

TECHNICAL EXHIBIT  
IN SUPPORT OF A MODIFICATION OF  
SPECIAL TEMPORARY AUTHORITY (STA)  
STATION WJWN-DT (FACILITY ID 58342)  
SAN SEBASTIAN, PUERTO RICO  
CH 39 19.5 KW (MAX-DA) 627 M

Technical Narrative

This Technical Exhibit supports a request for modification of a Special Temporary Authorization (“STA”) for digital television station WJWN-DT on Channel 39 at San Sebastian, Puerto Rico.

WJWN-TV currently operates with digital facilities on Channel 39 pursuant to an STA from a site located at 18° 19’ 6” N, 67° 10’ 42” W with a maximum effective radiated power (“ERP”) of 1 kW and an antenna height above average terrain (HAAT) of 318 meters (BDSTA-20030401CJR). However, WJWN-TV holds a construction permit to operate on digital channel 39 from a site at 18° 09’ 00” N, 66° 59’ 00” W, with an ERP of 700 kW and an antenna height above average terrain (HAAT) of 627 meters (FCC File No. BMPCDT-20040120AES). WJWN-TV has elected to operate on Channel 39 post-transition (FCC File No. BRFECT-20050208AEO).

In order to commence the final step towards permanent transition to digital, WJWN-TV now desires to commence operation with the facilities specified in the CP. WJWN-TV requires an STA, however, because it intends to operate at 19.5 kW ERP, instead of at 700 kW ERP. WJWN-TV’s operation pursuant to an STA is in accordance with the procedures adopted in *Review of the Commission’s Rules and Regulations Affecting the Conversion to Digital Television*, 16 FCC Rcd 20594 at ¶ 34 (2001).

WJWN-TV is authorized to operate as a satellite station. *Televiscentro of Puerto Rico, LLC*, 22 FCC Rcd 2176 (2007). Satellite stations that have constructed

digital facilities retain replication and maximization interference protection until the end of the transition period<sup>1</sup>

### Proposed STA Facilities

The Tech Box in the STA Application provides details of the technical facilities requested. The map in Figure 1 illustrates that the proposed STA operation adequately encompasses the city limits of San Sebastian (derived from 2000 U.S. Census information for Puerto Rico). It is also noted in Figure 1 that the predicted STA 41 dBu F(50,90) noise-limited contour is completely within the WJWN-DT authorized noise-limited contour. Average elevations from 3.2 to 16.1 km were obtained from the U.S.G.S. 3-second digitized terrain database for determining distances to contours.

Figure 2 provides graphs and tabulations of the horizontal and vertical plane relative field patterns and tabulations for the proposed Dielectric model TFU-24DSB-M (C) directional antenna system.

### Quiet Zones and FCC Monitoring Stations

The outstanding CP had been cleared with the National Astronomy and Ionosphere Center and was shown to be in compliance with the requirements pertaining to FCC monitoring stations. The proposed STA with CP facilities, but at a reduced power level, should have no adverse affects on these facilities. Therefore, notification to the National Astronomy and Ionosphere Center, located at Arecibo, Puerto Rico is not deemed necessary.

---

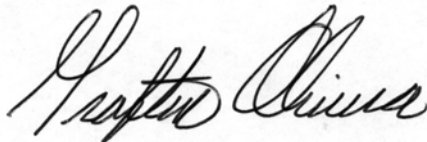
<sup>1</sup> *Second Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, 19 FCC Rcd 18279 at ¶ 104 (2004). See also *Public Notice, DTV Channel Election Issues - Compliance with the July 1, 2006 Replication/Maximization Interference Protection Deadline*, 21 FCC Rcd 6540 (MB 2006).

