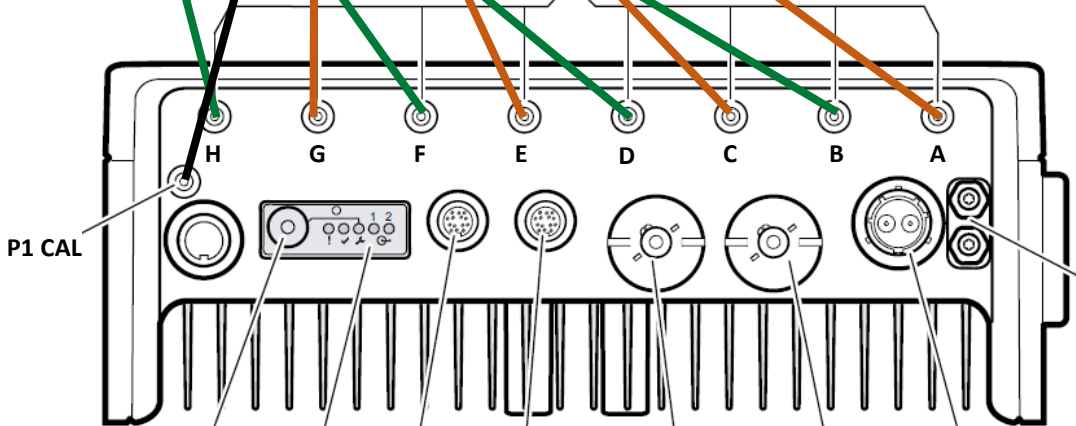
- Port A to MQ5.1 Port 6 Cluster
- Port B to MQ4.1 Port 5 Cluster
- Port C to MQ5.2 Port 6 Cluster
- Port D to MQ4.2 Port 5 Cluster
- Port E to MQ5.3 Port 6 Cluster
- Port F to MQ4.3 Port 5 Cluster
- Port G to MQ5.4 Port 6 Cluster
- Port H to MQ4.4 Port 5 Cluster
- CAL to MQ5.5 CAL Port 6 Cluster

Ericsson 8823 to AHP4518R7 connection Details:-

- Port A to MQ5.1 Port 13 Cluster
- Port B to MQ4.1 Port 14 Cluster
- Port C to MQ5.2 Port 13 Cluster
- Port D to MQ4.2 Port 14 Cluster
- Port E to MQ5.3 Port 13 Cluster
- Port F to MQ4.3 Port 14 Cluster
- Port G to MQ5.4 Port 13 Cluster
- Port H to MQ4.4 Port 14 Cluster
- CAL to MQ5.5 CAL Port 13 Cluster

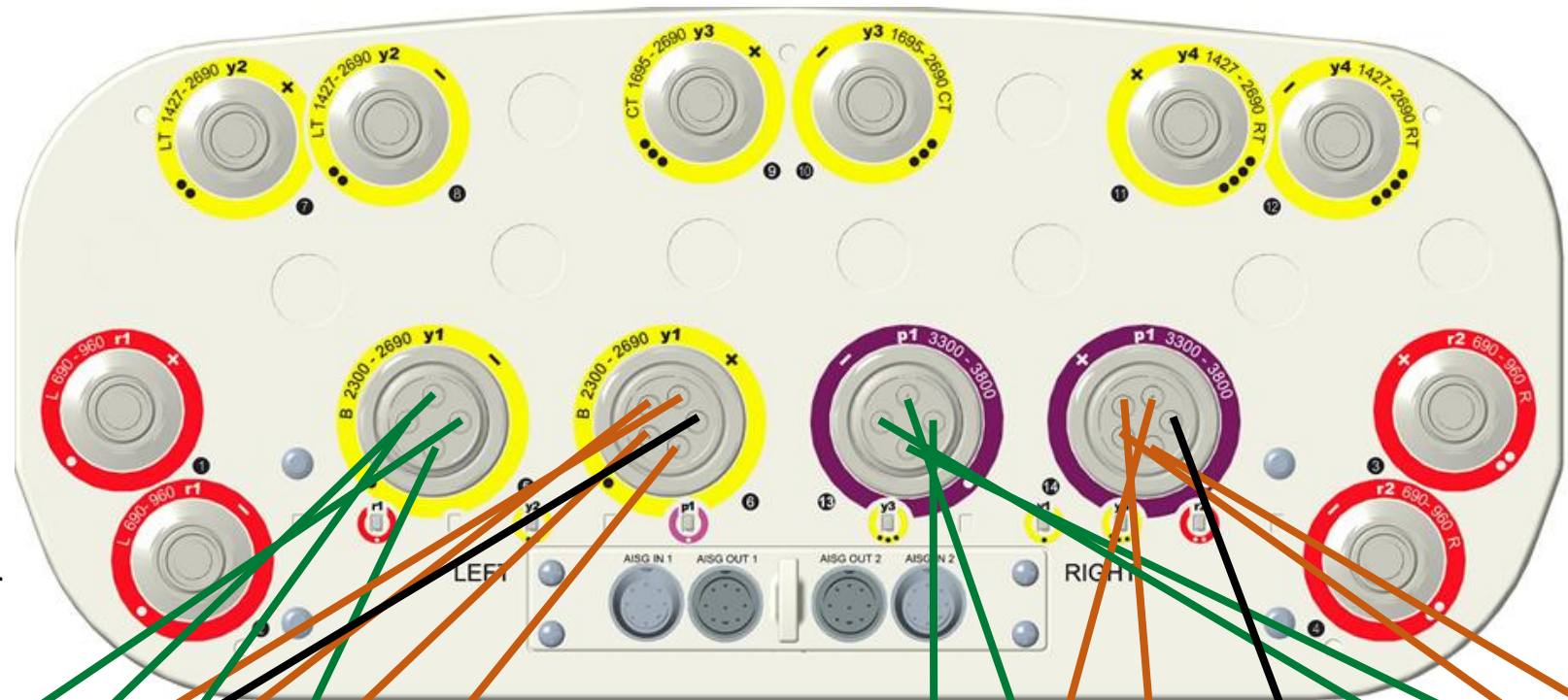


TDD 2300 ERS 8808



NR 3400 ERS 8823

Huawei AHP4518R7 (SUA-7) Antenna Connection Details – TEF + VF NR 3400 4 way working MORAN



TEF Ericsson 8823 to AHP4518R7 connection Details:-

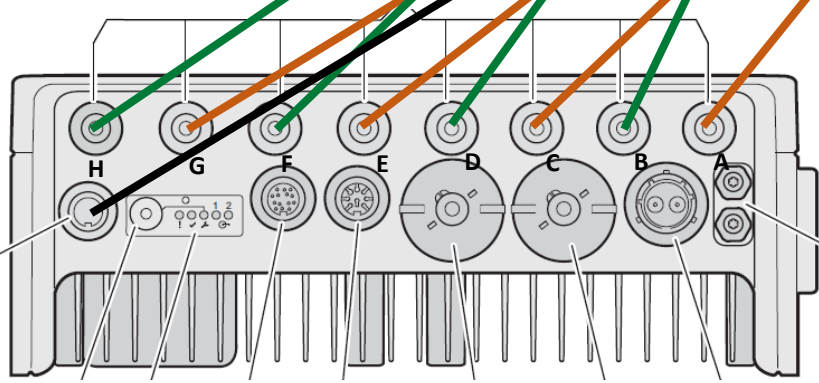
- Port A to MQ5.1 Port 13 Cluster
- Port B to MQ4.1 Port 14 Cluster
- Port C to MQ5.2 Port 13 Cluster
- Port D to MQ4.2 Port 14 Cluster
- CAL to MQ5.5 CAL Port 13

VF Ericsson 8823 to AHP4518R7 connection Details:-

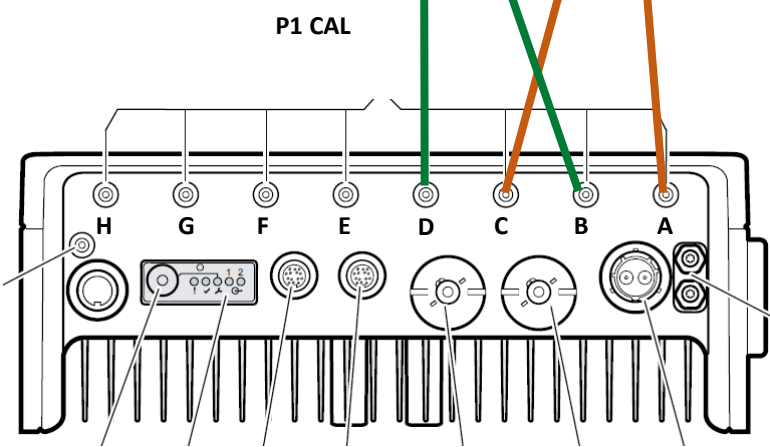
- Port A to MQ5.3 Port 13 Cluster
- Port B to MQ4.3 Port 14 Cluster
- Port C to MQ5.4 Port 13 Cluster
- Port D to MQ4.4 Port 14 Cluster

Ericsson 8808 to AHP4518R7 connection Details:-

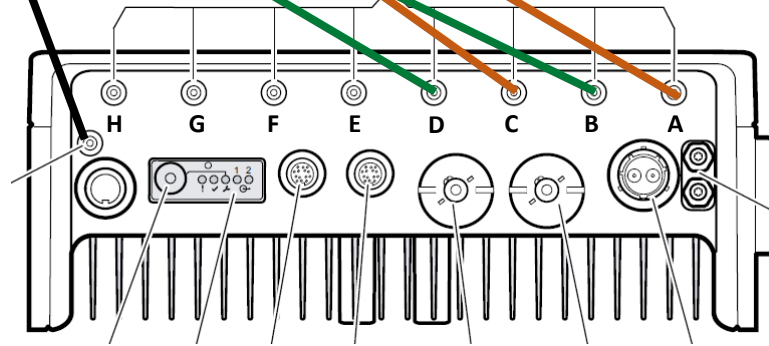
- Port A to MQ5.1 Port 6 Cluster
- Port B to MQ4.1 Port 5 Cluster
- Port C to MQ5.2 Port 6 Cluster
- Port D to MQ4.2 Port 5 Cluster
- Port E to MQ5.3 Port 6 Cluster
- Port F to MQ4.3 Port 5 Cluster
- Port G to MQ5.4 Port 6 Cluster
- Port H to MQ4.4 Port 5 Cluster
- CAL to MQ5.5 CAL Port 6 Cluster



TDD 2300 ERS 8808



VF NR 3400 ERS 8823



TEF NR 3400 ERS 8823

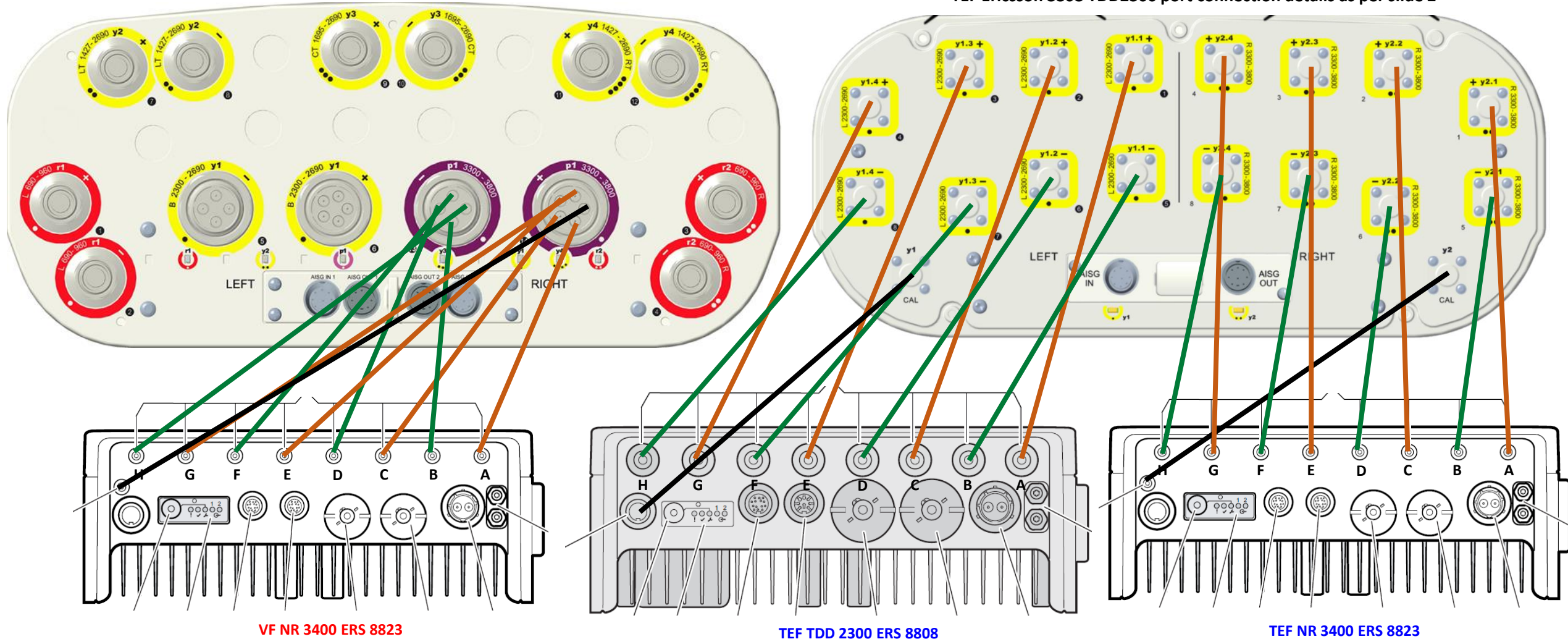
VF Ericsson 8823 to AHP4518R7 NR3400 port connection details:-

