ANNEX 1 PROCESSING GAIN OF DIRECT SEQUENCE SPREAD SPECTRUM MEASUREMENT

1. LIMITS OF PROCESSING GAIN OF A DIRECT SEQUENCE SPREAD SPECTRUM MEASUREMENT

The limit of processing gain is 10dB

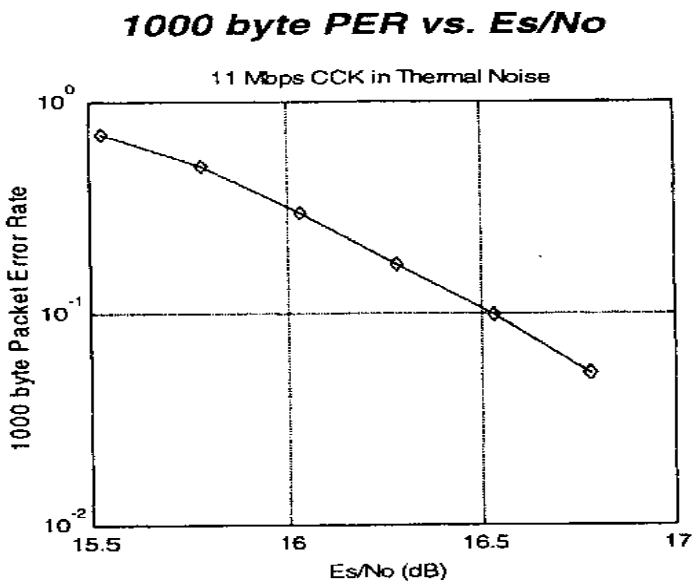
1.1 TEST INSTRUMENTS & SUPPORT UNIT

Description & Manufacturer	Model No.	Serial No.
Anritsu Spectrum Analyzer, 9kHz to 30GHz	MS2667C	M10281
Anritsu Signal Generator, 10kHz to 20GHz	68247B	984703
Hewlett Packard Power Meter,	HP438A	2743A04416
Hewlett Packard Power Sensor, -30 to 20dBm	8485A	2942A08387
Hewlett Packard Step Attenuator, 10dB steps	HP8496B	3247A18505
Mini-Circuits Power Splitter	ZN2PD-9G	NA
DELL Laptop Computer	Inspiron 5000e	NA
Campaq Laptop Computer	PPX	99125

1.2 METHOD OF MEASUREMENT

The processing gain may be measured using the CW jamming margin method. Section 4.7.4 shows the test configuration. The test consists of stepping a signal generator in 50 kHz increments across the passband of the system. At each point, the generator level required to produce the recommended Bit Error Rate (BER) is recorded. This level is jammer level. The output power of the transmitting unit is measured at the same point. The jammer to Signal (J/S) ratio is then calculated. Discard the worst 20% of the J/S data points. The lowest remaining J/S ratio is used when calculating the Process Gain.

The reference PER is specified as 8%. The corresponding Es/No (signal to noise ratio per symbol) is 16.4 dB. The curve is attached as below.



This value and the measured J/S ratio are used in the following equation to calculate the Process Gain (Gp) of the system.

$$Gp = (S/N)_o + Mj + Lsys$$

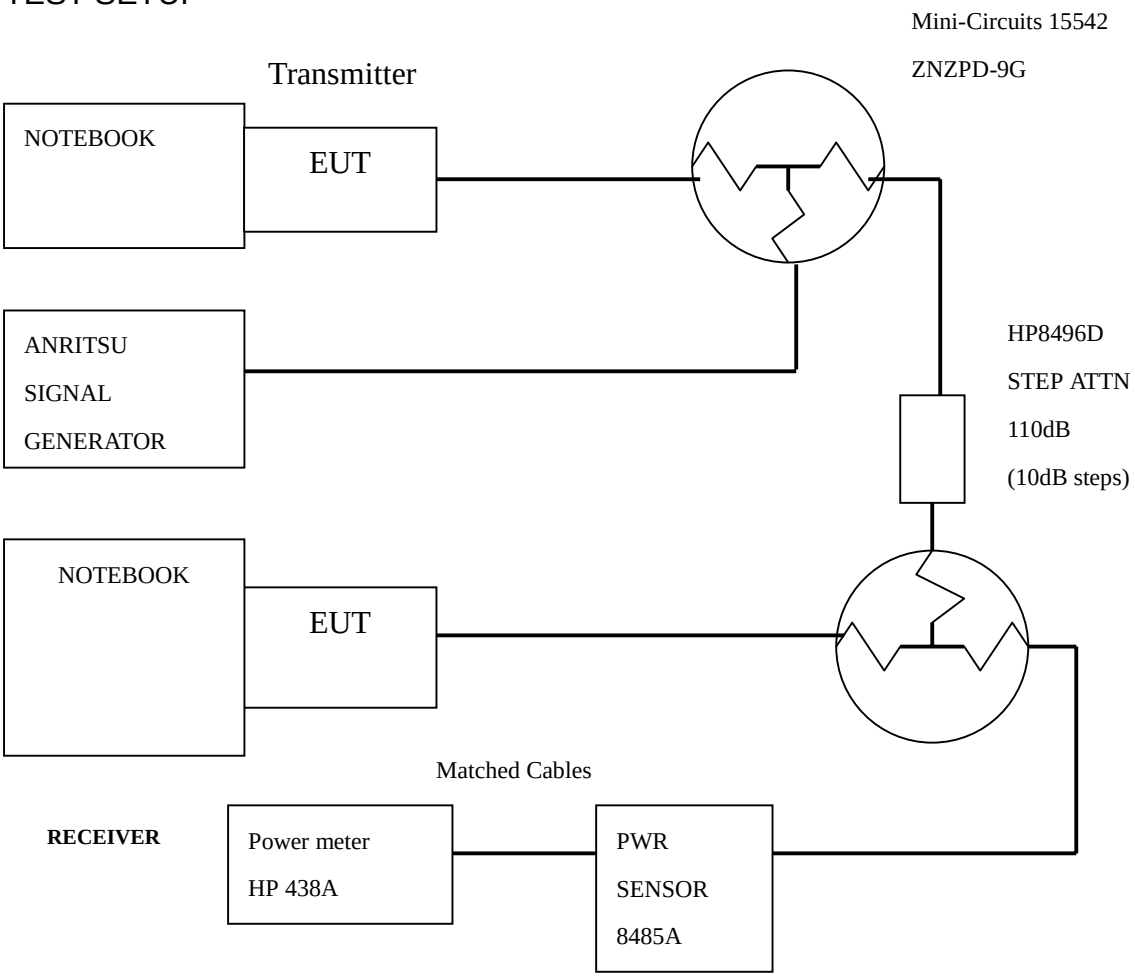
Where:

$(S/N)_o$: Signal to noise ratio for the chosen BER.

