

```

1  ! Created Wed Jul 17 14:11:34 2019
2  # hz S ri R 50
3  ! 1 Port Network Data from SP1.SP block
4  ! freq reS11 imS11
5  !
6      500000000      0.0238239244      -0.0708507646
7      510000000      0.0216719261      -0.0713560313
8      520000000      0.0192127003      -0.0711028071
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11     550000000      0.0156936069      -0.0733636822
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13     570000000      0.0148211454      -0.0750640924
14     580000000      0.0134953575      -0.0756939007
15     590000000      0.0118631678      -0.0758793961
16     600000000      0.00994477854      -0.0760112062
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20     640000000      0.00208371904      -0.0814939817
21     650000000      0.00203676055      -0.0830018085
22     660000000      0.00249152909      -0.0839249073
23     670000000      0.00278937664      -0.0844431157
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25     690000000      0.000358173765      -0.08444462801
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27     710000000      -0.00482669614      -0.0863437276
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32     760000000      -0.0131160592      -0.0982032771
33     770000000      -0.0127626939      -0.099676067
34     780000000      -0.0118656923      -0.101423361
35     790000000      -0.0114318786      -0.101231334
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40     840000000      -0.0186731092      -0.104654195
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42     860000000      -0.0223957433      -0.109159283
43     870000000      -0.0233012923      -0.111894786
44     880000000      -0.0234523859      -0.113560405
45     890000000      -0.0243850923      -0.114663097
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49     930000000      -0.0313297589      -0.118001358
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57     1.01e+09      -0.0411980616      -0.131679541
58     1.02e+09      -0.0426806318      -0.130860258
59     1.03e+09      -0.0447193078      -0.13006421
60     1.04e+09      -0.0472777786      -0.13028629
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63     1.07e+09      -0.0552930596      -0.134507275
64     1.08e+09      -0.0566639033      -0.1360915
65     1.09e+09      -0.0571274008      -0.138428982
66     1.1e+09      -0.0571031228      -0.139288046
67     1.11e+09      -0.0576539196      -0.139449891
68     1.12e+09      -0.0579882129      -0.138339482
69     1.13e+09      -0.0598509869      -0.137209889

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70	1.14e+09	-0.0613455771	-0.136971661
71	1.15e+09	-0.0637912697	-0.136094721
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73	1.17e+09	-0.0684314116	-0.137566812
74	1.18e+09	-0.0705906822	-0.139426977
75	1.19e+09	-0.0723372807	-0.141171077
76	1.2e+09	-0.073006944	-0.143053218
77	1.21e+09	-0.0736222508	-0.143868388
78	1.22e+09	-0.0740688913	-0.144396995
79	1.23e+09	-0.074465622	-0.143759545
80	1.24e+09	-0.0753143677	-0.143034454
81	1.25e+09	-0.0766387319	-0.142307601
82	1.26e+09	-0.07802252	-0.141856067
83	1.27e+09	-0.0799902712	-0.141617338
84	1.28e+09	-0.0808176396	-0.142154555
85	1.29e+09	-0.0823347256	-0.143085697
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87	1.31e+09	-0.0844009941	-0.144797435
88	1.32e+09	-0.0853495569	-0.145171613
89	1.33e+09	-0.0864053976	-0.144722637
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93	1.37e+09	-0.0915165817	-0.144028654
94	1.38e+09	-0.092596306	-0.144553609
95	1.39e+09	-0.0928483026	-0.145404458
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97	1.41e+09	-0.0939900923	-0.146609977
98	1.42e+09	-0.0938362937	-0.146272247
99	1.43e+09	-0.0939979342	-0.145825459
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101	1.45e+09	-0.0961440522	-0.142926126
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104	1.48e+09	-0.10175792	-0.140774273