Port A to MQ5.1 Port 13 Port B to MQ4.1 Port 14
 Port C to MQ5.2 Port 13 Port D to MQ4.2 Port 14
 Port E to MQ5.3 Port 13 Port F to MQ4.3 Port 14
 Port G to MQ5.4 Port 13 Port H to MQ4.4 Port 14
 CAL to MQ5.5 CAL Port 13

TEF Ericsson 8823 to ATD4516R9 NR3400 port connection details:-

Port A to Y2.1+ Port 1 Port B to Y2.1- Port 5
 Port C to Y2.2+ Port 2 Port D to Y2.2- Port 6
 Port E to Y2.3+ Port 3 Port F to Y2.3- Port 7
 Port G to Y2.4+ Port 4 Port H to Y2.4- Port 8
 CAL to Y2 CAL

TEF Ericsson 8808 TDD2300 port connection details as per slide 2

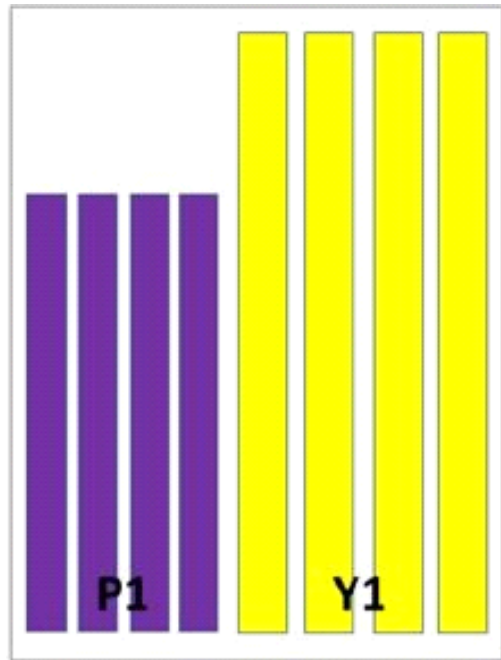


VF NR 3400 ERS 8823

TEF TDD 2300 ERS 8808

TEF NR 3400 ERS 8823

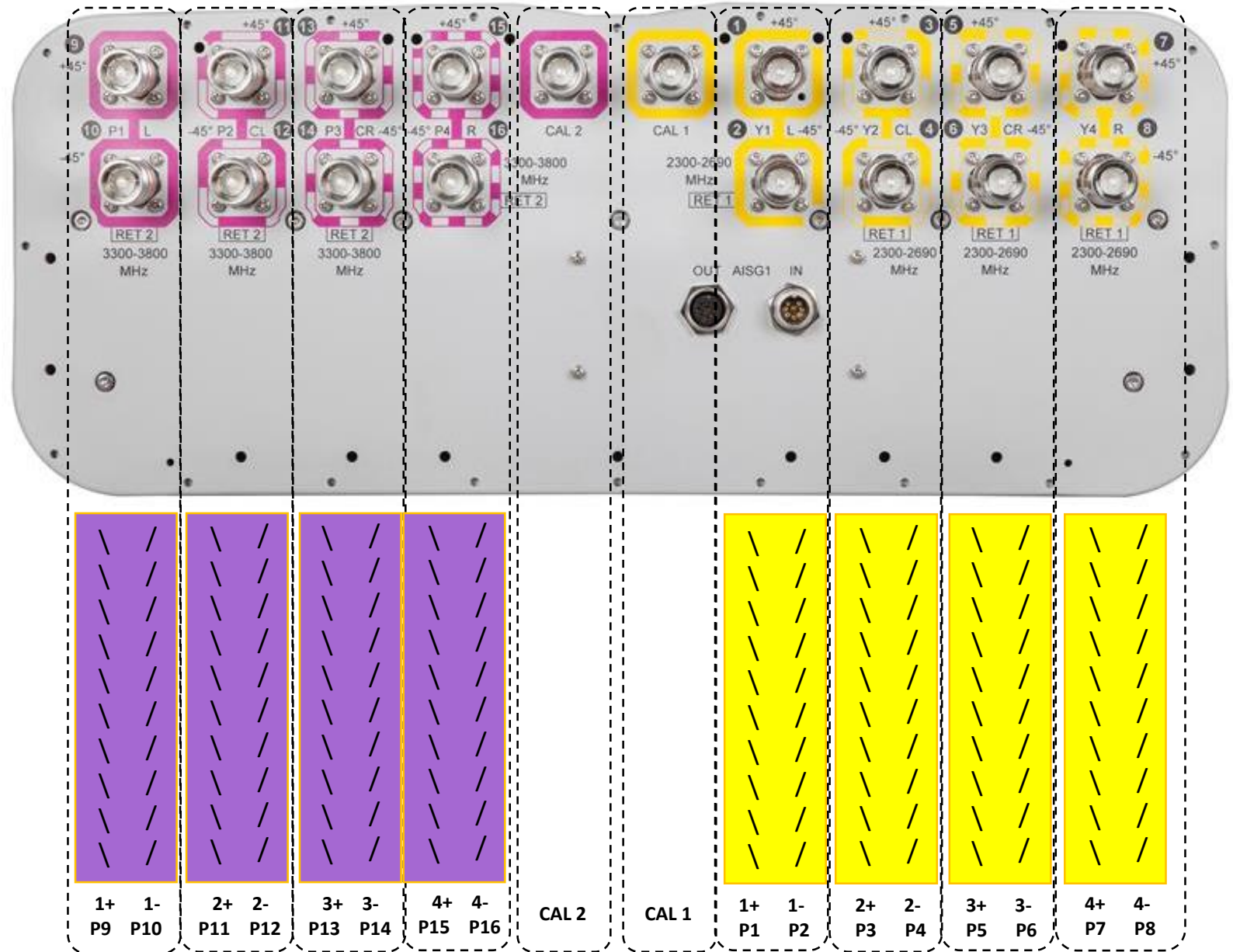
Commscope T4S4-90A-R2 (SUA-6) Antenna Array and Port Numbering Layout



Left Bottom Right

Looking at Front of antenna:-

- P9/10 +/- is LHS outer array (3400)
- P11/12 +/- is LHS inner array (3400)
- P13/14 +/- is RHS inner array (3400)
- P13/15 +/- is RHS outer array (3400)
- P1/2 +/- is LHS outer array (2300)
- P3/4 +/- is LHS inner array (2300)
- P5/6 +/- is RHS inner array (2300)
- P7/8 +/- is RHS outer array (2300)



NR 3400 Ports

TDD 2300 Ports

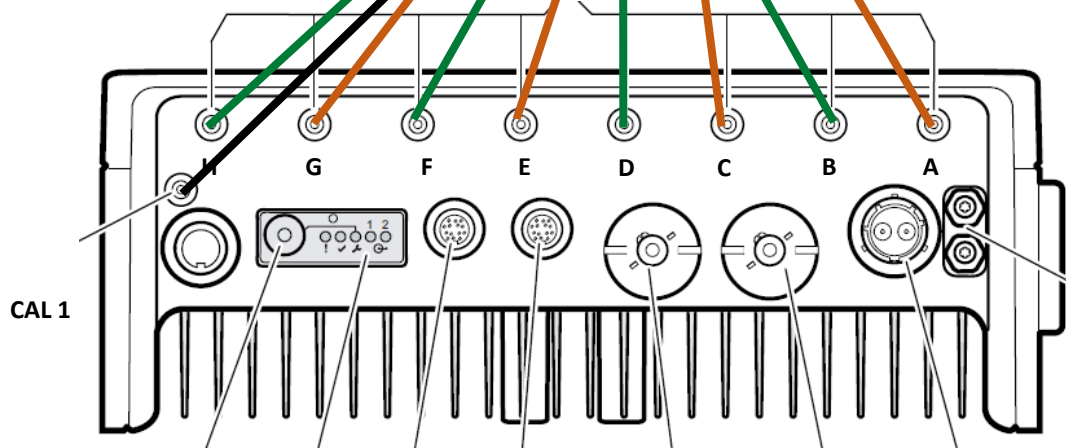
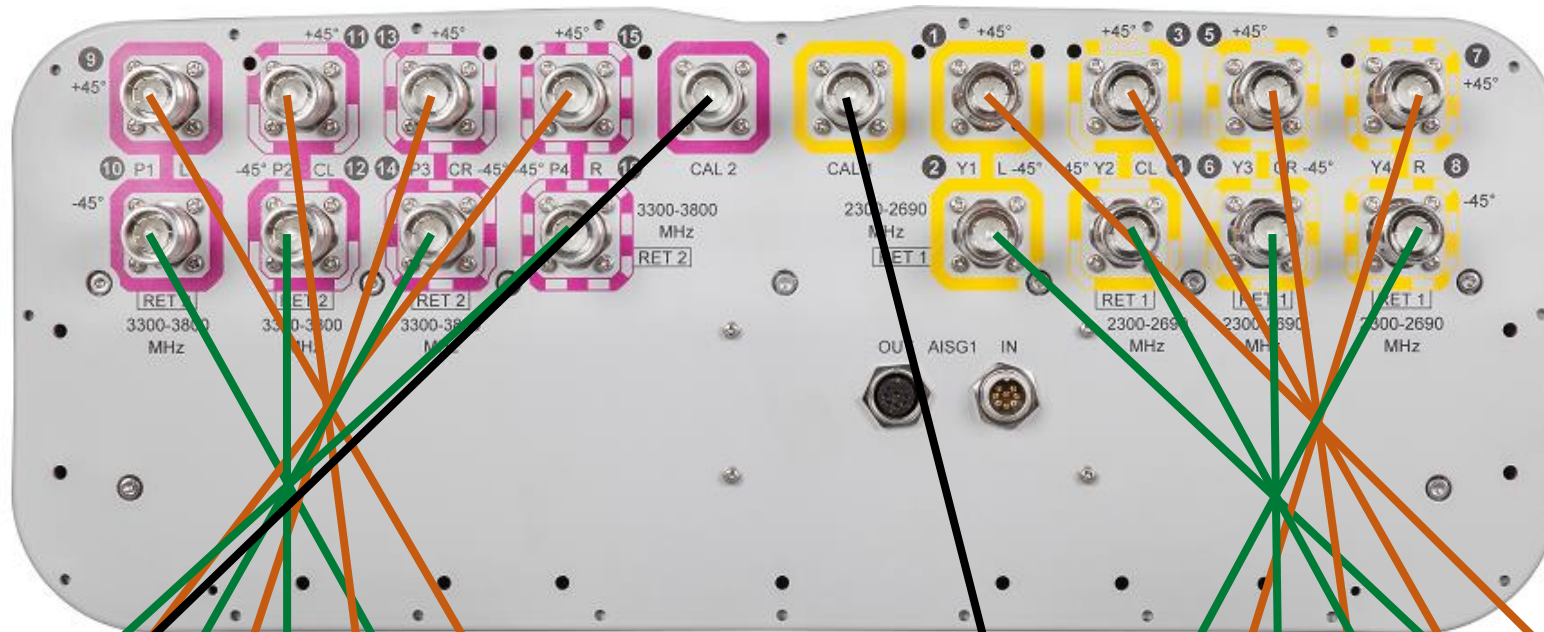
Commscope T4S4-90A-R2 (SUA-6) Antenna Connection Details

Ericsson 8823 to T4S4-90A-R2 connection Details:-

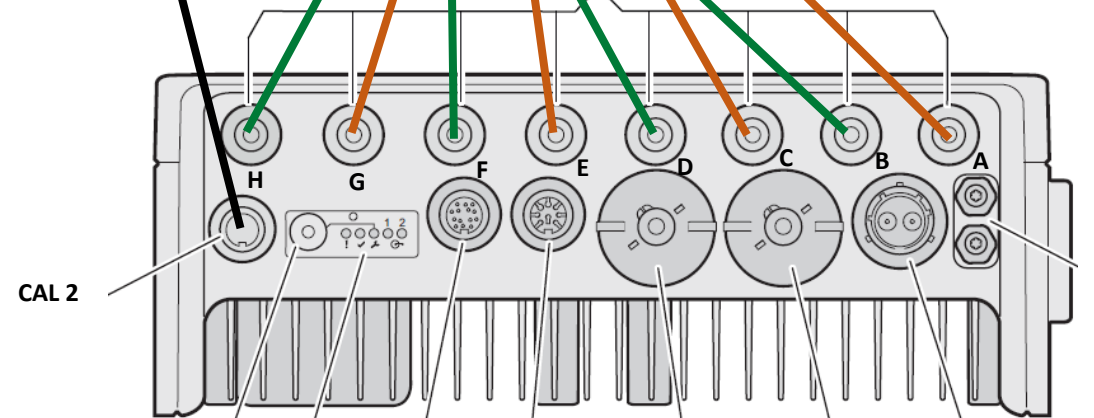
- Port A to Port 9
- Port B to Port 10
- Port C to Port 11
- Port D to Port 12
- Port E to Port 13
- Port F to Port 14
- Port G to Port 15
- Port H to Port 16
- CAL to CAL 2