Mj : Maximum jammer to Signal Ratio recorded at the detected BER.

Lsys : System losses . For the purpose of this processing gain calculation, we assume Lsys at its minimum value of 2 dB.

TEST SETUP



1.3 TEST PROCEDURES

Obtain the simplex link shown. Perform all independent instrumentation calibrations prior to this procedure. Set operating power levels using fixed and variable attenuators in system to meet the following objectives:

Signal Power at receiver approximately –55dBm (above thermal sensitivity such that thermal noise does not cause bit errors.

Signal Power at power meter between –20 and –30dBm for optimal linearity.

Use spectrum analyzer to monitor test.

Ensure that CW Jammer generator RF output is disabled and measure the power at the power meter port using the power meter. This is the relative signal power, Sr.

Disable Transmitter, and set CW Jammer generator RF output frequency equal to the carrier frequency and enable generator output. Set reference CW Jammer power level at power meter port 8.4dB below Sr (minimum J/S, or 10dB processing gain reference level). Note the power level setting on the generator, this is the reference CW Jammer power setting, Jr.

Disable CW Jammer, re-establish link. PER test should be operating essentially error -free.

Enable CW Jammer at the reference power level and verify that the PER test indicates a PER of less than 8%.

Alternatively, adjust the CW Jammer level to that which causes 8% PER and verify that the S/J is less than 8.4dB.

Repeat step 7 for uniform steps in frequency increments of 50 kHz across the receiver passband with the CW Jammer. In this case the receiver passband is +/- 8.5 MHz.

The numerical data associated with the following radio channel is tabulated and presented for Channel 1,6, and 11.

Note: Since the jamming signal will be blocked by the IF filter if the jamming frequency is far form the center of the carrier frequency. So, only those frequencies around carrier frequency are shown here.

1.4 EUT OPERATING CONDITION

The software provided by client to set the EUT to transmit at lowest, middle and highest channel.

1.5 TEST RESULTS

EUT	Wireless USB Adapter	**Model**	WN3501A
Environmental Conditions	20℃, 70%RH	**Tested By**	Steven Lu

Although the theoretical processing gain is lower than 10 dB, but the CCK coding provides an extra coding gain of 2.2dB.

11Mbps CHANNEL 1 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.408	13.3	16.4	-5.1	2
2.40805	13.2	16.4	-5.2	2
2.4081	13.4	16.4	-5	2
2.40815	13.6	16.4	-4.8	2
2.4082	13.6	16.4	-4.8	2
2.40825	13	16.4	-5.4	2
2.4083	13	16.4	-5.4	2
2.40835	13.2	16.4	-5.2	2
2.4084	12.9	16.4	-5.5	2
2.40845	12.6	16.4	-5.8	2
2.4085	12.6	16.4	-5.8	2
2.40855	12.4	16.4	-6	2
2.4086	12.6	16.4	-5.8	2
2.40865	12.7	16.4	-5.7	2
2.4087	12.7	16.4	-5.7	2
2.40875	12.4	16.4	-6	2
2.4088	12.5	16.4	-5.9	2
2.40885	12.7	16.4	-5.6	2
2.4089	12.4	16.4	-6	2
2.40895	12.1	16.4	-6.3	2

11Mbps CHANNEL 1 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.409	11.9	16.4	-6.5	2
2.4095	11.4	16.4	-7	2
2.40955	11.7	16.4	-6.7	2
2.4096	11.8	16.4	-6.6	2
2.40965	11.9	16.4	-6.5	2
2.4097	11.4	16.4	-7	2
2.40975	11.6	16.4	-6.8	2
2.4098	11.6	16.4	-6.8	2
2.40985	11.5	16.4	-6.9	2
2.4099	11.2	16.4	-7.2	2
2.40995	11.2	16.4	-7.2	2
2.41	11	16.4	-7.4	2
2.41005	11.3	16.4	-7.1	2
2.4101	11.4	16.4	-7	2
2.41015	11.6	16.4	-6.8	2
2.4102	11.3	16.4	-7.1	2
2.41025	11.6	16.4	-6.8	2
2.4103	11.8	16.4	-6.6	2
2.41035	11.8	16.4	-6.6	2
2.4104	11.5	16.4	-6.9	2
2.41045	11.5	16.4	-6.9	2
2.4105	11.4	16.4	-7	2
2.41055	11.5	16.4	-6.9	2
2.4106	11.6	16.4	-6.8	2
2.41065	11.8	16.4	-6.6	2
2.4107	11.4	16.4	-7	2
2.41075	11.6	16.4	-6.8	2
2.4108	11.9	16.4	-6.5	2
2.41085	11.9	16.4	-6.5	2
2.4109	11.8	16.4	-6.6	2
2.41095	11.8	16.4	-6.6	2
2.411	11.7	16.4	-6.7	2
2.41105	11.7	16.4	-6.7	2
2.4111	11.9	16.4	-6.5	2
2.41115	12.1	16.4	-6.3	2

