

**Test Report
for
Couplers and splitters**

Purpose

Test of couplers and splitters to Vodafone's requirements.

Table of contents

1	Test programme.....	1
2	Test results	2
2.1	6 dB coupler.....	2
2.2	10 dB coupler.....	2
2.3	20 dB coupler.....	3
2.4	30 dB coupler.....	3
2.5	2:1 Power splitter	4
2.6	3:1 Power splitter	4
2.7	4:1 Power splitter	5
3	Conclusion	5

Revision history

Rev.	Date/Sign	Description
1	2005-11-30/JT	1. edition

1 Test programme

Samples of couplers and splitters have been tested according to Vodafone's requirements.

All tests are carried out at 25°C at facility in Denmark.

The test results are summarized below.

2 Test results

2.1 6 dB coupler

Serial no. CP11100-1-01054832275

Parameter	Frequency range	Test results
Insertion loss	800-2700 MHz	1.3 dB
Coupling level	800-2700 MHz	6.2 to 7.2 dB
Isolation	800-2700 MHz	23 dB
Return loss, port A	800-2700 MHz	20 dB
Return loss, port B	800-2700 MHz	22 dB
Return loss, port C	800-2700 MHz	18 dB
Power handling	120W at 942 MHz for 30 min.	OK

2.2 10 dB coupler

Serial no. CP11101-1-01054832278

Parameter	Frequency range	Test results
Insertion loss	800-2700 MHz	0.7 dB
Coupling level	800-2700 MHz	9.5 to 10.5 dB
Isolation	800-2700 MHz	30 dB
Return loss, port A	800-2700 MHz	20 dB
Return loss, port B	800-2700 MHz	23 dB
Return loss, port C	800-2700 MHz	20 dB
Power handling	120W at 942 MHz for 30 min.	OK

2.3 20 dB coupler

Serial no. CP11102-1-01054832280

Parameter	Frequency range	Test results
Insertion loss	800-2700 MHz	0.2 dB
Coupling level	800-2700 MHz	19.5 to 20.5 dB
Isolation	800-2700 MHz	38 dB
Return loss, port A	800-2700 MHz	22 dB
Return loss, port B	800-2700 MHz	21 dB
Return loss, port C	800-2700 MHz	21 dB
Power handling	120W at 942 MHz for 30 min.	OK

2.4 30 dB coupler

Serial no. CP11103-1-01054832285

Parameter	Frequency range	Test results
Insertion loss	800-2700 MHz	0.1 dB
Coupling level	800-2700 MHz	30 to 32 dB
Isolation	800-2700 MHz	45 dB
Return loss, port A	800-2700 MHz	20 dB
Return loss, port B	800-2700 MHz	27 dB
Return loss, port C	800-2700 MHz	18 dB
Power handling	120W at 942 MHz for 30 min.	OK

2.5 2:1 Power splitter

Serial no. CP11104-1-01054832287

Parameter	Frequency range	Test results
Insertion loss, A to B	800-2700 MHz	3.2 dB
Insertion loss, A to C	800-2700 MHz	3.2 dB
Isolation, B to C	800-2700 MHz	21 dB
Return loss, port A	800-2700 MHz	18 dB
Return loss, port B	800-2700 MHz	18 dB
Return loss, port C	800-2700 MHz	19 dB
Power handling	120W at 942 MHz for 30 min.	OK

2.6 3:1 Power splitter

Serial no. CP11105-1-01054832292

Parameter	Frequency range	Test results
Insertion loss, A to B	800-2700 MHz	5.2 dB
Insertion loss, A to C	800-2700 MHz	4.8 dB
Insertion loss, A to D	800-2700 MHz	5.0 dB
Isolation, B to C	800-2700 MHz	22 dB
Isolation, B to D	800-2700 MHz	24 dB
Isolation, C to D	800-2700 MHz	23 dB
Return loss, port A	800-2700 MHz	17 dB
Return loss, port B	800-2700 MHz	18 dB
Return loss, port C	800-2700 MHz	19 dB
Return loss, port D	800-2700 MHz	19 dB
Power handling	120W at 942 MHz for 30 min.	OK

2.7 4:1 Power splitter

Serial no. CP11106-1-01054832297

Parameter	Frequency range	Test results
Insertion loss, A to B	800-2700 MHz	7.1 dB
Insertion loss, A to C	800-2700 MHz	7.3 dB
Insertion loss, A to D	800-2700 MHz	7.2 dB
Insertion loss, A to E	800-2700 MHz	6.5 dB
Isolation, B to C	800-2700 MHz	20 dB
Isolation, B to D	800-2700 MHz	20 dB
Isolation, B to E	800-2700 MHz	27 dB
Isolation, C to D	800-2700 MHz	21 dB
Isolation, C to E	800-2700 MHz	27 dB
Isolation, D to E	800-2700 MHz	19.2 dB
Return loss, port A	800-2700 MHz	20 dB, 800 to 2500 MHz 16 dB at 2700 MHz
Return loss, port B	800-2700 MHz	20 dB
Return loss, port C	800-2700 MHz	20 dB
Return loss, port D	800-2700 MHz	20 dB
Return loss, port E	800-2700 MHz	20 dB
Power handling	120W at 942 MHz for 30 min.	OK

3 Conclusion

The samples complies to the specification on the parameters tested, except for port A return loss for the 4:1 splitter at 2700 MHz..