Ericsson 8808 to T4S4-90A-R2 connection Details:-

- Port A to Port 1
- Port B to Port 2
- Port C to Port 3
- Port D to Port 4
- Port E to Port 5
- Port F to Port 6
- Port G to Port 7
- Port H to Port 8
- CAL to CAL 1

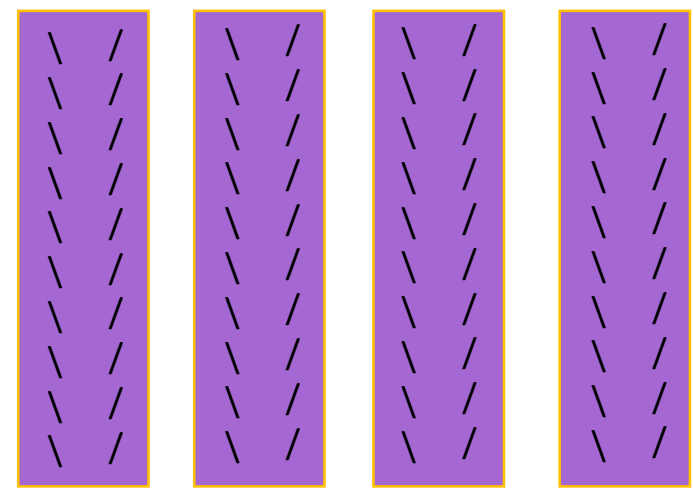
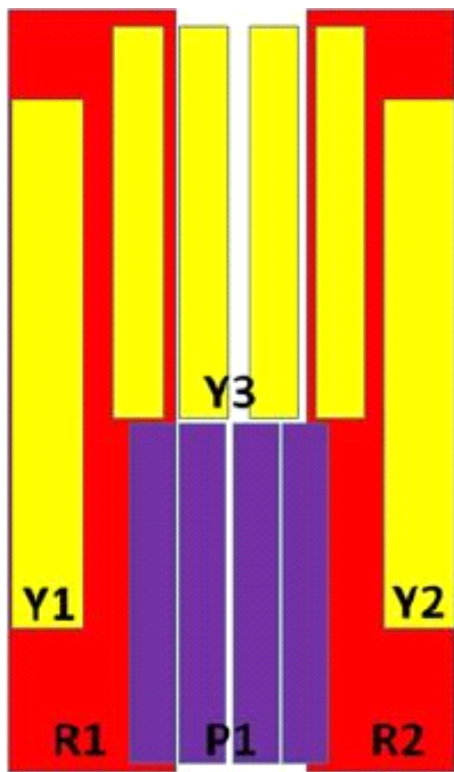


NR 3400 ERS 8823

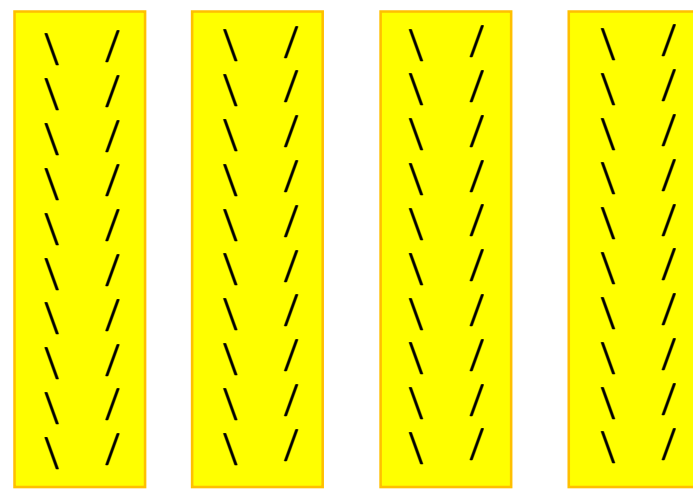


TDD 2300 ERS 8808

Commscope RRVVT4S4-65B-R6 (SUA-7) Antenna Array and Port Numbering Layout



1+ 1- 2+ 2- 3+ 3- 4+ 4-
 17 18 19 20 21 22 23 24



1+ 1- 2+ 2- 3+ 3- 4+ 4-
 9 10 11 12 13 14 15 16

Left Bottom Right

Looking at Front of antenna:-

P17/18 +/- is LHS outer array (3400)
 P19/20 +/- is LHS inner array (3400)
 P21/22 +/- is RHS inner array (3400)
 P23/24 +/- is RHS outer array (3400)

P9/10 +/- is LHS outer array (2300)
 P11/12 +/- is LHS inner array (2300)
 P13/14 +/- is RHS inner array (2300)
 P15/16 +/- is RHS outer array (2300)

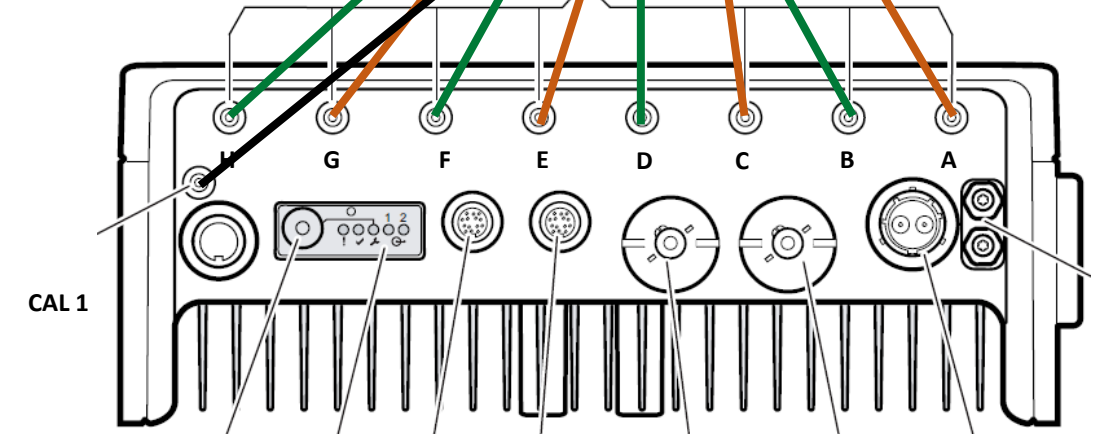
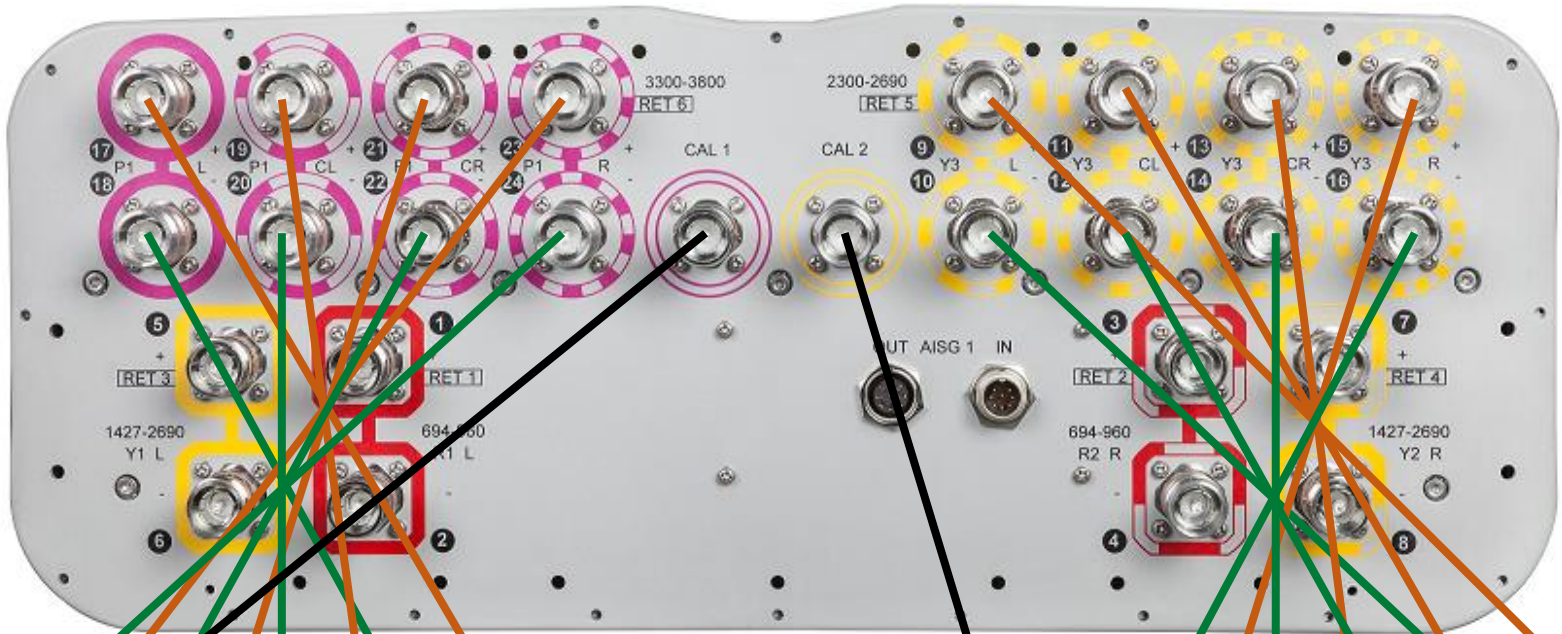
Commscope RRZZT4S4-65B-R6 (SUA-7) Antenna Connection Details

Ericsson 8823 to RRZZT4S4 connection Details:-

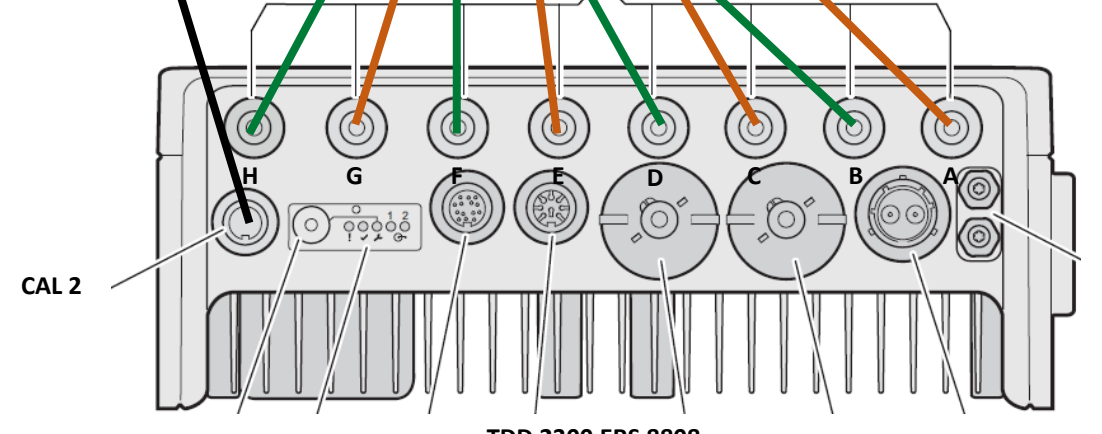
- Port A to Port 17
- Port B to Port 18
- Port C to Port 19
- Port D to Port 20
- Port E to Port 21
- Port F to Port 22
- Port G to Port 23
- Port H to Port 24
- CAL to CAL 1

Ericsson 8808 to RRZZT4S4 connection Details:-

- Port A to Port 9
- Port B to Port 10
- Port C to Port 11
- Port D to Port 12
- Port E to Port 13
- Port F to Port 14
- Port G to Port 15
- Port H to Port 16
- CAL to CAL 2



NR 3400 ERS 8823



TDD 2300 ERS 8808

Commscope RRZT4S4 (SUA-7) Antenna Connection Details – TEF + VF NR 3400 4 way working MORAN (Single SUA-7 Antenna)