11Mbps CHANNEL 1 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4112	11.6	16.4	-6.8	2
2.41125	11.8	16.4	-6.6	2
2.4113	12	16.4	-6.4	2
2.41135	11.8	16.4	-6.6	2
2.4114	11.6	16.4	-6.8	2
2.41145	11.6	16.4	-6.8	2
2.4115	11.5	16.4	-6.9	2
2.41155	11.7	16.4	-6.7	2
2.4116	12	16.4	-6.4	2
2.41165	12.1	16.4	-6.3	2
2.4117	11.6	16.4	-6.8	2
2.41175	11.7	16.4	-6.7	2
2.4118	11.7	16.4	-6.7	2
2.41185	11.5	16.4	-6.9	2
2.4119	11.2	16.4	-7.2	2
2.41195	11	16.4	-7.4	2
2.412	11	16.4	-7.4	2
2.41205	11.2	16.4	-7.2	2
2.4121	11.5	16.4	-6.9	2
2.41215	11.9	16.4	-6.5	2
2.4122	11.6	16.4	-6.8	2
2.41225	11.9	16.4	-6.5	2
2.4123	12.2	16.4	-6.2	2
2.41235	12.1	16.4	-6.3	2
2.4124	11.9	16.4	-6.5	2
2.41245	11.8	16.4	-6.6	2
2.4125	11.7	16.4	-6.7	2
2.41255	11.9	16.4	-6.5	2
2.4126	12	16.4	-6.4	2
2.41265	12.1	16.4	-6.3	2
2.4127	11.8	16.4	-6.6	2
2.41275	11.9	16.4	-6.5	2
2.4128	12.3	16.4	-6.1	2
2.41285	12.2	16.4	-6.2	2
2.4129	12	16.4	-6.4	2
2.41295	12.1	16.4	-6.3	2

11Mbps CHANNEL 1 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.413	11.9	16.4	-6.5	2
2.41305	12.1	16.4	-6.3	2
2.4131	12.2	16.4	-6.2	2
2.41315	12.2	16.4	-6.2	2
2.4132	11.7	16.4	-6.7	2
2.41325	12	16.4	-6.4	2
2.4133	12.1	16.4	-6.3	2
2.41335	12	16.4	-6.4	2
2.4134	11.8	16.4	-6.6	2
2.41345	11.8	16.4	-6.6	2
2.4135	11.7	16.4	-6.7	2
2.41355	12	16.4	-6.5	2
2.4136	12	16.4	-6.3	2
2.41365	12.2	16.4	-6.2	2
2.4137	11.8	16.4	-6.6	2
2.41375	12	16.4	-6.4	2
2.4138	12.1	16.4	-6.3	2
2.41385	11.9	16.4	-6.5	2
2.4139	11.6	16.4	-6.8	2
2.41395	11.5	16.4	-6.9	2
2.414	11.3	16.4	-7.1	2
2.41405	11.5	16.4	-6.9	2
2.4141	11.6	16.4	-6.8	2
2.41415	11.7	16.4	-6.7	2
2.4142	11.4	16.4	-7	2
2.41425	11.7	16.4	-6.7	2
2.4143	12	16.4	-6.4	2
2.41435	11.9	16.4	-6.5	2
2.4144	11.7	16.4	-6.7	2
2.41445	11.7	16.4	-6.7	2
2.4145	11.5	16.4	-6.9	2
2.41455	11.6	16.4	-6.8	2
2.4146	11.7	16.4	-6.7	2
2.41465	11.8	16.4	-6.6	2
2.4147	11.4	16.4	-7	2
2.41475	11.7	16.4	-6.7	2

11Mbps CHANNEL 1 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4148	12	16.4	-6.4	2
2.41485	12	16.4	-6.4	2
2.4149	11.8	16.4	-6.6	2
2.41495	12	16.4	-6.4	2
2.415	12	16.4	-6.4	2
2.41505	12.3	16.4	-6.1	2
2.4151	12.5	16.4	-5.9	2
2.41515	12.6	16.4	-5.8	2
2.4152	12.2	16.4	-6.2	2
2.41525	12.4	16.4	-6	2
2.4153	12.6	16.4	-5.8	2
2.41535	12.5	16.4	-5.9	2
2.4154	12.3	16.4	-6.1	2
2.41545	12.3	16.4	-6.1	2
2.4155	12.2	16.4	-6.2	2
2.41555	12.6	16.4	-5.8	2
2.4156	12.8	16.4	-5.6	2
2.41565	13	16.4	-5.4	2
2.4157	12.7	16.4	-5.7	2
2.41575	13	16.4	-5.4	2
2.4158	13.3	16.4	-5.1	2
2.41585	13.2	16.4	-5.2	2
2.4159	13	16.4	-5.4	2
2.41595	13	16.4	-5.4	2
2.416	12.9	16.4	-5.5	2
2.41605	13.1	16.4	-5.3	2
2.4161	13.3	16.4	-5.1	2
2.41615	13.4	16.4	-5	2
2.4162	13.1	16.4	-5.3	2
2.41625	13.4	16.4	-5	2
2.4163	13.7	16.4	-4.7	2
2.41635	13.8	16.4	-4.6	2
2.4164	13.8	16.4	-4.6	2
2.41645	13.8	16.4	-4.6	2
2.4165	13.7	16.4	-4.7	2
2.41655	14	16.4	-4.4	2

11Mbps CHANNEL 1 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4166	14.1	16.4	-4.3	2
2.41665	14.2	16.4	-4.2	2
2.4167	13.8	16.4	-4.6	2
2.41675	14.1	16.4	-4.3	2
2.4168	14.3	16.4	-4.1	2
2.41685	14.3	16.4	-4.1	2
2.4169	14.2	16.4	-4.2	2
2.41695	14.4	16.4	-4	2
2.417	14.3	16.4	-4.1	2
2.41705	14.7	16.4	-3.7	2
2.4171	15	16.4	-3.4	2
2.41715	15.3	16.4	-3.1	2
2.4172	15	16.4	-3.4	2
2.41725	15.3	16.4	-3.1	2
2.4173	15.5	16.4	-2.9	2
2.41735	15.4	16.4	-3	2
2.4174	15.3	16.4	-3.1	2
2.41745	15.4	16.4	-3	2
2.4175	15.5	16.4	-2.9	2
2.41755	15.8	16.4	-2.6	2
2.4176	16.1	16.4	-2.3	2
2.41765	16.4	16.4	-2	2
2.4177	16.2	16.4	-2.2	2
2.41775	16.75	16.4	-1.7	2
2.4178	17.1	16.4	-1.3	2
2.41785	17.1	16.4	-1.3	2
2.4179	17	16.4	-1.4	2
2.41795	17	16.4	-1.4	2
2.418	17	16.4	-1.4	2