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107	1.51e+09	-0.103898286	-0.143790333
108	1.52e+09	-0.102931416	-0.144761857
109	1.53e+09	-0.102148846	-0.144519885
110	1.54e+09	-0.101769123	-0.143561562
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112	1.56e+09	-0.103312503	-0.139448463
113	1.57e+09	-0.105346821	-0.137416494
114	1.58e+09	-0.107963163	-0.136039602
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118	1.62e+09	-0.114242526	-0.138606166
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122	1.66e+09	-0.110878502	-0.136383945
123	1.67e+09	-0.111273864	-0.133634812
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127	1.71e+09	-0.11950129	-0.127995157
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129	1.73e+09	-0.122690068	-0.130406472
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132	1.76e+09	-0.121338682	-0.130929667
133	1.77e+09	-0.120755088	-0.128985614
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185	2.29e+09	-0.196298142	-0.0407372282
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254	2.98e+09	-0.233769433	0.0769295922
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256	3e+09	-0.232669037	0.0763736468
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261	3.05e+09	-0.231336742	0.0872234657
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263	3.07e+09	-0.227724692	0.0887767268
264	3.08e+09	-0.225780207	0.0889661171
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280	3.24e+09	-0.214270396	0.0855941124
281	3.25e+09	-0.213359605	0.0856955301
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293	3.37e+09	-0.214607087	0.0771993064
294	3.38e+09	-0.215898504	0.0776636139
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311	3.55e+09	-0.197358578	0.111505953
312	3.56e+09	-0.19497781	0.114220087
313	3.57e+09	-0.194689753	0.117534685
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320	3.64e+09	-0.174955031	0.122003589
321	3.65e+09	-0.169657226	0.124754497
322	3.66e+09	-0.165710472	0.12875892
323	3.67e+09	-0.163032227	0.132279686
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325	3.69e+09	-0.160498592	0.137744473
326	3.7e+09	-0.159767407	0.139885768
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331	3.75e+09	-0.137496796	0.147756019
332	3.76e+09	-0.131610765	0.15055823
333	3.77e+09	-0.127463823	0.153869467
334	3.78e+09	-0.124301972	0.157117748
335	3.79e+09	-0.12295391	0.159164176
336	3.8e+09	-0.122397426	0.1601745
337	3.81e+09	-0.121227401	0.159640162
338	3.82e+09	-0.118960005	0.159412827
339	3.83e+09	-0.115960296	0.158784184
340	3.84e+09	-0.110355247	0.158914551
341	3.85e+09	-0.10371229	0.160249781
342	3.86e+09	-0.0958884269	0.162859859
343	3.87e+09	-0.089114816	0.16706731
344	3.88e+09	-0.0826936509	0.172435788
345	3.89e+09	-0.0787191787	0.178445992

346	3.9e+09	-0.0761980453	0.183471334
347	3.91e+09	-0.0755161492	0.187075757
348	3.92e+09	-0.0753331046	0.188969775
349	3.93e+09	-0.0743013487	0.190256318
350	3.94e+09	-0.0720750841	0.190102619
351	3.95e+09	-0.0688337914	0.189976642
352	3.96e+09	-0.0639603385	0.190304079
353	3.97e+09	-0.0576762602	0.191503175
354	3.98e+09	-0.0505492639	0.193909889
355	3.99e+09	-0.0441166631	0.197218131
356	4e+09	-0.0389996047	0.201114171
357	4.01e+09	-0.0358962418	0.205569244
358	4.02e+09	-0.0338167877	0.207988746
359	4.03e+09	-0.0324872586	0.210010603
360	4.04e+09	-0.0312951601	0.21117797
361	4.05e+09	-0.0288827292	0.211688776
362	4.06e+09	-0.0252709785	0.21177975
363	4.07e+09	-0.0196033877	0.212793213
364	4.08e+09	-0.012969016	0.215219534
365	4.09e+09	-0.00572551796	0.218401449
366	4.1e+09	0.000126307839	0.221942821
367	4.11e+09	0.00490784112	0.227957181
368	4.12e+09	0.00719075414	0.232163701
369	4.13e+09	0.00754766969	0.235209121
370	4.14e+09	0.00734999204	0.236756792
371	4.15e+09	0.00641669024	0.237456402
372	4.16e+09	0.00730569301	0.23682204
373	4.17e+09	0.00924971453	0.235413498
374	4.18e+09	0.0133743214	0.235724968