TEF Ericsson 8823 to RRZT4S4 connection Details:-

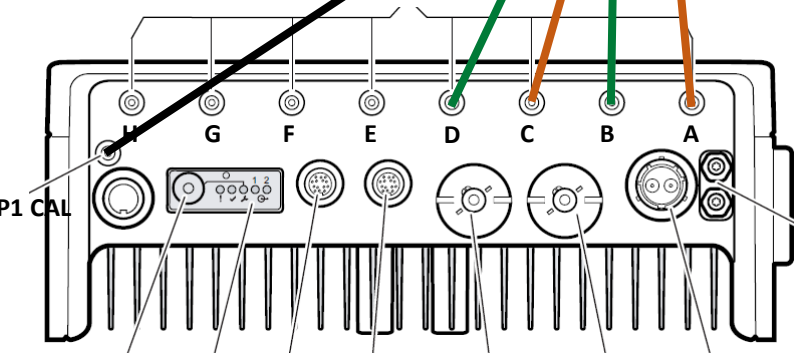
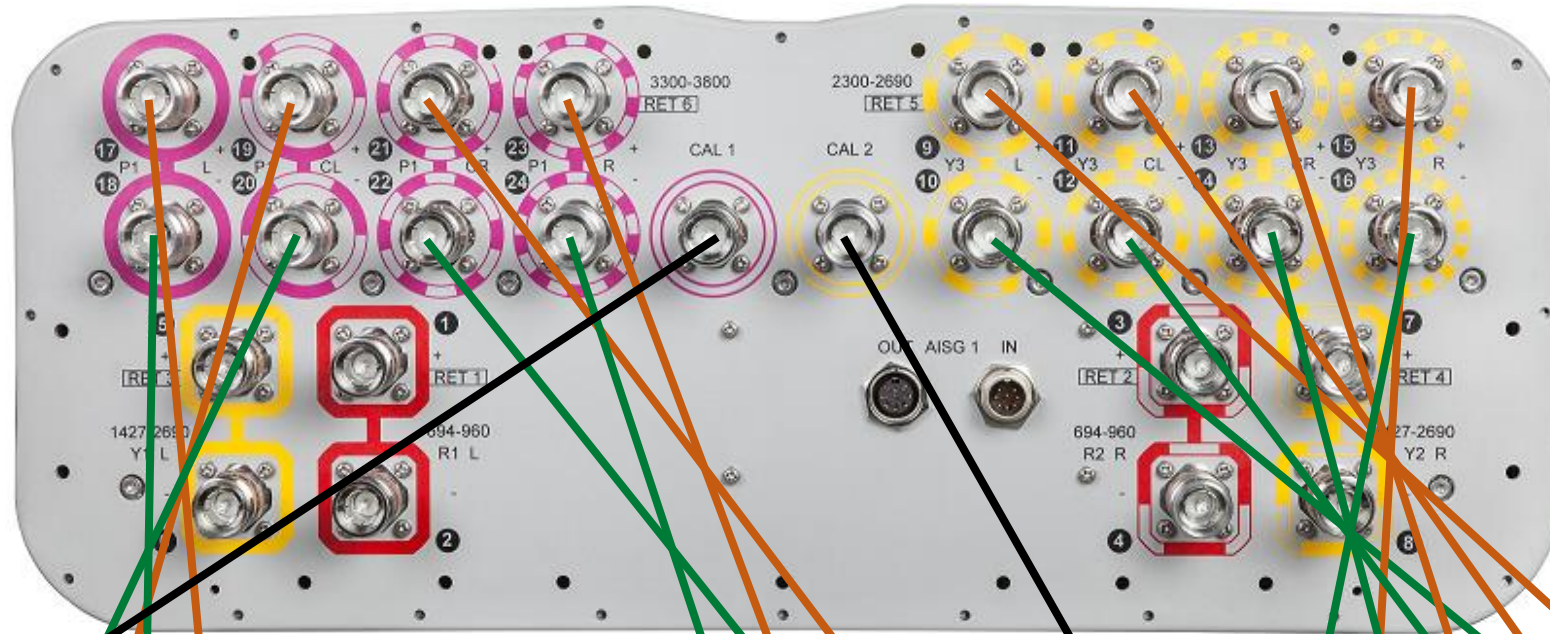
- Port A to Port 17
- Port B to Port 18
- Port C to Port 19
- Port D to Port 20
- CAL to CAL 1

VF Ericsson 8823 to RRZT4S4 connection Details:-

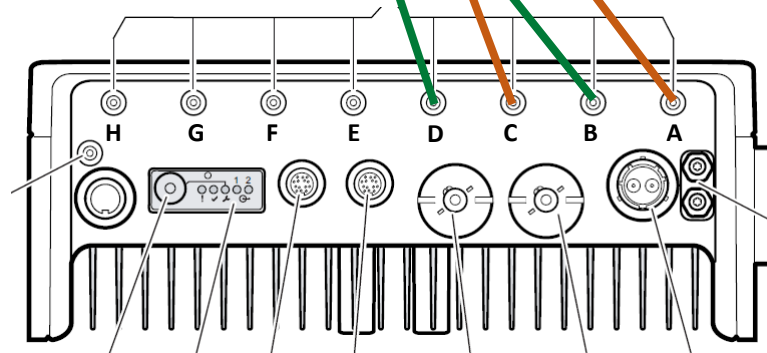
- Port A to Port 21
- Port B to Port 22
- Port C to Port 23
- Port D to Port 24

Ericsson 8808 to RRZT4S4 connection Details:-

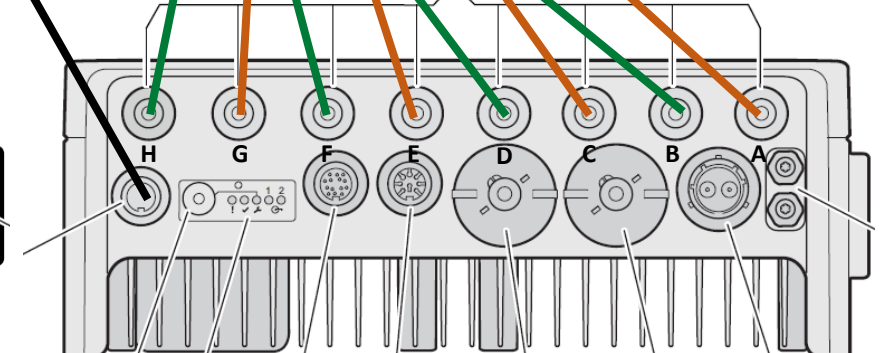
- Port A to Port 9
- Port B to Port 10
- Port C to Port 11
- Port D to Port 12
- Port E to Port 13
- Port F to Port 14
- Port G to Port 15
- Port H to Port 16
- CAL to CAL 2



TEF NR 3400 ERS 8823



VF NR 3400 ERS 8823



TDD 2300 ERS 8808

Commscope RRZZT4S4 + T4S4 Antenna Connection Details – TEF + VF NR 3400 8 way working MORAN (SUA-7 + SUA-6 antenna)

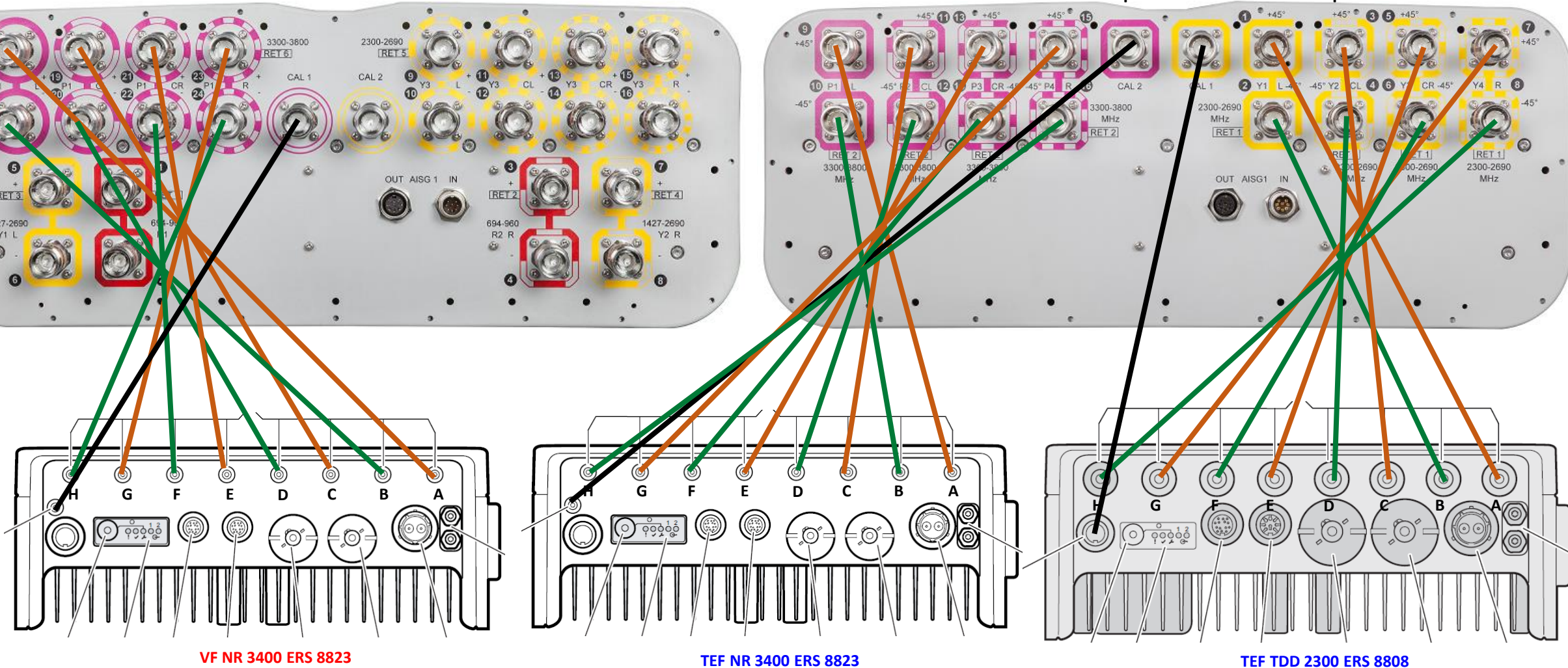
VF Ericsson 8823 to RRZZT4S4 NR3400 port connection details:-

- Port A to Port 17
- Port B to Port 18
- Port C to Port 19
- Port D to Port 20
- Port E to Port 21
- Port F to Port 22
- Port G to Port 23
- Port H to Port 24
- CAL to CAL 1

TEF Ericsson 8823 to T4S4 NR3400 port connection details:-

- Port A to Port 1
- Port B to Port 5
- Port C to Port 2
- Port D to Port 6
- Port E to Port 3
- Port F to Port 7
- Port G to Port 4
- Port H to Port 8
- CAL to CAL 2

TEF Ericsson 8808 TDD2300 port connection details as per slide 10



VF NR 3400 ERS 8823

TEF NR 3400 ERS 8823

TEF TDD 2300 ERS 8808

Nokia

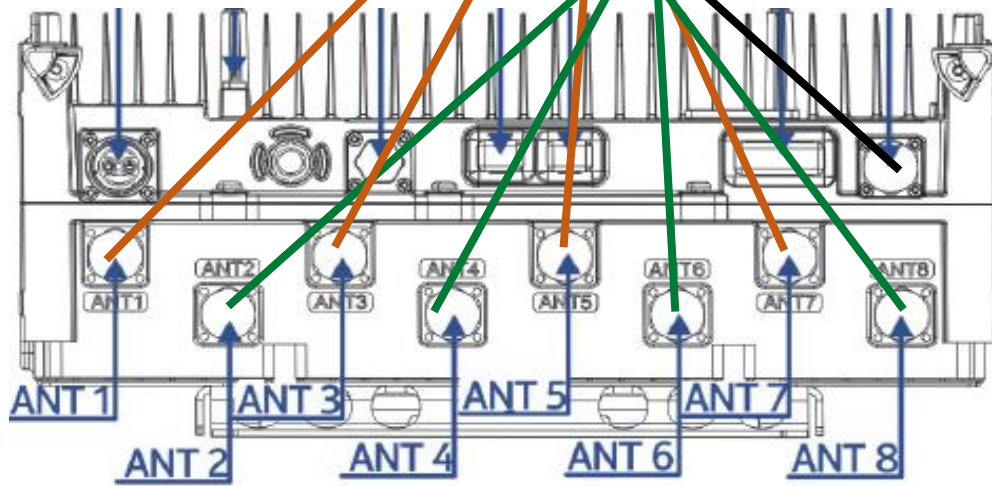
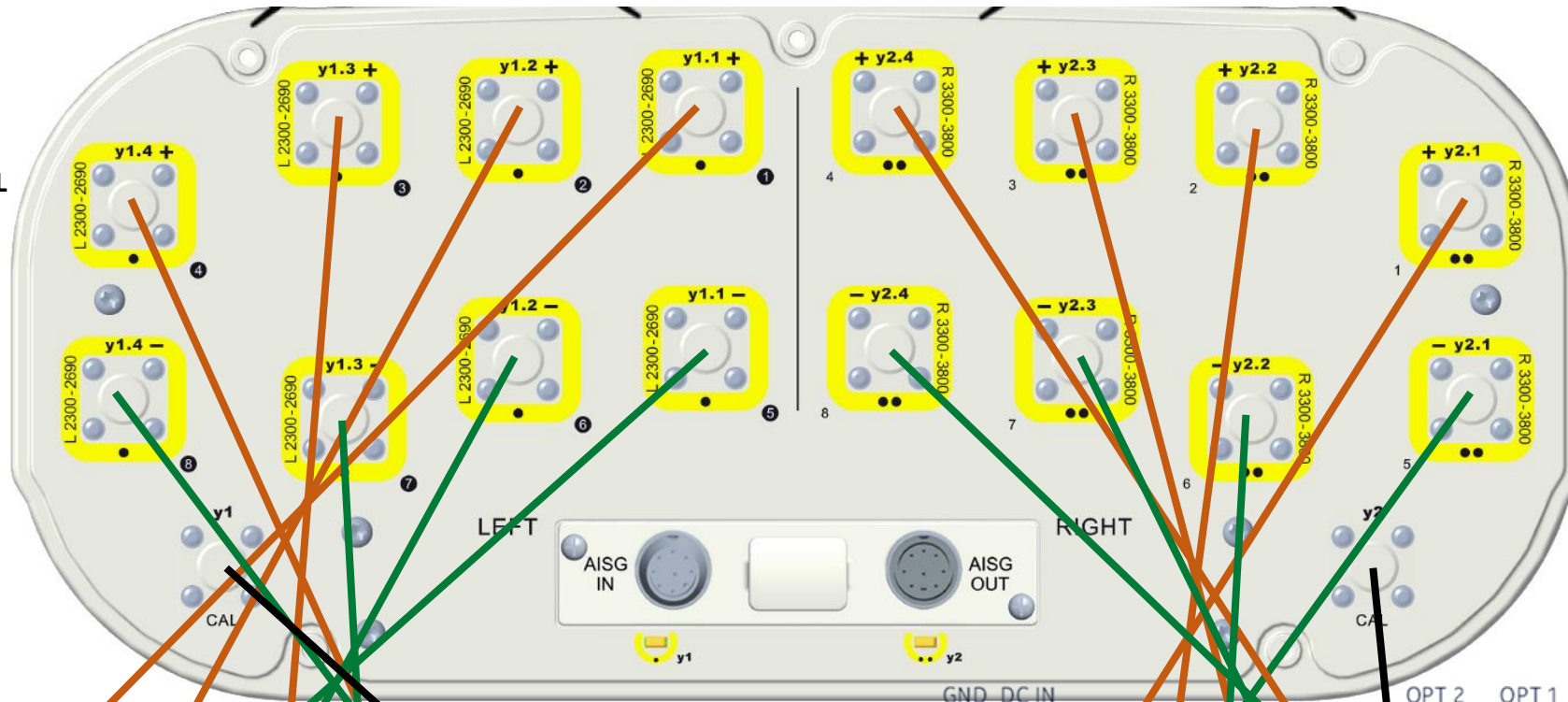
Huawei ATD4516R9 (SUA-6) Antenna Connection Details – TEF only NR3400