11Mbps CHANNEL 6 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.432	14.6	16.4	-3.8	2
2.43205	14.3	16.4	-4.1	2
2.4321	14.4	16.4	-4	2
2.43215	14.4	16.4	-4	2
2.4322	14.5	16.4	-3.9	2
2.43225	14	16.4	-4.4	2
2.4323	14.1	16.4	-4.3	2
2.43235	14.3	16.4	-4.1	2
2.4324	14.2	16.4	-4.2	2
2.43245	13.9	16.4	-4.5	2
2.4325	13.9	16.4	-4.5	2
2.43255	13.7	16.4	-4.7	2
2.4326	13.7	16.4	-4.7	2
2.43265	13.7	16.4	-4.7	2
2.4327	13.6	16.4	-4.8	2
2.43275	13.1	16.4	-5.3	2
2.4328	13.3	16.4	-5.1	2
2.43285	13.4	16.4	-5	2
2.4329	13.3	16.4	-5.1	2
2.43295	13.1	16.4	-5.3	2
2.433	13.1	16.4	-5.3	2
2.43305	13	16.4	-5.4	2
2.4331	13.2	16.4	-5.2	2
2.43315	13.3	16.4	-5.1	2
2.4332	13.4	16.4	-5	2
2.43325	12.9	16.4	-5.5	2
2.4333	13	16.4	-5.4	2
2.43335	13.1	16.4	-5.3	2
2.4334	12.8	16.4	-5.6	2
2.43345	12.5	16.4	-5.9	2
2.4335	12.5	16.4	-5.9	2
2.43355	12.2	16.4	-6.2	2
2.4336	12.4	16.4	-6	2
2.43365	12.5	16.4	-5.9	2
2.4337	12.6	16.4	-5.8	2
2.43375	12.2	16.4	-6.2	2

11Mbps CHANNEL 6 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4338	12.3	16.4	-6.1	2
2.43385	12.5	16.4	-5.9	2
2.4339	12.2	16.4	-6.2	2
2.43395	11.8	16.4	-6.6	2
2.434	11.7	16.4	-6.7	2
2.43405	11.5	16.4	-6.9	2
2.4341	11.6	16.4	-6.8	2
2.43415	11.6	16.4	-6.8	2
2.4342	11.5	16.4	-6.7	2
2.43425	11.1	16.4	-7.3	2
2.4343	11.3	16.4	-7.1	2
2.43435	11.5	16.4	-6.9	2
2.4344	11.5	16.4	-7	2
2.43445	11.4	16.4	-7.1	2
2.4345	11.4	16.4	-7	2
2.43455	11.3	16.4	-7.1	2
2.4346	11.5	16.4	-6.9	2
2.43465	11.7	16.4	-6.7	2
2.4347	11.8	16.4	-6.6	2
2.43475	11.3	16.4	-7.1	2
2.4348	11.4	16.4	-7	2
2.43485	11.6	16.4	-6.8	2
2.4349	11.4	16.4	-7	2
2.43495	11.2	16.4	-7.2	2
2.435	11.2	16.4	-7.2	2
2.43505	11.2	16.4	-7.2	2
2.4351	11.4	16.4	-7	2
2.43515	11.6	16.4	-6.8	2
2.4352	11.8	16.4	-6.6	2
2.43525	11.4	16.4	-7	2
2.4353	11.7	16.4	-6.7	2
2.43535	11.9	16.4	-6.5	2
2.4354	11.7	16.4	-6.7	2
2.43545	11.5	16.4	-6.9	2

11Mbps CHANNEL 6 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4355	11.4	16.4	-7	2
2.43555	11.3	16.4	-7.1	2
2.4356	11.5	16.4	-6.9	2
2.43565	11.6	16.4	-6.8	2
2.4357	11.7	16.4	-6.7	2
2.43575	11.4	16.4	-7	2
2.4358	11.7	16.4	-6.7	2
2.43585	12	16.4	-6.4	2
2.4359	11.9	16.4	-6.5	2
2.43595	11.7	16.4	-6.7	2
2.436	11.7	16.4	-6.7	2
2.43605	11.5	16.4	-6.9	2
2.4361	11.8	16.4	-6.6	2
2.43615	11.9	16.4	-6.5	2
2.4362	12	16.4	-6.4	2
2.43625	11.6	16.4	-6.8	2
2.4363	11.8	16.4	-6.6	2
2.43635	11.9	16.4	-6.5	2
2.4364	11.8	16.4	-6.6	2
2.43645	11.6	16.4	-6.8	2
2.4365	11.6	16.4	-6.8	2
2.43655	11.5	16.4	-6.9	2
2.4366	11.7	16.4	-6.7	2
2.43665	11.9	16.4	-6.5	2
2.4367	12	16.4	-6.4	2
2.43675	11.5	16.4	-6.9	2
2.4368	11.6	16.4	-6.8	2
2.43685	11.6	16.4	-6.8	2
2.4369	11.4	16.4	-7	2
2.43695	11.1	16.4	-7.3	2
2.437	11.1	16.4	-7.3	2
2.43705	11.1	16.4	-7.3	2
2.4371	11.4	16.4	-7	2
2.43715	11.6	16.4	-6.8	2