375	4.19e+09	0.0197785118	0.237152781
376	4.2e+09	0.027863833	0.239693577
377	4.21e+09	0.0359314647	0.243679282
378	4.22e+09	0.0429387524	0.248441617
379	4.23e+09	0.0481372619	0.253184248
380	4.24e+09	0.0514027488	0.257753727
381	4.25e+09	0.0522518771	0.260619139
382	4.26e+09	0.0520292439	0.262647451
383	4.27e+09	0.0513828943	0.262455384
384	4.28e+09	0.052502617	0.262642974
385	4.29e+09	0.0549242739	0.262537778
386	4.3e+09	0.0595856592	0.263537023
387	4.31e+09	0.0656451269	0.265892887
388	4.32e+09	0.0722710323	0.269559047
389	4.33e+09	0.0784689657	0.274011911
390	4.34e+09	0.0827509573	0.278279373
391	4.35e+09	0.0856242417	0.282674925
392	4.36e+09	0.0869788098	0.285282787
393	4.37e+09	0.0867647665	0.286345481
394	4.38e+09	0.0860326869	0.286264314
395	4.39e+09	0.0869626958	0.285657158
396	4.4e+09	0.0888918069	0.285139977
397	4.41e+09	0.0932625146	0.28439702
398	4.42e+09	0.10003268	0.286362335
399	4.43e+09	0.107321326	0.28880711
400	4.44e+09	0.1152124	0.292747246
401	4.45e+09	0.122278652	0.298217799
402	4.46e+09	0.126318899	0.303254506
403	4.47e+09	0.127656626	0.307374717
404	4.48e+09	0.127233813	0.310327354
405	4.49e+09	0.12552022	0.311622563
406	4.5e+09	0.123314198	0.31170448
407	4.51e+09	0.122304826	0.310966447
408	4.52e+09	0.123650707	0.310342591
409	4.53e+09	0.126726865	0.310937594
410	4.54e+09	0.132103341	0.312098733
411	4.55e+09	0.13801938	0.31438377
412	4.56e+09	0.144214066	0.317616708
413	4.57e+09	0.149368138	0.32067888
414	4.58e+09	0.153188012	0.323142749

415	4.59e+09	0.154659847	0.325177116
416	4.6e+09	0.154360648	0.32598557
417	4.61e+09	0.153450708	0.32547218
418	4.62e+09	0.152377856	0.324887405
419	4.63e+09	0.152745444	0.324498043
420	4.64e+09	0.155007144	0.325025372
421	4.65e+09	0.159306027	0.326954857
422	4.66e+09	0.165267931	0.330061582
423	4.67e+09	0.171497103	0.334189805
424	4.68e+09	0.177250511	0.337958615
425	4.69e+09	0.181529843	0.341506291
426	4.7e+09	0.183904219	0.344416545
427	4.71e+09	0.1838054	0.346458167
428	4.72e+09	0.182235362	0.346906111
429	4.73e+09	0.181086405	0.346676404
430	4.74e+09	0.180004036	0.345801924
431	4.75e+09	0.180408934	0.345081792
432	4.76e+09	0.182723296	0.34472932
433	4.77e+09	0.185680904	0.345840117
434	4.78e+09	0.189579965	0.347282187
435	4.79e+09	0.193523475	0.349228794
436	4.8e+09	0.196493761	0.351400513
437	4.81e+09	0.198357225	0.35214427
438	4.82e+09	0.198994872	0.352452679
439	4.83e+09	0.19819695	0.350910314
440	4.84e+09	0.197631754	0.348944694
441	4.85e+09	0.197383396	0.346449789
442	4.86e+09	0.198418046	0.344513381
443	4.87e+09	0.201235576	0.34324448
444	4.88e+09	0.205115487	0.343908912
445	4.89e+09	0.210258814	0.345761908
446	4.9e+09	0.21433176	0.347280725
447	4.91e+09	0.217195826	0.349632135
448	4.92e+09	0.218861906	0.351133642
449	4.93e+09	0.218872966	0.35148477
450	4.94e+09	0.217203293	0.350720401
451	4.95e+09	0.215764105	0.348956865
452	4.96e+09	0.214515971	0.346560253
453	4.97e+09	0.214503132	0.343662814
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455	4.99e+09	0.220259006	0.339721547
456	5e+09	0.224452864	0.339568187
457	5.01e+09	0.228642966	0.340034226
458	5.02e+09	0.232001201	0.341125662
459	5.03e+09	0.2342803	0.341848793
460	5.04e+09	0.235214514	0.341813297
461	5.05e+09	0.234550933	0.340481215
462	5.06e+09	0.233471323	0.338071142
463	5.07e+09	0.232848264	0.33436924
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465	5.09e+09	0.235302613	0.327559012
466	5.1e+09	0.238346007	0.324730213
467	5.11e+09	0.241749057	0.322898037
468	5.12e+09	0.246006883	0.322152443
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470	5.14e+09	0.251583626	0.320470886
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475	5.19e+09	0.255752882	0.307252927
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477	5.21e+09	0.261694938	0.300857836
478	5.22e+09	0.26612162	0.298441316
479	5.23e+09	0.270154349	0.297534244
480	5.24e+09	0.273330397	0.296253391
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482	5.26e+09	0.276540963	0.293733549