Environmental Considerations

WJWN-DT is currently authorized to operate from the proposed site and antenna system with an ERP of 700 kW. The proposed STA operation, at a reduced ERP of 19.5 kW would create less radiofrequency radiation exposure than is currently authorized for the CP facilities. Therefore the proposal is deemed in compliance with RF emission rules. Access to the transmitting site is restricted and appropriately marked with warning signs. Furthermore, procedures will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. The tower owner as part of the tower registration process has provided all other aspects of the environmental processing analysis to the FCC.

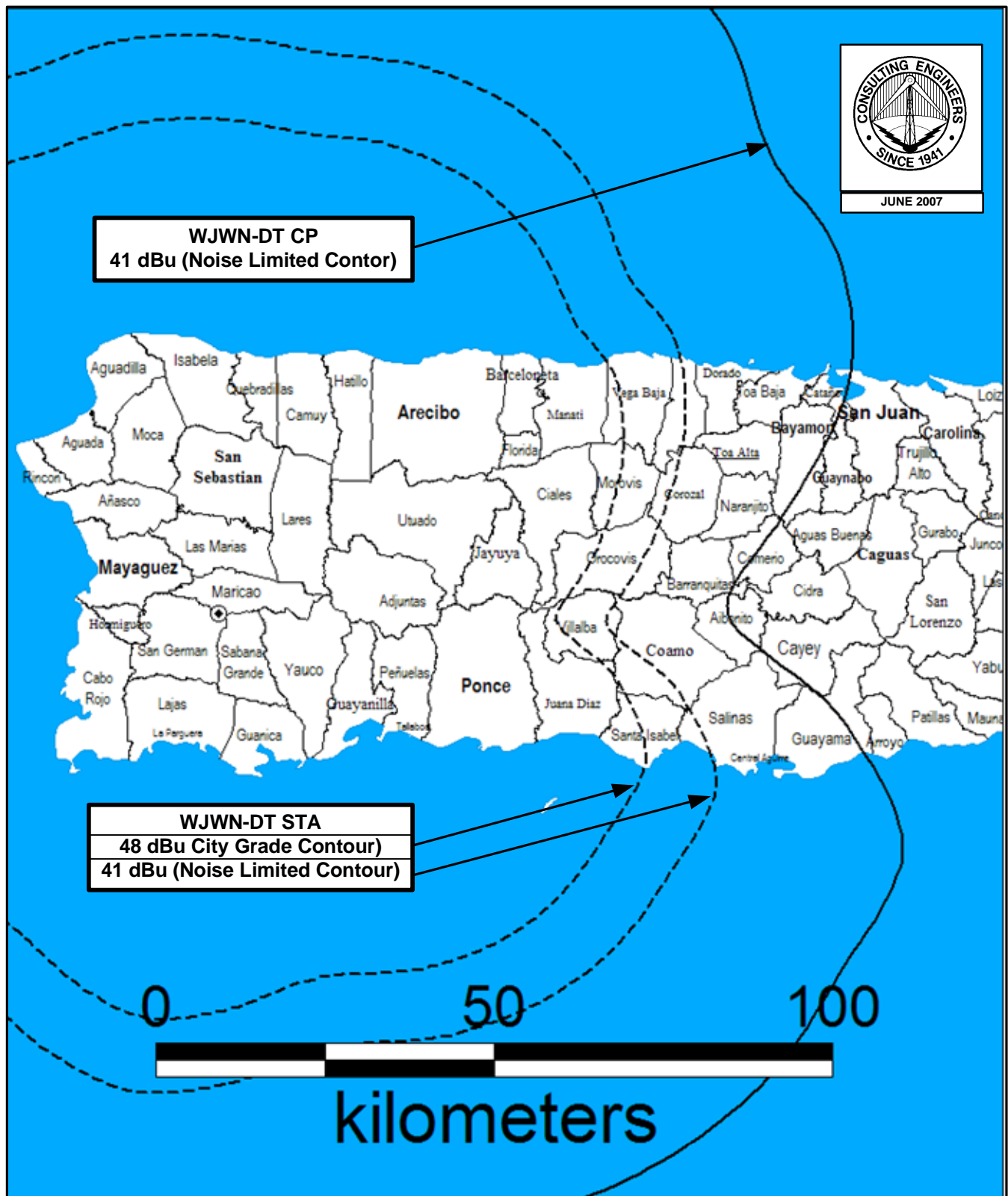
If there are any questions, or additional information is required, please contact the office of the undersigned.