11Mbps CHANNEL 6 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4372	11.8	16.4	-6.6	2
2.43725	11.6	16.4	-6.8	2
2.4373	11.9	16.4	-6.5	2
2.43735	12.1	16.4	-6.3	2
2.4374	11.9	16.4	-6.5	2
2.43745	11.6	16.4	-6.8	2
2.4375	11.6	16.4	-6.8	2
2.43755	11.6	16.4	-6.8	2
2.4376	11.8	16.4	-6.6	2
2.43765	11.9	16.4	-6.5	2
2.4377	12	16.4	-6.4	2
2.43775	11.6	16.4	-6.8	2
2.4378	11.9	16.4	-6.5	2
2.43785	12.2	16.4	-6.2	2
2.4379	12.2	16.4	-6.2	2
2.43795	11.9	16.4	-6.5	2
2.438	11.9	16.4	-6.5	2
2.43805	11.7	16.4	-6.7	2
2.4381	11.9	16.4	-6.5	2
2.43815	11.9	16.4	-6.5	2
2.4382	12	16.4	-6.4	2
2.43825	11.5	16.4	-6.9	2
2.4383	11.7	16.4	-6.7	2
2.43835	11.8	16.4	-6.6	2
2.4384	11.7	16.4	-6.7	2
2.43845	11.5	16.4	-6.9	2
2.4385	11.5	16.4	-6.9	2
2.43855	11.5	16.4	-6.9	2
2.4386	11.7	16.4	-6.7	2
2.43865	11.8	16.4	-6.6	2
2.4387	11.9	16.4	-6.5	2
2.43875	11.5	16.4	-6.9	2
2.4388	11.6	16.4	-6.8	2
2.43885	11.8	16.4	-6.6	2

11Mbps CHANNEL 6 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4389	11.6	16.4	-6.8	2
2.4895	11.3	16.4	-7.1	2
2.439	11.3	16.4	-7.1	2
2.43905	11.1	16.4	-7.3	2
2.4391	11.3	16.4	-7.1	2
2.43915	11.4	16.4	-7	2
2.4392	11.5	16.4	-6.9	2
2.43925	11.2	16.4	-7.2	2
2.4393	11.5	16.4	-6.9	2
2.43935	11.7	16.4	-6.7	2
2.4394	11.8	16.4	-6.6	2
2.43945	11.6	16.4	-6.8	2
2.4395	11.4	16.4	-7	2
2.43955	11.4	16.4	-7	2
2.4396	11.6	16.4	-6.8	2
2.43965	11.7	16.4	-6.7	2
2.4397	11.6	16.4	-6.8	2
2.43975	11.2	16.4	-7.2	2
2.4398	11.4	16.4	-7	2
2.43985	11.7	16.4	-6.7	2
2.4399	11.7	16.4	-6.7	2
2.43995	11.9	16.4	-6.5	2
2.44	12	16.4	-6.4	2
2.44005	12	16.4	-6.4	2
2.4401	12.4	16.4	-6	2
2.44015	12.5	16.4	-5.9	2
2.4402	12.6	16.4	-5.8	2
2.44025	12.2	16.4	-6.2	2
2.4403	12.4	16.4	-6	2
2.44035	12.6	16.4	-5.8	2
2.4404	12.5	16.4	-5.9	2
2.44045	12.2	16.4	-6.2	2
2.4405	12.3	16.4	-6.1	2
2.44055	12.3	16.4	-6.1	2

11Mbps CHANNEL 6 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4406	12.7	16.4	-5.7	2
2.44065	12.9	16.4	-5.5	2
2.4407	13.2	16.4	-5.2	2
2.44075	12.8	16.4	-5.6	2
2.4408	13.1	16.4	-5.3	2
2.44085	13.3	16.4	-5.1	2
2.4409	13.2	16.4	-5.2	2
2.44095	13	16.4	-5.4	2
2.441	13	16.4	-5.4	2
2.44105	12.9	16.4	-5.5	2
2.4411	13.1	16.4	-5.3	2
2.44115	13.3	16.4	-5.1	2
2.4412	13.5	16.4	-4.9	2
2.44125	13.2	16.4	-5.2	2
2.4413	13.6	16.4	-4.8	2
2.44135	13.9	16.4	-4.5	2
2.4414	13.9	16.4	-4.5	2
2.44145	13.8	16.4	-4.6	2
2.4415	13.9	16.4	-4.5	2
2.44155	13.8	16.4	-4.6	2
2.4416	14	16.4	-4.4	2
2.44165	14.1	16.4	-4.3	2
2.4417	14.3	16.4	-4.1	2
2.44175	13.9	16.4	-4.5	2
2.4418	14.2	16.4	-4.2	2
2.44185	14.6	16.4	-3.8	2
2.4419	14.6	16.4	-3.8	2
2.44195	14.5	16.4	-3.9	2
2.442	14.7	16.4	-3.7	2

11Mbps CHANNEL 11 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.457	14.7	16.4	-3.7	2
2.45705	14.5	16.4	-3.9	2
2.4571	14.6	16.4	-3.8	2
2.45715	14.6	16.4	-3.8	2
2.4572	14.5	16.4	-3.9	2
2.45725	14.1	16.4	-4.3	2
2.4573	14.2	16.4	-4.2	2
2.45735	14.4	16.4	-4	2
2.4574	14.3	16.4	-4.1	2
2.45745	14.1	16.4	-4.3	2
2.4575	14	16.4	-4.4	2
2.45755	13.8	16.4	-4.6	2
2.4576	13.8	16.4	-4.6	2
2.45765	13.8	16.4	-4.6	2
2.4577	13.8	16.4	-4.6	2
2.45775	13.3	16.4	-5.1	2
2.4578	13.4	16.4	-5	2
2.45785	13.6	16.4	-4.8	2
2.4579	13.5	16.4	-4.9	2
2.45795	13.3	16.4	-5.1	2
2.458	13.3	16.4	-5.1	2
2.45805	13.1	16.4	-5.3	2
2.4581	13.4	16.4	-5	2
2.45815	13.5	16.4	-4.9	2
2.4582	13.5	16.4	-4.9	2
2.45825	13	16.4	-5.4	2
2.4583	13.1	16.4	-5.3	2
2.45835	13.2	16.4	-5.2	2
2.4584	13	16.4	-5.4	2
2.45845	12.7	16.4	-5.7	2
2.4585	12.6	16.4	-5.8	2
2.45855	12.5	16.4	-5.9	2
2.4586	12.7	16.4	-5.7	2
2.45865	12.8	16.4	-5.6	2