483	5.27e+09	0.276696437	0.291311427

484	5.28e+09	0.277281861	0.288123687
485	5.29e+09	0.277719842	0.284075668
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487	5.31e+09	0.281971505	0.275272375
488	5.32e+09	0.285724159	0.271860608
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498	5.42e+09	0.313832933	0.241182332
499	5.43e+09	0.319177763	0.236931053
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501	5.45e+09	0.329621517	0.232881914
502	5.46e+09	0.334239044	0.231917238
503	5.47e+09	0.337528633	0.23143664
504	5.48e+09	0.34019179	0.229907393
505	5.49e+09	0.341932113	0.228036889
506	5.5e+09	0.343475419	0.225137133
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508	5.52e+09	0.349488872	0.21783421
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512	5.56e+09	0.369641436	0.207281456
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515	5.59e+09	0.379574004	0.205069692
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525	5.69e+09	0.418478728	0.186671153
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527	5.71e+09	0.422686862	0.187242768
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532	5.76e+09	0.439697282	0.17786134
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535	5.79e+09	0.454602455	0.179280441
536	5.8e+09	0.457784982	0.181121838
537	5.81e+09	0.460180685	0.182458112
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539	5.83e+09	0.463596938	0.182042908
540	5.84e+09	0.465829484	0.179769848
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542	5.86e+09	0.474504332	0.175440854
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546	5.9e+09	0.497369864	0.176493574
547	5.91e+09	0.500780084	0.179181242
548	5.92e+09	0.502731112	0.182369336
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550	5.94e+09	0.504787177	0.184438644
551	5.95e+09	0.506810326	0.182480958
552	5.96e+09	0.509366537	0.180767598

553	5.97e+09	0.513521832	0.178442954
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555	5.99e+09	0.524317505	0.176269773
556	6e+09	0.529485292	0.177713866
557	6.01e+09	0.534419585	0.180807869
558	6.02e+09	0.537168968	0.184860049
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560	6.04e+09	0.538495888	0.189390902
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563	6.07e+09	0.540171964	0.182902342
564	6.08e+09	0.544532897	0.17785356
565	6.09e+09	0.550034228	0.17486663
566	6.1e+09	0.556300013	0.173330696
567	6.11e+09	0.562431285	0.173607128
568	6.12e+09	0.568657336	0.17740758
569	6.13e+09	0.572255609	0.182261324
570	6.14e+09	0.574464512	0.188226591
571	6.15e+09	0.573101455	0.194081784
572	6.16e+09	0.570625362	0.197410119
573	6.17e+09	0.567644211	0.198561097
574	6.18e+09	0.566014113	0.196654357
575	6.19e+09	0.566300712	0.193701161
576	6.2e+09	0.56783201	0.190874606
577	6.21e+09	0.571588881	0.187946899
578	6.22e+09	0.575069555	0.187421381
579	6.23e+09	0.578401157	0.189067844
580	6.24e+09	0.581154771	0.191912892
581	6.25e+09	0.581187763	0.19531164
582	6.26e+09	0.579811805	0.196148343
583	6.27e+09	0.577636504	0.195586005
584	6.28e+09	0.575526107	0.193676513
585	6.29e+09	0.574701272	0.188837511
586	6.3e+09	0.57612831	0.183756332
587	6.31e+09	0.579588136	0.180524702
588	6.32e+09	0.584656644	0.178458716
589	6.33e+09	0.590550844	0.179290337
590	6.34e+09	0.593138057	0.182760996
591	6.35e+09	0.595660085	0.188635392
592	6.36e+09	0.595180877	0.194900322
593	6.37e+09	0.592170499	0.19970865
594	6.38e+09	0.587362386	0.202511379
595	6.39e+09	0.582769551	0.199845984
596	6.4e+09	0.579173856	0.195381401
597	6.41e+09	0.578011142	0.186951013
598	6.42e+09	0.579315877	0.179493855
599	6.43e+09	0.581338187	0.172254846
600	6.44e+09	0.584288443	0.168468637
601	6.45e+09	0.587403418	0.168298821
602	6.46e+09	0.59001701	0.170535137
603	6.47e+09	0.590171711	0.174047071
604	6.48e+09	0.589496947	0.177541931
605	6.49e+09	0.58743535	0.178804783
606	6.5e+09	0.583974239	0.17713723
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