Nokia AZNC to ATD4516R9 “L 2300-2690” port connection Details:-

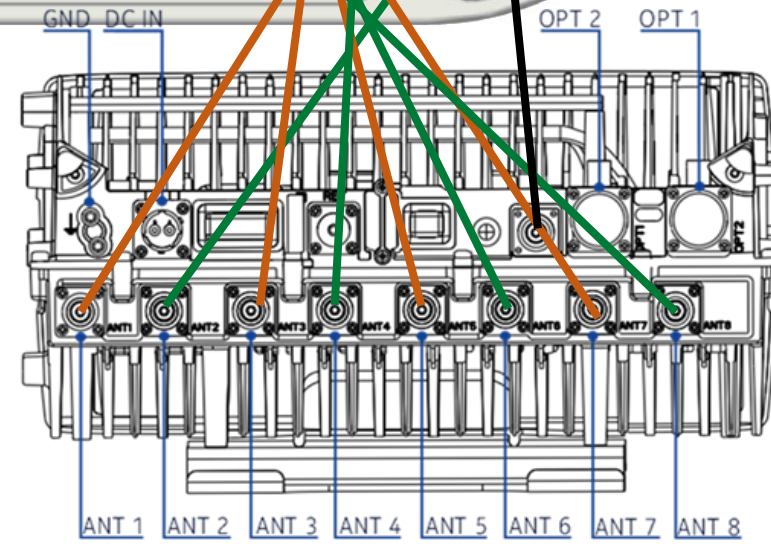
- ANT 1 to Y1.1+ Port 1
 - ANT 2 to Y1.1- Port 5
 - ANT 3 to Y1.2+ Port 2
 - ANT 4 to Y1.2- Port 6
 - ANT 5 to Y1.3+ Port 3
 - ANT 6 to Y1.3- Port 7
 - ANT 7 to Y1.4+ Port 4
 - ANT 8 to Y1.4- Port 8
- BF to Y1 CAL**

Nokia AZQL to ATD4516R9 R 3300 – 3800 port connection Details:-

- ANT 1 to Y2.1+ Port 1
 - ANT 2 to Y2.1- Port 5
 - ANT 3 to Y2.2+ Port 2
 - ANT 4 to Y2.2- Port 6
 - ANT 5 to Y2.3+ Port 3
 - ANT 6 to Y2.3- Port 7
 - ANT 7 to Y2.4+ Port 4
 - ANT 8 to Y2.4- Port 8
- BF to Y2 CAL**



TDD 2300 AZNC



NR 3400 AZQL

Nokia AZQL could be a Nokia AQZi for 5G MORAN including Vodafone in the future Q2 2020 TBC

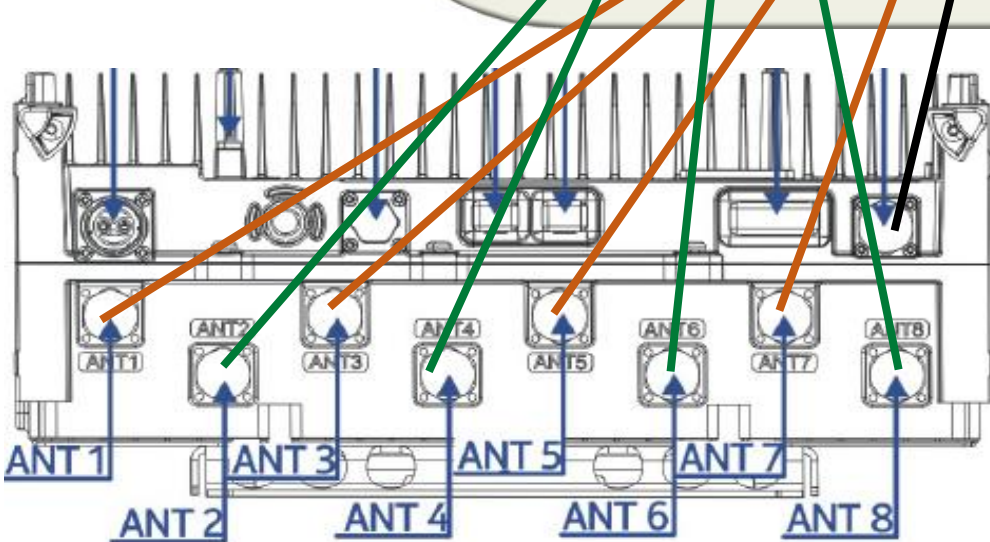
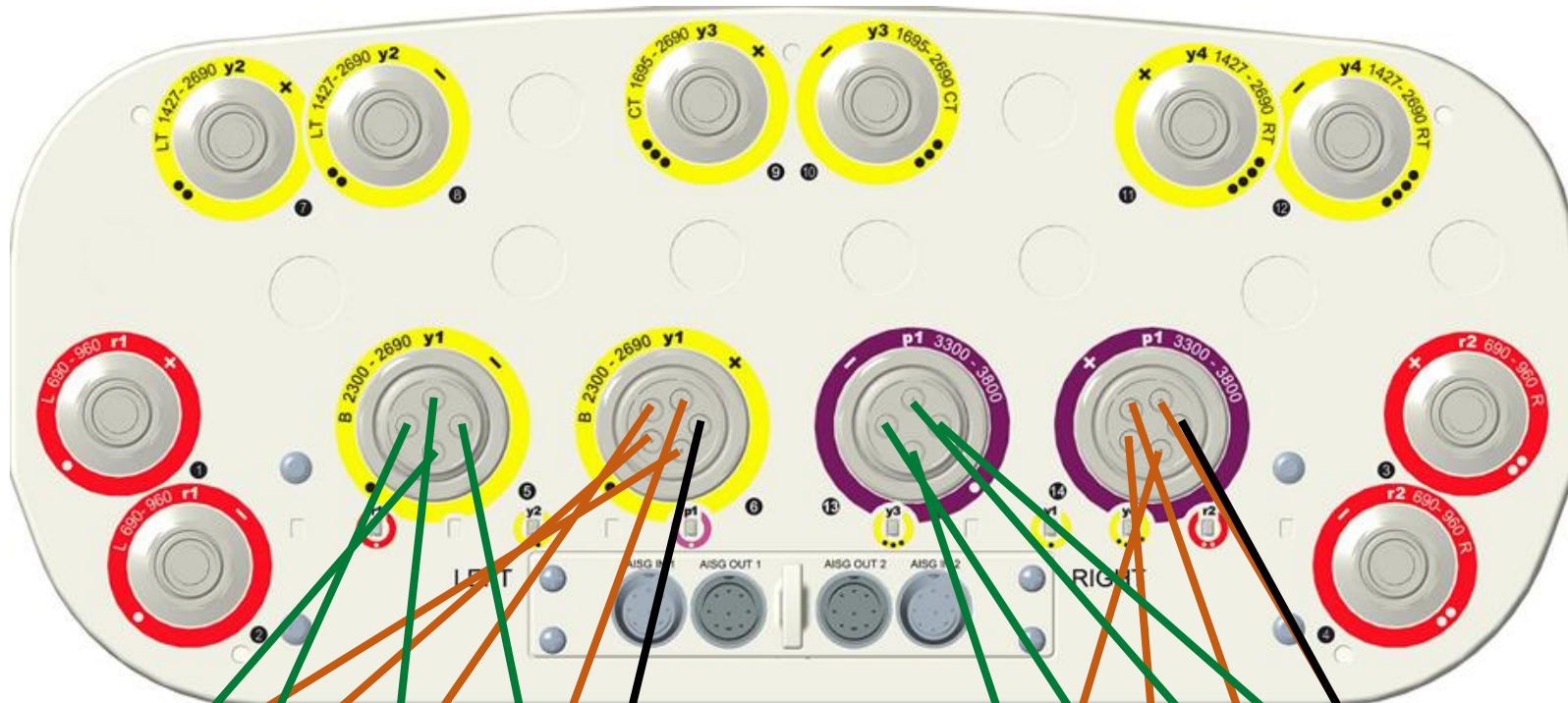
Huawei AHP4518R7 (SUA-7) Antenna Connection Details – TEF only NR3400

Nokia AZNC to AHP4518R7 connection Details:-

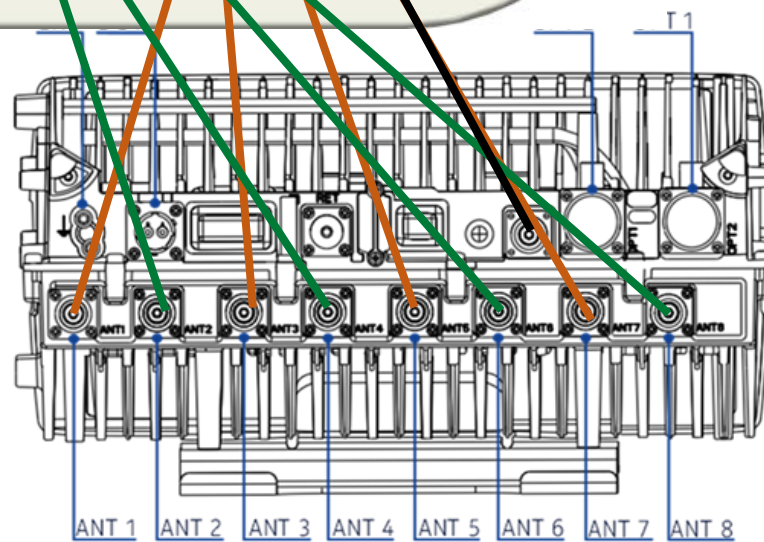
- ANT 1 to MQ5.1 Port 6
- ANT 2 to MQ4.1 Port 5
- ANT 3 to MQ5.2 Port 6
- ANT 4 to MQ4.2 Port 5
- ANT 5 to MQ5.3 Port 6
- ANT 6 to MQ4.3 Port 5
- ANT 7 to MQ5.4 Port 6
- ANT 8 to MQ4.4 Port 5
- BF to MQ5.5 CAL Port 6

Ericsson 8823 to AHP4518R7 connection Details:-

- ANT 1 to MQ5.1 Port 13 Cluster
- ANT 2 to MQ4.1 Port 14 Cluster
- ANT 3 to MQ5.2 Port 13 Cluster
- ANT 4 to MQ4.2 Port 14 Cluster
- ANT 5 to MQ5.3 Port 13 Cluster
- ANT 6 to MQ4.3 Port 14 Cluster
- ANT 7 to MQ5.4 Port 13 Cluster
- ANT 8 to MQ4.4 Port 14 Cluster
- BF to MQ5.5 CAL Port 13



TDD 2300 AZNC



NR 3400 AZQL

Nokia AZQL could be a Nokia AQZi for 5G MORAN including Vodafone in the future Q2 2020 TBC