11Mbps CHANNEL 11 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4587	12.9	16.4	-5.5	2
2.45875	12.5	16.4	-5.9	2
2.4588	12.8	16.4	-5.6	2
2.45885	12.9	16.4	-5.5	2
2.4589	12.7	16.4	-5.7	2
2.45895	12.4	16.4	-6	2
2.459	12.3	16.4	-6.1	2
2.45905	12	16.4	-6.4	2
2.4591	12.1	16.4	-6.3	2
2.45915	12.2	16.4	-6.2	2
2.4592	12.2	16.4	-6.2	2
2.45925	11.8	16.4	-6.6	2
2.4593	11.9	16.4	-6.5	2
2.45935	12.2	16.4	-6.2	2
2.4594	12.1	16.4	-6.3	2
2.45945	11.9	16.4	-6.5	2
2.4595	11.9	16.4	-6.5	2
2.45955	11.9	16.4	-6.5	2
5.4596	12.1	16.4	-6.3	2
2.45965	12.1	16.4	-6.3	2
2.4597	12.2	16.4	-6.2	2
2.45975	11.7	16.4	-6.7	2
2.4598	11.8	16.4	-6.6	2
2.45985	11.9	16.4	-6.5	2
2.4599	11.8	16.4	-6.6	2
2.45995	11.5	16.4	-6.9	2
2.46	11.5	16.4	-6.9	2
2.46005	11.4	16.4	-7	2
2.4601	11.7	16.4	-6.7	2
2.46015	11.9	16.4	-6.5	2
2.4602	12	16.4	-6.4	2
2.46025	11.7	16.4	-6.7	2
2.4603	11.9	16.4	-6.5	2
2.46035	12.1	16.4	-6.3	2
2.4604	12	16.4	-6.4	2
2.46045	11.7	16.4	-6.7	2

11Mbps CHANNEL 11 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4605	11.7	16.4	-6.7	2
2.46055	11.5	16.4	-6.9	2
2.4606	11.7	16.4	-6.7	2
2.46065	11.9	16.4	-6.5	2
2.4607	12	16.4	-6.4	2
2.46075	11.7	16.4	-6.7	2
2.4608	11.9	16.4	-6.5	2
2.46085	12.3	16.4	-6.1	2
2.4609	12.3	16.4	-6.1	2
2.46095	12.2	16.4	-6.2	2
2.461	12.2	16.4	-6.2	2
2.46105	12	16.4	-6.4	2
2.4611	12.3	16.4	-6.1	2
2.46115	12.5	16.4	-5.9	2
2.4612	12.6	16.4	-5.8	2
2.46125	12.2	16.4	-6.2	2
2.4613	12.4	16.4	-6	2
2.46135	12.6	16.4	-5.8	2
2.4614	12.5	16.4	-5.9	2
2.46145	12.3	16.4	-6.1	2
2.4615	12.4	16.4	-6	2
2.46155	12.3	16.4	-6.1	2
2.4616	12.6	16.4	-5.8	2
2.46165	12.7	16.4	-5.7	2
2.4617	12.9	16.4	-5.5	2
2.46175	12.4	16.4	-6	2
2.4618	12.5	16.4	-5.9	2
2.46185	12.6	16.4	-5.8	2
2.4619	12.4	16.4	-6	2
2.46195	12.2	16.4	-6.2	2
2.462	12.1	16.4	-6.3	2
2.46205	12.1	16.4	-6.3	2
2.4621	12.4	16.4	-6	2
2.46215	12.6	16.4	-5.8	2

11Mbps CHANNEL 11 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4622	12.8	16.4	-5.6	2
2.46225	12.5	16.4	-5.9	2
2.4623	12.8	16.4	-5.6	2
2.46235	12.9	16.4	-5.5	2
2.4624	12.8	16.4	-5.6	2
2.46245	12.5	16.4	-5.9	2
2.4625	12.5	16.4	-5.9	2
2.46255	12.4	16.4	-6	2
2.4626	12.6	16.4	-5.8	2
2.46265	12.7	16.4	-5.7	2
2.4627	12.7	16.4	-5.7	2
2.46275	12.4	16.4	-6	2
2.4628	12.6	16.4	-5.8	2
2.46285	12.8	16.4	-5.6	2
2.4629	12.6	16.4	-5.8	2
2.46295	12.4	16.4	-6	2
2.463	12.4	16.4	-6	2
2.46305	12.2	16.4	-6.2	2
2.4631	12.3	16.4	-6.1	2
2.46315	12.3	16.4	-6.1	2
2.4632	12.4	16.4	-6	2
2.46325	11.9	16.4	-6.5	2
2.4633	12.1	16.4	-6.3	2
2.46335	12.2	16.4	-6.2	2
2.4634	12.2	16.4	-6.2	2
2.46345	12	16.4	-6.4	2
2.4635	12.1	16.4	-6.3	2
2.46355	12	16.4	-6.4	2
2.4636	12.3	16.4	-6.1	2
2.46365	12.4	16.4	-6	2
2.4637	12.6	16.4	-5.8	2
2.46375	12.2	16.4	-6.2	2
2.4638	12.3	16.4	-6.1	2
2.46385	12.5	16.4	-5.9	2

11Mbps CHANNEL 11 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4639	12.3	16.4	-6.1	2
2.46395	12	16.4	-6.4	2
2.464	12	16.4	-6.4	2
2.46405	11.9	16.4	-6.5	2
2.4641	12.1	16.4	-6.3	2
2.46415	12.2	16.4	-6.2	2
2.4642	12.4	16.4	-6	2
2.46425	12.1	16.4	-6.3	2
2.4643	12.4	16.4	-6	2
2.46435	12.7	16.4	-5.7	2
4.4644	12.6	16.4	-5.8	2
2.46445	12.4	16.4	-6	2
2.4645	12.4	16.4	-6	2
2.46455	12.2	16.4	-6.2	2
2.4646	12.3	16.4	-6.1	2
2.46465	12.4	16.4	-6	2
2.4647	12.6	16.4	-5.8	2
2.46475	12.2	16.4	-6.2	2
2.4648	12.5	16.4	-5.9	2
2.46485	12.8	16.4	-5.6	2
2.4649	12.7	16.4	-5.7	2
2.46495	12.7	16.4	-5.7	2
2.465	12.8	16.4	-5.6	2
2.46505	12.8	16.4	-5.6	2
2.4651	13	16.4	-5.4	2
2.46515	13.2	16.4	-5.2	2
2.4652	13.2	16.4	-5.2	2
2.46525	12.8	16.4	-5.6	2
2.4653	13	16.4	-5.4	2
2.46535	13.1	16.4	-5.3	2
2.4654	13.1	16.4	-5.3	2
2.46545	12.9	16.4	-5.5	2
2.4655	12.9	16.4	-5.5	2