Grafton Olivera, P.E.  
du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, FL 34237-6019  
(941) 329-6000

June 6, 2007

Figure 1



**PREDICTED STA COVERAGE**

DTV STATION WJWN-DT

SAN SEBASTIAN, PUERTO RICO

CH 39 19.5 KW (MAX-DA) 627 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

TECHNICAL EXHIBIT  
IN SUPPORT OF A MODIFICATION OF  
SPECIAL TEMPORARY AUTHORITY (STA)  
STATION WJWN-DT (FACILITY ID 58342)  
SAN SEBASTIAN, PUERTO RICO  
CH 39 19.5 KW (MAX-DA) 627 M

Antenna Horizontal and Vertical Plane Pattern Data

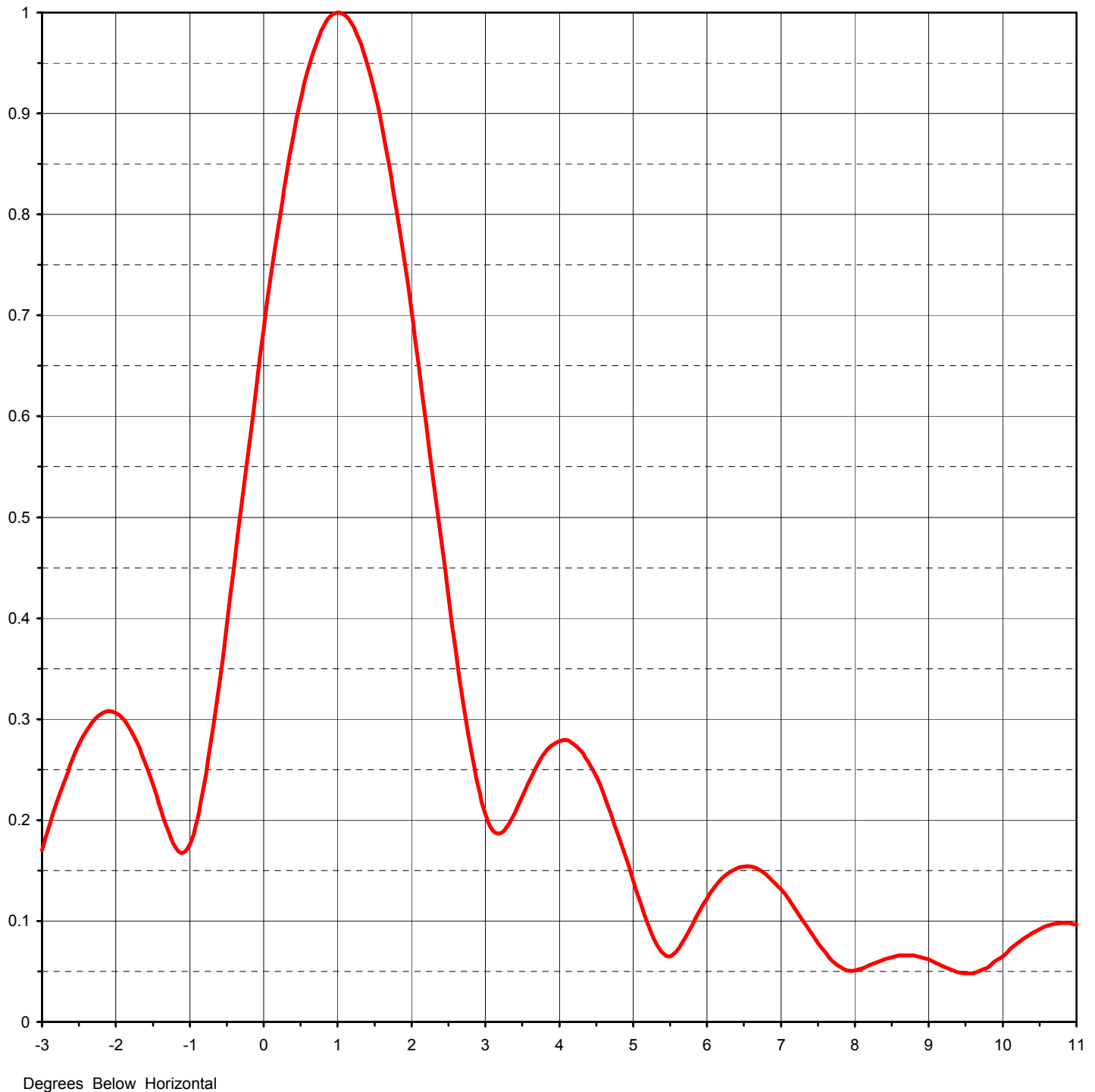
*{five sheets follow}*



Proposal Number	<b>DCA-10374</b>	Revision:	<b>1</b>
Date	<b>19-Dec-03</b>		
Call Letters	<b>WJWN-DT</b>	Channel	<b>39</b>
Location	<b>San Sebastian, PR</b>		
Customer			
Antenna Type	<b>TFU-24DSB-M (C) DC</b>		

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>23.00 ( 13.62 dB )</b>	Beam Tilt	<b>1.00 deg</b>
RMS Gain at Horizontal	<b>10.80 ( 10.33 dB )</b>	Frequency	<b>623.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>24B230100D</b>