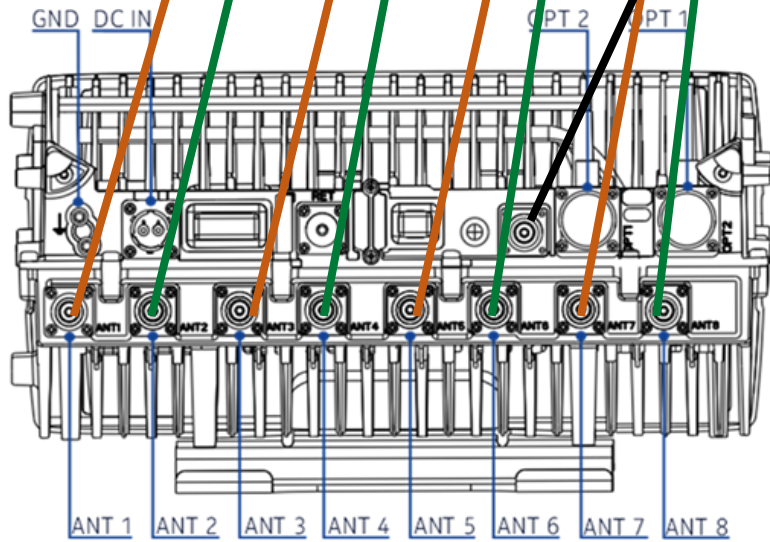
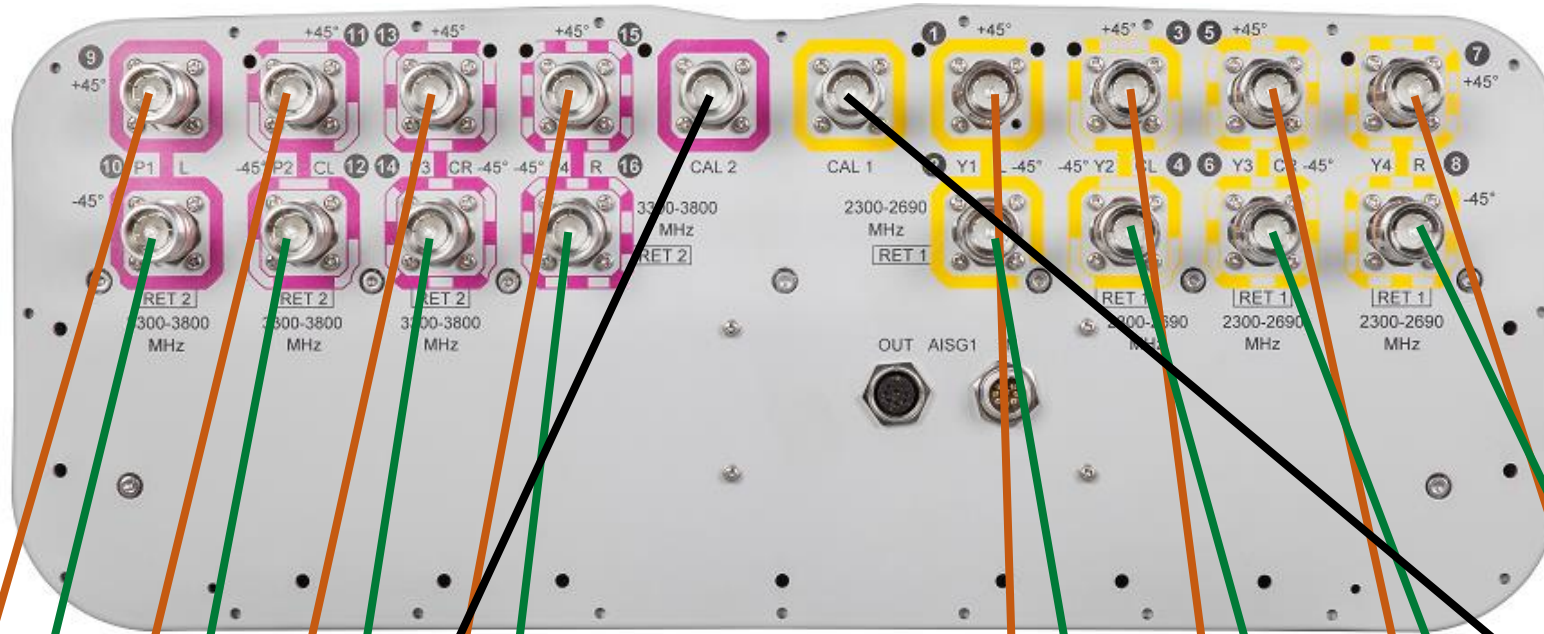
Commscope T4S4-90A-R2 (SUA-6) Antenna Connection Details

Nokia AZQL to T4S4-90A-R2 connection Details:-

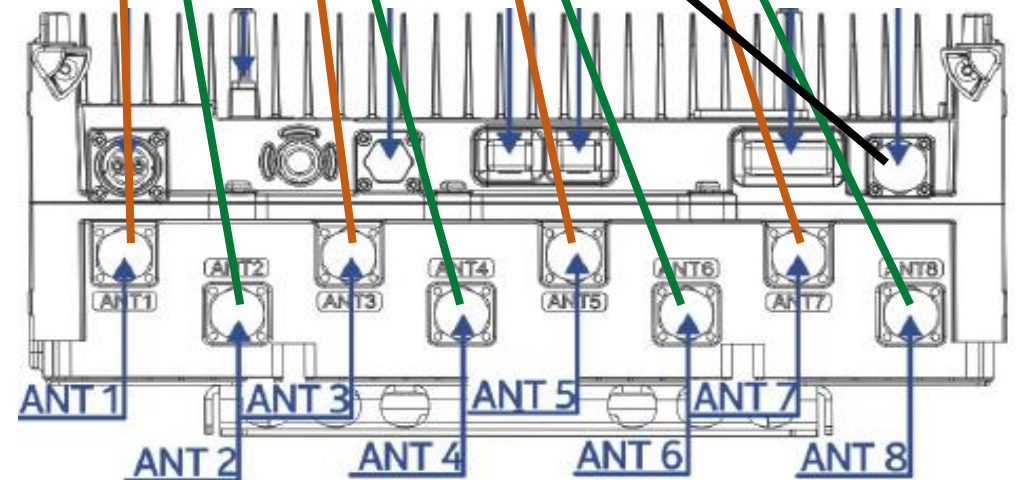
- ANT 1 to Port 9
- ANT 2 to Port 10
- ANT 3 to Port 11
- ANT 4 to Port 12
- ANT 5 to Port 13
- ANT 6 to Port 14
- ANT 7 to Port 15
- ANT 8 to Port 16
- BF to CAL 2

Nokia AZNC to T4S4-90A-R2 connection Details:-

- ANT 1 to Port 1
- ANT 2 to Port 2
- ANT 3 to Port 3
- ANT 4 to Port 4
- ANT 5 to Port 5
- ANT 6 to Port 6
- ANT 7 to Port 7
- ANT 8 to Port 8
- BF to CAL 1



NR 3400 AZQL



TDD 2300 AZNC

Nokia AZQL could be a Nokia AQZi for 5G MORAN including Vodafone in the future Q2 2020 TBC

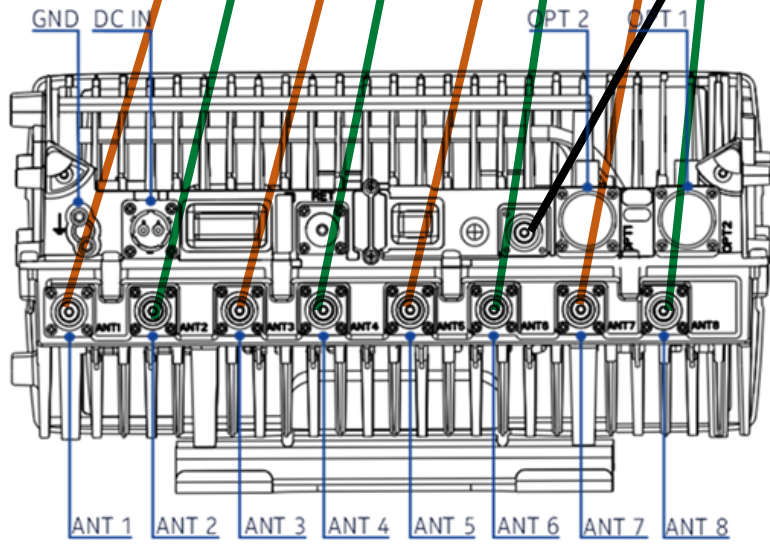
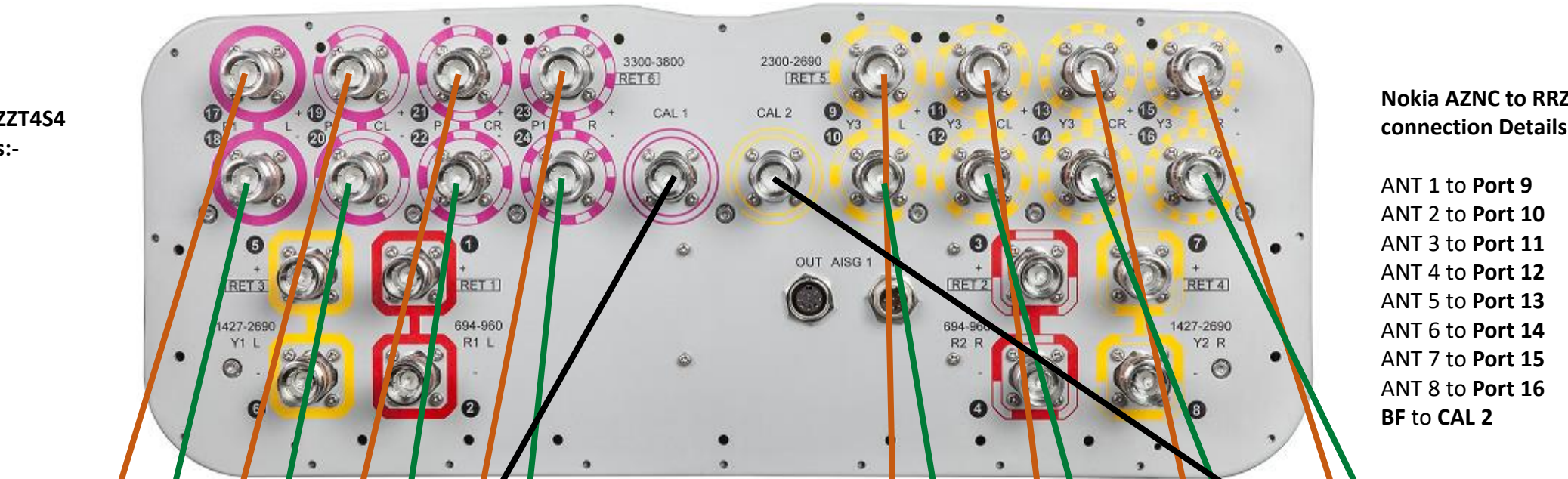
Commscope RRZT4S4 (SUA-7) Antenna Connection Details

Nokia AZQL to RRZT4S4 connection Details:-

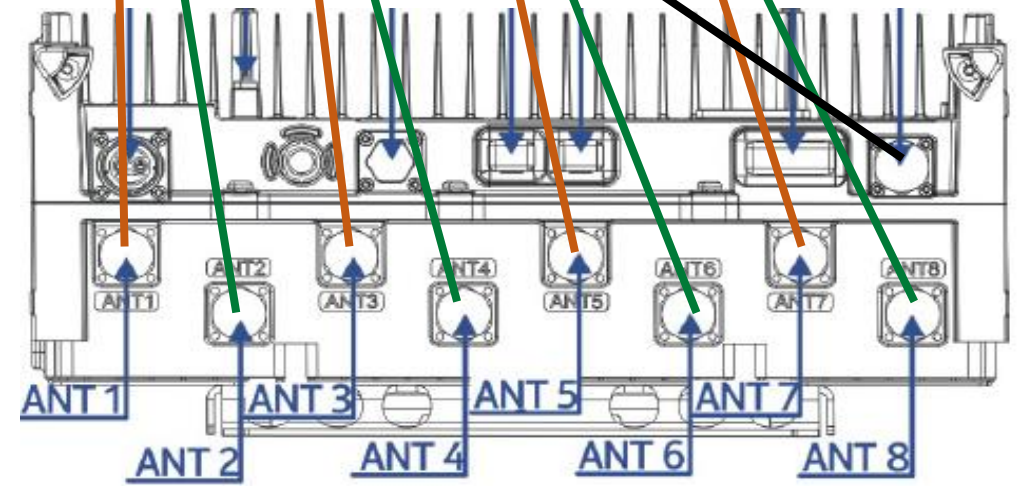
- ANT 1 to Port 17
- ANT 2 to Port 18
- ANT 3 to Port 19
- ANT 4 to Port 20
- ANT 5 to Port 21
- ANT 6 to Port 22
- ANT 7 to Port 23
- ANT 8 to Port 24
- BF to CAL 1

Nokia AZNC to RRZT4S4 connection Details:-

- ANT 1 to Port 9
- ANT 2 to Port 10
- ANT 3 to Port 11
- ANT 4 to Port 12
- ANT 5 to Port 13
- ANT 6 to Port 14
- ANT 7 to Port 15
- ANT 8 to Port 16
- BF to CAL 2



NR 3400 AZQL



TDD 2300 AZNC

Nokia AZQL could be a Nokia AQZi for 5G MORAN including Vodafone in the future Q2 2020 TBC

Huawei AHP4518R7 + ATD4516R9 Antenna Connection Details – TEF + VF NR 3400 8 way working MORAN (SUA-7 + SUA-6 antenna)