11Mbps CHANNEL 11 Processing Gain				
Freq.	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.46555	13	16.4	-5.4	2
2.4656	13.2	16.4	-5.2	2
2.46565	13.5	16.4	-4.9	2
2.4657	13.7	16.4	-4.7	2
2.46575	13.4	16.4	-5	2
2.4658	13.6	16.4	-4.8	2
2.46585	13.9	16.4	-4.5	2
2.4659	13.8	16.4	-4.6	2
2.46595	13.6	16.4	-4.8	2
2.466	13.6	16.4	-4.8	2
2.46605	13.5	16.4	-4.9	2
2.4661	13.7	16.4	-4.7	2
2.46615	13.9	16.4	-4.5	2
2.4662	14.1	16.4	-4.3	2
2.46625	13.8	16.4	-4.6	2
2.4663	14.1	16.4	-4.3	2
2.46635	14.4	16.4	-4	2
2.4664	14.6	16.4	-3.8	2
2.46645	14.4	16.4	-4	2
2.4665	14.5	16.4	-3.9	2
2.46655	14.4	16.4	-4	2
2.4666	14.6	16.4	-3.8	2
2.46665	14.8	16.4	-3.6	2
2.4667	14.9	16.4	-3.5	2
2.46675	14.6	16.4	-3.8	2
2.4668	14.8	16.4	-3.6	2
2.46685	15.1	16.4	-3.3	2
2.4669	15.1	16.4	-3.3	2
2.46695	15.1	16.4	-3.3	2
2.467	15.2	16.4	-3.2	2

2Mbps CHANNEL 6 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.432	13.7	13.3	-1.6	2
2.43205	13.2	13.3	-2.1	2
2.4321	13.3	13.3	-2	2
2.43215	13.3	13.3	-2	2
2.4322	13.3	13.3	-2	2
2.43225	12.9	13.3	-2.4	2
2.4323	13.1	13.3	-2.2	2
2.43235	13.3	13.3	-2	2
2.4324	13.3	13.3	-2	2
2.43245	13.3	13.3	-2	2
2.4325	13.4	13.3	-1.9	2
2.43255	13.3	13.3	-2	2
2.4326	13.6	13.3	-1.7	2
2.43265	13.7	13.3	-1.6	2
2.4327	13.8	13.3	-1.5	2
2.43275	13.5	13.3	-1.8	2
2.4328	13.7	13.3	-1.6	2
2.43285	13.9	13.3	-1.4	2
2.4329	13.6	13.3	-1.7	2
2.43295	13.4	13.3	-1.9	2
2.433	13.4	13.3	-1.9	2
2.43305	13.1	13.3	-2.2	2
2.4331	13.1	13.3	-2.2	2
2.43315	13.2	13.3	-2.1	2
2.4332	13.1	13.3	-2.2	2
2.43325	12.8	13.3	-2.5	2
2.4333	12.9	13.3	-2.4	2
2.43335	13.1	13.3	-2.2	2
2.4334	13	13.3	-2.3	2
2.43345	13	13.3	-2.3	2
2.4335	12.8	13.3	-2.5	2
2.43355	13	13.3	-2.3	2

2Mbps CHANNEL 6 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4336	13.3	13.3	-2	2
2.43365	13.4	13.3	-1.9	2
2.4337	13.5	13.3	-1.8	2
2.43375	13.1	13.3	-2.2	2
2.4338	13.4	13.3	-1.9	2
2.43385	13.3	13.3	-2	2
2.4339	13.1	13.3	-2.2	2
2.43395	13	13.3	-2.3	2
2.434	13.1	13.3	-2.2	2
2.43405	12.7	13.3	-2.6	2
2.4341	12.8	13.3	-2.5	2
2.43415	13	13.3	-2.3	2
2.4342	12.9	13.3	-2.4	2
2.43425	12.6	13.3	-2.7	2
2.4343	12.8	13.3	-2.5	2
2.43435	12.9	13.3	-2.4	2
2.4344	12.6	13.3	-2.7	2
2.43445	12.8	13.3	-2.5	2
2.4345	12.3	13.3	-3	2
2.43455	12.8	13.3	-2.5	2
2.4346	13.2	13.3	-2.1	2
2.43465	13.4	13.3	-1.9	2
2.4347	13.5	13.3	-1.8	2
2.43475	13	13.3	-2.3	2
2.4348	13.4	13.3	-1.9	2
2.43485	12.9	13.3	-2.4	2
2.4349	12.5	13.3	-2.8	2
2.43495	12.8	13.3	-2.5	2
2.435	12.8	13.3	-2.5	2
2.43505	12.6	13.3	-2.7	2
2.4351	12.7	13.3	-2.6	2
2.43515	12.8	13.3	-2.5	2
2.4352	12.7	13.3	-2.6	2
2.43525	12.3	13.3	-3	2
2.4353	12.6	13.3	-2.7	2
2.43535	12.4	13.3	-2.9	2