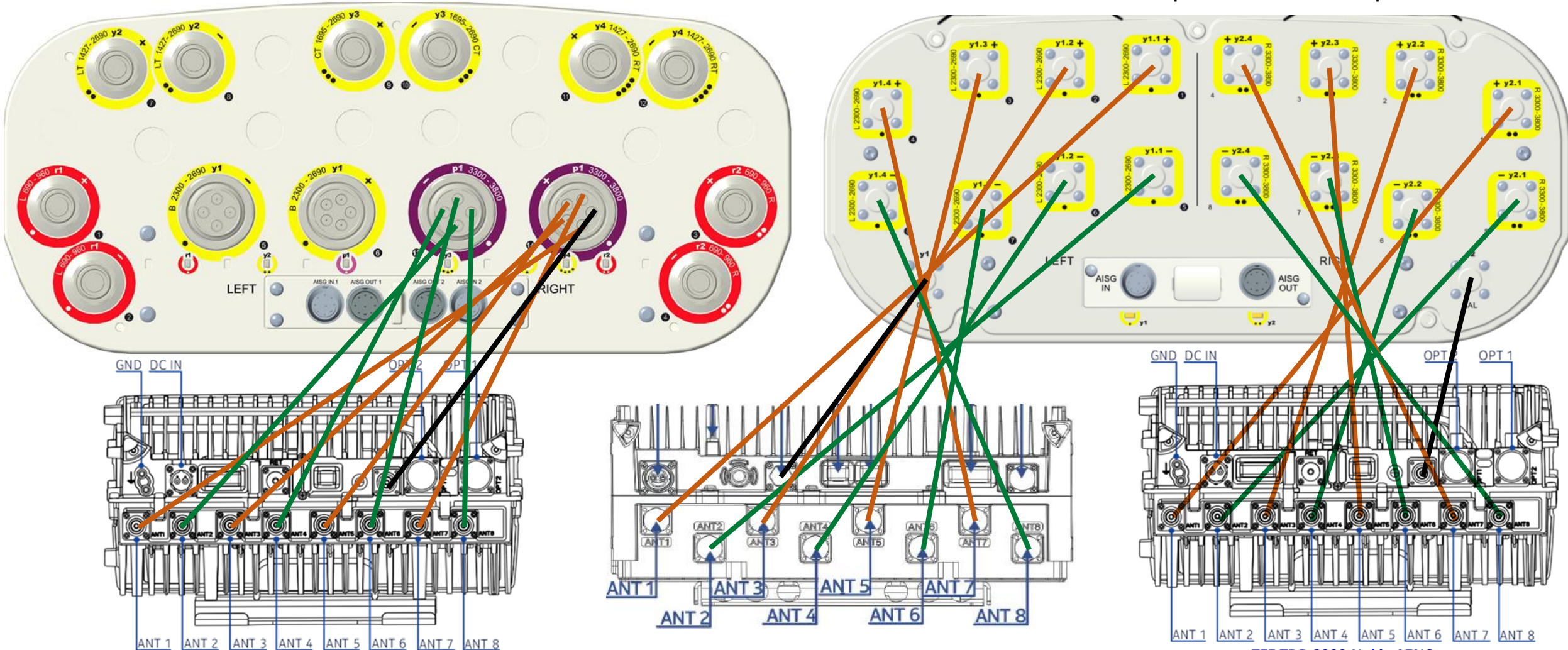
VF Nokia AZQG to AHP4518R7 NR3400 port connection details:-

Port 1 to MQ5.1 Port 13 Port 2 to MQ4.1 Port 14
 Port 3 to MQ5.2 Port 13 Port 4 to MQ4.2 Port 14
 Port 5 to MQ5.3 Port 13 Port 6 to MQ4.3 Port 14
 Port 7 to MQ5.4 Port 13 Port 8 to MQ4.4 Port 14
 CAL to MQ5.5 CAL Port 13

TEF Nokia AZQL to ATD4516R9 NR3400 port connection details:-

Port 1 to Y2.1+ Port 1 Port 2 to Y2.1- Port 5
 Port 3 to Y2.2+ Port 2 Port 4 to Y2.2- Port 6
 Port 5 to Y2.3+ Port 3 Port 6 to Y2.3- Port 7
 Port 7 to Y2.4+ Port 4 Port 8 to Y2.4- Port 8
 CAL to Y2 CAL

TEF Nokia AZNC TDD2300 port connection details as per slide 213



VF NR 3400 Nokia AZQG

TEF NR 3400 Nokia AZQL

TEF TDD 2300 Nokia AZNC

Commscope RRZZT4S4 + T4S4 Antenna Connection Details – TEF + VF NR 3400 8 way working MORAN (SUA-7 + SUA-6 antenna)

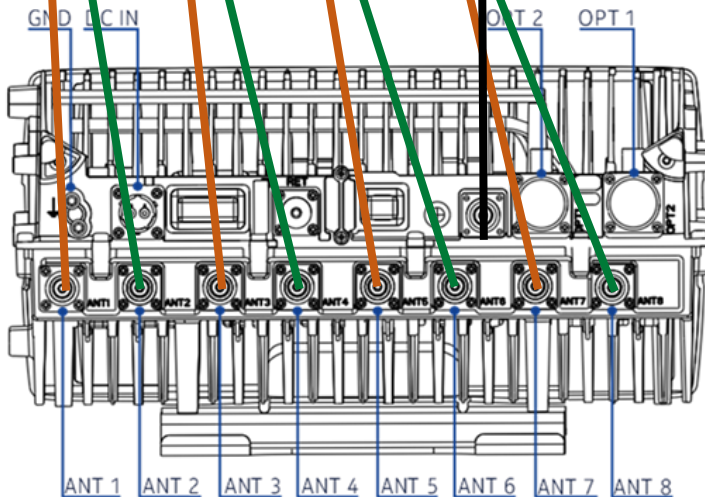
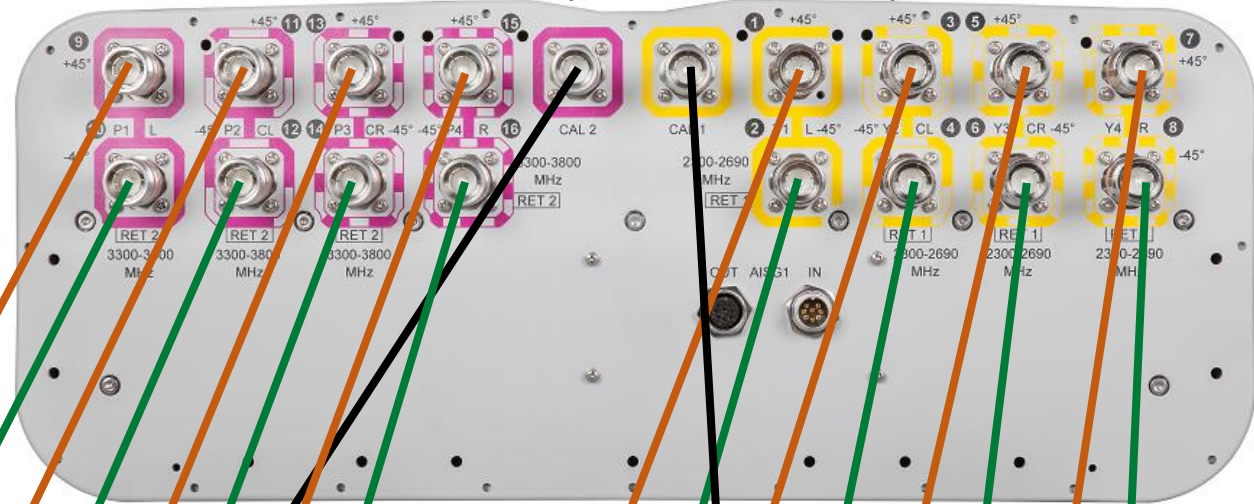
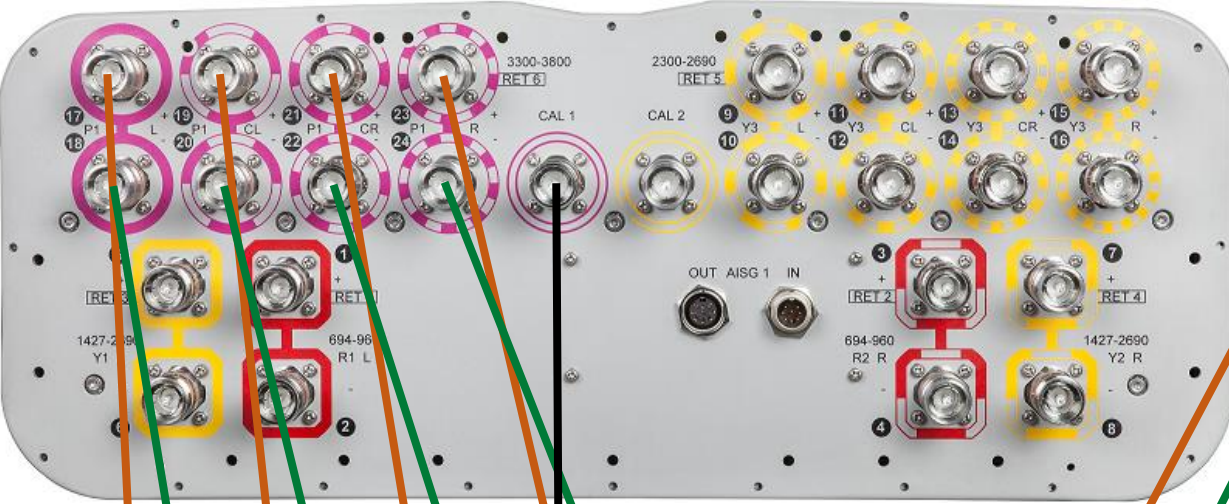
VF Ericsson 8823 to RRZZT4S4 NR3400 port connection details:-

- Port A to Port 17
- Port B to Port 18
- Port C to Port 19
- Port D to Port 20
- Port E to Port 21
- Port F to Port 22
- Port G to Port 23
- Port H to Port 24
- CAL to CAL 1

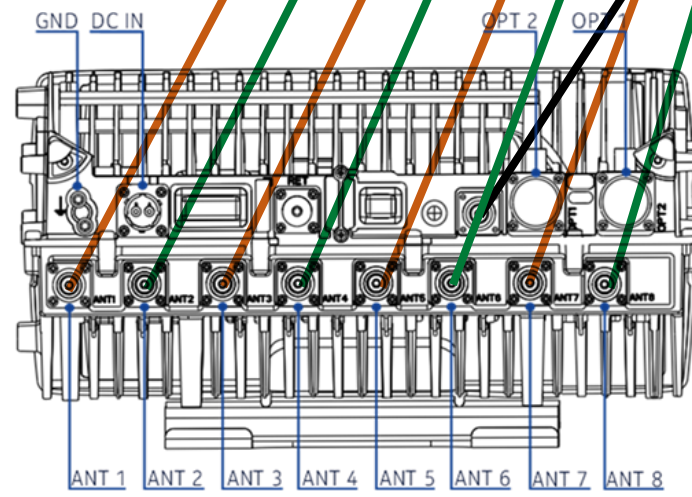
TEF Ericsson 8823 to T4S4 NR3400 port connection details:-

- Port A to Port 1
- Port B to Port 5
- Port C to Port 2
- Port D to Port 6
- Port E to Port 3
- Port F to Port 7
- Port G to Port 4
- Port H to Port 8
- CAL to CAL 2

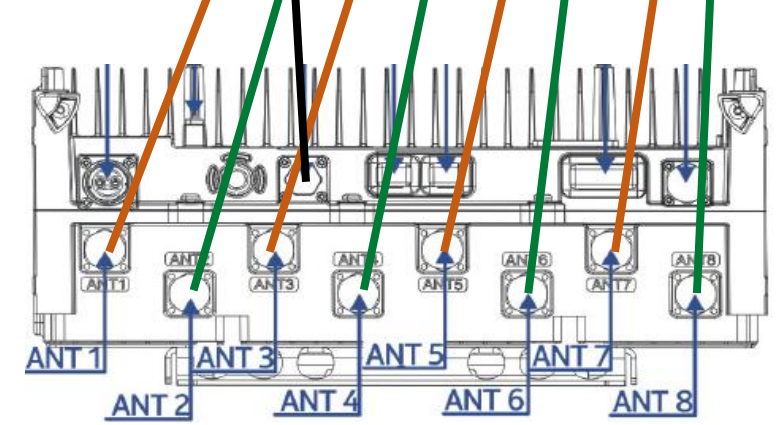
TEF Ericsson 8808 TDD2300 port connection details as per slide 10



VF NR 3400 Nokia AZQG

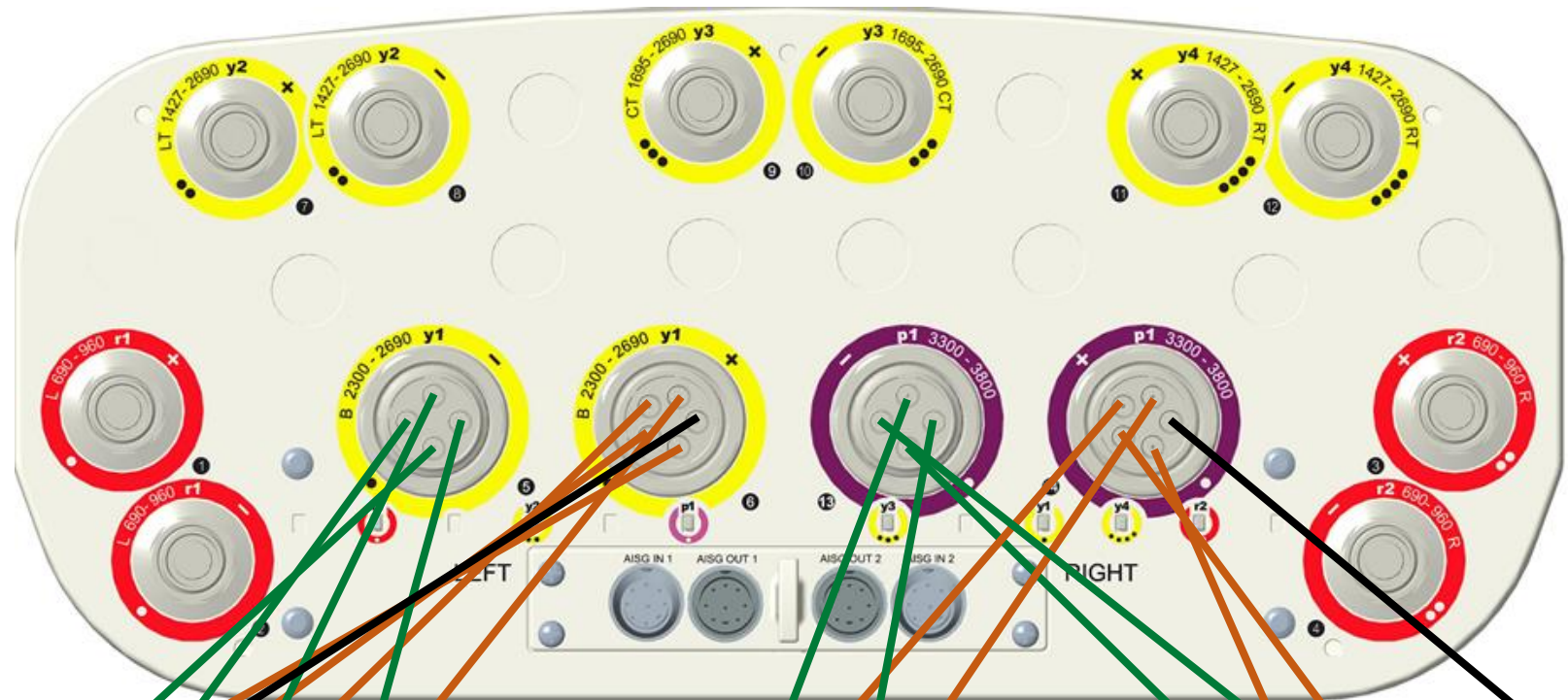


TEF NR 3400 Nokia AZQL



TEF TDD 2300 Nokia AZNC

Huawei AHP4518R7 (SUA-7) Antenna Connection Details – TEF + VF NR 3400 4 way working MORAN