2Mbps CHANNEL 6 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4354	11.9	13.3	-3.4	2
2.43545	12.3	13.3	-3	2
2.4355	11.7	13.3	-3.6	2
2.43555	12.5	13.3	-2.8	2
2.4356	13	13.3	-2.3	2
2.43565	13.3	13.3	-2	2
2.4357	13.3	13.3	-2	2
5.43575	12.9	13.3	-2.4	2
2.4358	13.2	13.3	-2.1	2
2.43585	12.6	13.3	-2.7	2
2.4359	12.1	13.3	-3.2	2
2.43595	12.6	13.3	-2.7	2
2.436	12.7	13.3	-2.6	2
2.43605	12.6	13.3	-2.7	2
2.4361	12.7	13.3	-2.6	2
2.43615	12.8	13.3	-2.5	2
2.4362	12.6	13.3	-2.7	2
2.43625	12.2	13.3	-3.1	2
2.4363	12.4	13.3	-2.9	2
2.43635	12	13.3	-3.3	2
2.4364	11.5	13.3	-3.8	2
2.43645	11.9	13.3	-3.4	2
2.4365	11.4	13.3	-3.9	2
2.43655	12.7	13.3	-2.6	2
2.4366	13.4	13.3	-1.9	2
2.43665	14.1	13.3	-1.2	2
2.4367	14.6	13.3	-0.7	2
2.43675	15.2	13.3	-0.1	2
2.4368	16	13.3	0.7	2
2.43685	16.7	13.3	1.4	2
2.4369	16.5	13.3	1.2	2
2.43695	16.5	13.3	1.2	2
2.437	16.8	13.3	1.5	2
2.43705	16.4	13.3	1.1	2

2Mbps CHANNEL 6 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4371	16.6	13.3	1.3	2
2.43715	16.4	13.3	1.1	2
2.4372	16	13.3	0.7	2
2.43725	14.9	13.3	-0.4	2
2.4373	14.3	13.3	-1	2
2.43735	14	13.3	-1.3	2
2.4374	13.1	13.3	-2.2	2
2.43745	12.8	13.3	-2.5	2
2.4375	11.8	13.3	-3.5	2
2.43755	12.2	13.3	-3.1	2
2.4376	12.4	13.3	-2.9	2
2.43765	12.5	13.3	-2.8	2
2.4377	12.5	13.3	-2.8	2
2.43775	11.8	13.3	-3.5	2
2.4378	12.3	13.3	-3	2
2.43785	11.6	13.3	-3.7	2
2.4379	11.6	13.3	-3.7	2
2.43795	12.3	13.3	-3	2
2.438	12.7	13.3	-2.6	2
2.43805	12.8	13.3	-2.5	2
2.4381	13.1	13.3	-2.2	2
2.43815	13.3	13.3	-2	2
2.4382	13.4	13.3	-1.9	2
2.43825	13	13.3	-2.3	2
2.4383	13.1	13.3	-2.2	2
2.43835	13.1	13.3	-2.2	2
2.4384	12.4	13.3	-2.9	2
2.43845	12.6	13.3	-2.7	2
2.4385	11.9	13.3	-3.4	2
2.43855	12.4	13.3	-2.9	2
2.4386	12.6	13.3	-2.7	2
2.43865	12.7	13.3	-2.6	2
2.4387	12.7	13.3	-2.6	2
2.43875	12.1	13.3	-3.2	2

2Mbps CHANNEL 6 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4388	12.6	13.3	-2.7	2
2.43885	12.1	13.3	-3.2	2
2.4389	12	13.3	-3.3	2
2.43895	12.6	13.3	-2.7	2
2.439	12.9	13.3	-2.4	2
2.43905	12.8	13.3	-2.5	2
2.4391	13.1	13.3	-2.2	2
2.43915	13.3	13.3	-2	2
2.4392	13.3	13.3	-2	2
2.43925	13	13.3	-2.3	2
2.4393	13.1	13.3	-2.2	2
2.43935	13.1	13.3	-2.2	2
2.4394	12.7	13.3	-2.6	2
2.43945	12.7	13.3	-2.6	2
2.4395	12.2	13.3	-3.1	2
2.43955	12.5	13.3	-2.8	2
2.4396	12.6	13.3	-2.7	2
2.43965	12.7	13.3	-2.6	2
2.4397	12.7	13.3	-2.6	2
2.43975	12.2	13.3	-3.1	2
2.4398	12.6	13.3	-2.7	2
2.43985	12.5	13.3	-2.8	2
2.4399	12.4	13.3	-2.9	2
2.43995	12.6	13.3	-2.7	2
2.44	12.9	13.3	-2.4	2
2.44005	12.7	13.3	-2.6	2
2.4401	13	13.3	-2.3	2
2.44015	13.2	13.3	-2.1	2
2.4402	13.2	13.3	-2.1	2
2.44025	12.9	13.3	-2.4	2
2.4403	13.1	13.3	-2.2	2
2.44035	13.3	13.3	-2	2
2.4404	13	13.3	-2.3	2
2.44045	12.9	13.3	-2.4	2

2Mbps CHANNEL 6 Processing Gain				
Frequency	Gp	(S/N) ◦	Mj = J/S	Lsys
(GHz)	(dB)	(dB)	(dB)	(dB)
2.4405	12.7	13.3	-2.6	2
2.44055	12.6	13.3	-2.7	2
2.4406	12.8	13.3	-2.5	2
2.44065	12.8	13.3	-2.5	2
2.4407	13	13.3	-2.3	2
2.44075	12.6	13.3	-2.7	2
2.4408	12.9	13.3	-2.4	2
2.44085	13.1	13.3	-2.2	2
2.4409	13	13.3	-2.3	2
2.44095	13	13.3	-2.3	2
2.441	13.3	13.3	-2	2
2.44105	13.2	13.3	-2.1	2
2.4411	13.4	13.3	-1.9	2
2.44115	13.7	13.3	-1.6	2
2.4412	13.8	13.3	-1.5	2
2.44125	13.5	13.3	-1.8	2
2.4413	13.6	13.3	-1.7	2
2.44135	13.9	13.3	-1.4	2
2.4414	13.7	13.3	-1.6	2
2.44145	13.5	13.3	-1.8	2
2.4415	13.4	13.3	-1.9	2
2.44155	13.2	13.3	-2.1	2
2.4416	13.2	13.3	-2.1	2
2.44165	13.2	13.3	-2.1	2
2.4417	13.2	13.3	-2.1	2
2.44175	12.8	13.3	-2.5	2
2.4418	13	13.3	-2.3	2
2.44185	13.2	13.3	-2.1	2
2.4419	13.1	13.3	-2.2	2
2.44195	13.2	13.3	-2.1	2
2.442	13.6	13.3	-1.7	2