TEF Nokia AZQL to AHP4518R7 connection Details:-

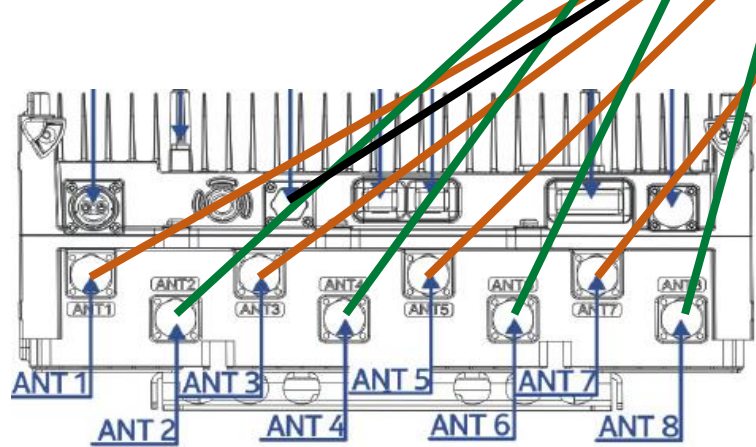
- Port 1 to MQ5.1 Port 13 Cluster
- Port 2 to MQ4.1 Port 14 Cluster
- Port 3 to MQ5.2 Port 13 Cluster
- Port 4 to MQ4.2 Port 14 Cluster
- CAL to MQ5.5 CAL Port 13

VF Nokia AZQG to AHP4518R7 connection Details:-

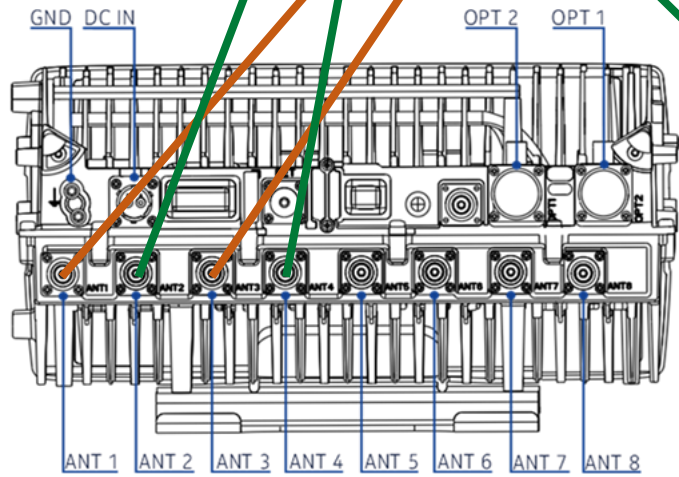
- Port 1 to MQ5.3 Port 13 Cluster
- Port 2 to MQ4.3 Port 14 Cluster
- Port 3 to MQ5.4 Port 13 Cluster
- Port 4 to MQ4.4 Port 14 Cluster

Nokia AZNC to AHP4518R7 connection Details:-

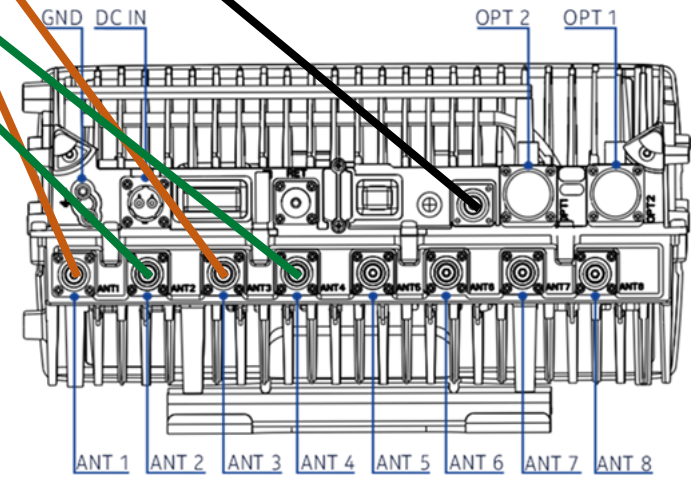
- Port 1 to MQ5.1 Port 6 Cluster
- Port 2 to MQ4.1 Port 5 Cluster
- Port 3 to MQ5.2 Port 6 Cluster
- Port 4 to MQ4.2 Port 5 Cluster
- Port 5 to MQ5.3 Port 6 Cluster
- Port 6 to MQ4.3 Port 5 Cluster
- Port 7 to MQ5.4 Port 6 Cluster
- Port 8 to MQ4.4 Port 5 Cluster
- CAL to MQ5.5 CAL Port 6 Cluster



TDD 2300 Nokia AZNC



VF NR 3400 Nokia AZQG



TEF NR 3400 Nokia AZQL

Commscope RRZT4S4 (SUA-7) Antenna Connection Details – TEF + VF NR 3400 4 way working MORAN

TEF Nokia AZQL to RRZT4S4 connection Details:-

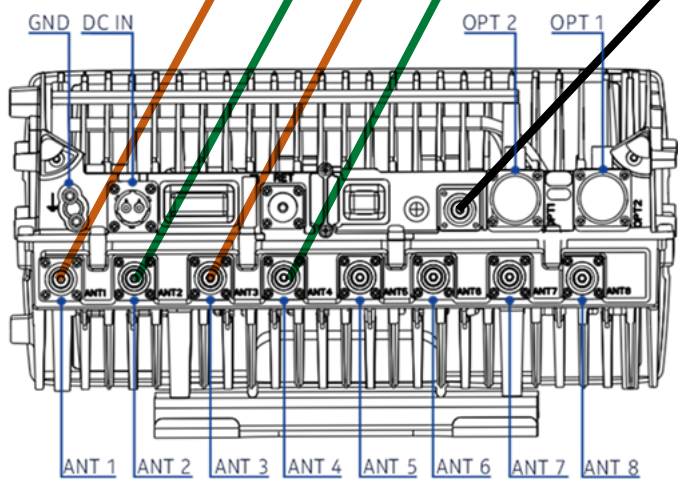
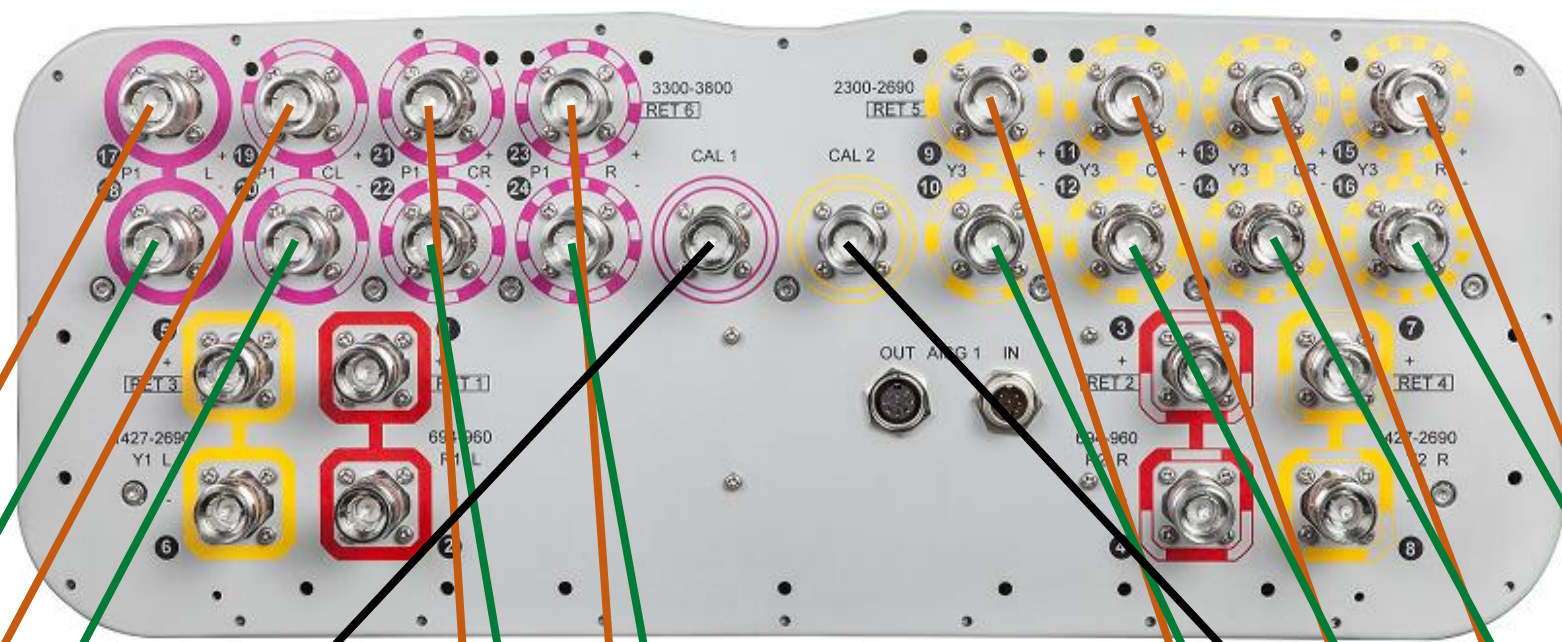
- Port 1 to Port 17
- Port 2 to Port 18
- Port 3 to Port 19
- Port 4 to Port 20
- CAL to CAL 1

VF Nokia AZQG to RRZT4S4 connection Details:-

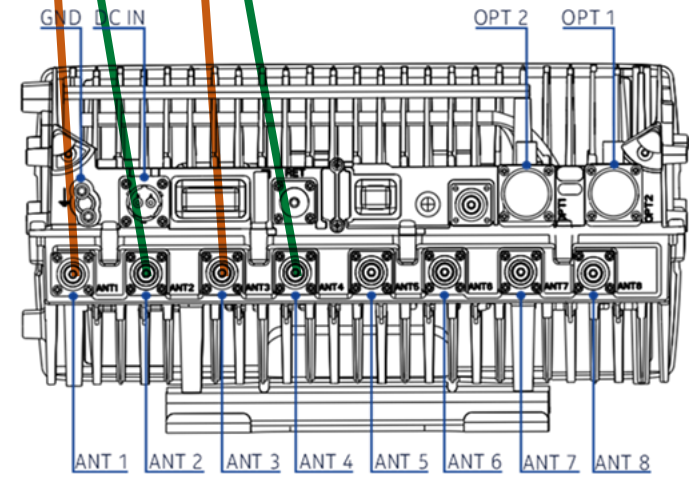
- Port 1 to Port 21
- Port 2 to Port 22
- Port 3 to Port 23
- Port 4 to Port 24

Nokia AZNC to RRZT4S4 connection Details:-

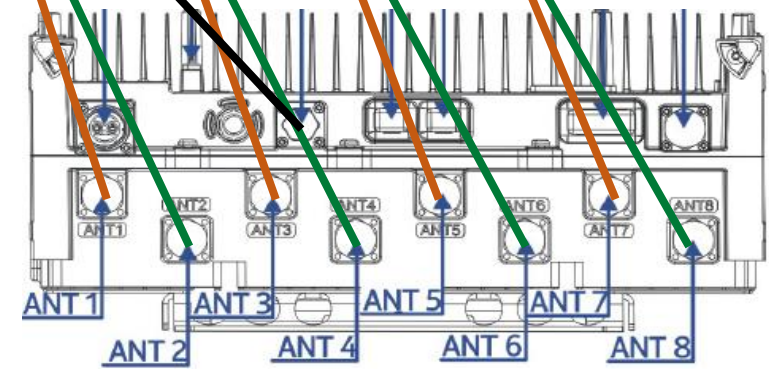
- Port 1 to Port 9
- Port 2 to Port 10
- Port 3 to Port 11
- Port 4 to Port 12
- Port 5 to Port 13
- Port 6 to Port 14
- Port 7 to Port 15
- Port 8 to Port 16
- CAL to CAL 2



TEF NR 3400 Nokia AZQL



VF NR 3400 Nokia AZQG



TDD 2300 Nokia AZNC