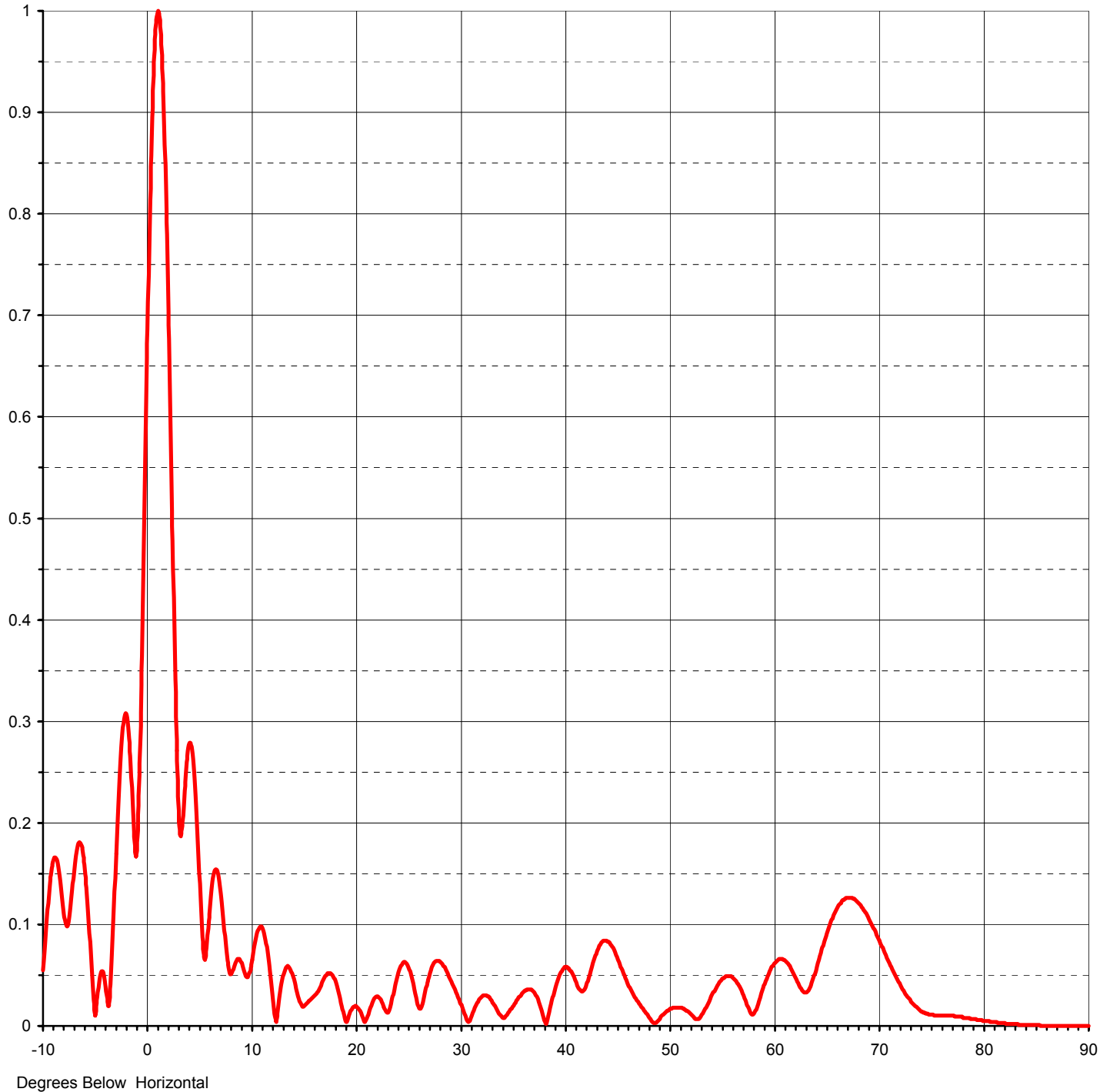


Proposal Number	<b>DCA-10374</b>	Revision:	<b>1</b>
Date	<b>19-Dec-03</b>		
Call Letters	<b>WJWN-DT</b>	Channel	<b>39</b>
Location	<b>San Sebastian, PR</b>		
Customer			
Antenna Type	<b>TFU-24DSB-M (C) DC</b>		

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>23.00 ( 13.62 dB )</b>
RMS Gain at Horizontal	<b>10.80 ( 10.33 dB )</b>
Calculated / Measured	<b>Calculated</b>

Beam Tilt	<b>1.00 deg</b>
Frequency	<b>623.00 MHz</b>
Drawing #	<b>24B230100D-90</b>





Proposal Number **DCA-10374** Revision: **1**  
 Date **19-Dec-03**  
 Call Letters **WJWN-DT** Channel **39**  
 Location **San Sebastian, PR**  
 Customer  
 Antenna Type **TFU-24DSB-M (C) DC**

## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **24B230100D-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.055	2.4	0.478	10.6	0.092	30.5	0.010	51.0	0.018	71.5	0.050
-9.5	0.121	2.6	0.368	10.8	0.097	31.0	0.008	51.5	0.016	72.0	0.040
-9.0	0.163	2.8	0.271	11.0	0.098	31.5	0.020	52.0	0.012	72.5	0.031
-8.5	0.154	3.0	0.206	11.5	0.078	32.0	0.028	52.5	0.007	73.0	0.024
-8.0	0.111	3.2	0.187	12.0	0.036	32.5	0.030	53.0	0.009	73.5	0.019
-7.5	0.106	3.4	0.207	12.5	0.012	33.0	0.025	53.5	0.018	74.0	0.014
-7.0	0.155	3.6	0.240	13.0	0.046	33.5	0.016	54.0	0.029	74.5	0.012
-6.5	0.181	3.8	0.266	13.5	0.059	34.0	0.009	54.5	0.038	75.0	0.011
-6.0	0.154	4.0	0.278	14.0	0.049	34.5	0.011	55.0	0.045	75.5	0.010
-5.5	0.083	4.2	0.275	14.5	0.029	35.0	0.019	55.5	0.049	76.0	0.010
-5.0	0.010	4.4	0.257	15.0	0.019	35.5	0.026	56.0	0.048	76.5	0.010
-4.5	0.051	4.6	0.226	15.5	0.024	36.0	0.033	56.5	0.042	77.0	0.010
-4.0	0.039	4.8	0.185	16.0	0.029	36.5	0.036	57.0	0.032	77.5	0.009
-3.5	0.051	5.0	0.140	16.5	0.036	37.0	0.034	57.5	0.019	78.0	0.008
-3.0	0.170	5.2	0.097	17.0	0.047	37.5	0.024	58.0	0.011	78.5	0.008
-2.8	0.217	5.4	0.068	17.5	0.052	38.0	0.008	58.5	0.022	79.0	0.007
-2.6	0.258	5.6	0.071	18.0	0.046	38.5	0.013	59.0	0.038	79.5	0.006
-2.4	0.288	5.8	0.096	18.5	0.028	39.0	0.034	59.5	0.051	80.0	0.005
-2.2	0.305	6.0	0.122	19.0	0.006	39.5	0.050	60.0	0.061	80.5	0.005
-2.0	0.306	6.2	0.142	19.5	0.014	40.0	0.058	60.5	0.066	81.0	0.004
-1.8	0.289	6.4	0.152	20.0	0.020	40.5	0.055	61.0	0.065	81.5	0.003
-1.6	0.256	6.6	0.154	20.5	0.013	41.0	0.045	61.5	0.059	82.0	0.003
-1.4	0.212	6.8	0.146	21.0	0.006	41.5	0.035	62.0	0.049	82.5	0.002
-1.2	0.174	7.0	0.131	21.5	0.020	42.0	0.038	62.5	0.038	83.0	0.002
-1.0	0.176	7.2	0.111	22.0	0.029	42.5	0.055	63.0	0.033	83.5	0.001
-0.8	0.237	7.4	0.089	22.5	0.024	43.0	0.071	63.5	0.039	84.0	0.001
-0.6	0.336	7.6	0.069	23.0	0.013	43.5	0.082	64.0	0.054	84.5	0.001
-0.4	0.451	7.8	0.055	23.5	0.027	44.0	0.084	64.5	0.076	85.0	0.001
-0.2	0.571	8.0	0.051	24.0	0.049	44.5	0.079	65.0	0.092	85.5	0.000
0.0	0.686	8.2	0.056	24.5	0.062	45.0	0.068	65.5	0.106	86.0	0.000
0.2	0.790	8.4	0.062	25.0	0.059	45.5	0.055	66.0	0.117	86.5	0.000
0.4	0.877	8.6	0.066	25.5	0.042	46.0	0.042	66.5	0.124	87.0	0.000
0.6	0.943	8.8	0.066	26.0	0.019	46.5	0.032	67.0	0.126	87.5	0.000
0.8	0.985	9.0	0.062	26.5	0.026	47.0	0.024	67.5	0.125	88.0	0.000
1.0	1.000	9.2	0.055	27.0	0.048	47.5	0.017	68.0	0.121	88.5	0.000
1.2	0.988	9.4	0.049	27.5	0.062	48.0	0.009	68.5	0.114	89.0	0.000
1.4	0.950	9.6	0.048	28.0	0.064	48.5	0.003	69.0	0.105	89.5	0.000
1.6	0.887	9.8	0.051	28.5	0.058	49.0	0.006	69.5	0.095	90.0	0.000
1.8	0.804	10.0	0.060	29.0	0.047	49.5	0.012	70.0	0.084		
2.0	0.704	10.2	0.072	29.5	0.036	50.0	0.016	70.5	0.072		
2.2	0.593	10.4	0.083	30.0	0.023	50.5	0.018	71.0	0.061		



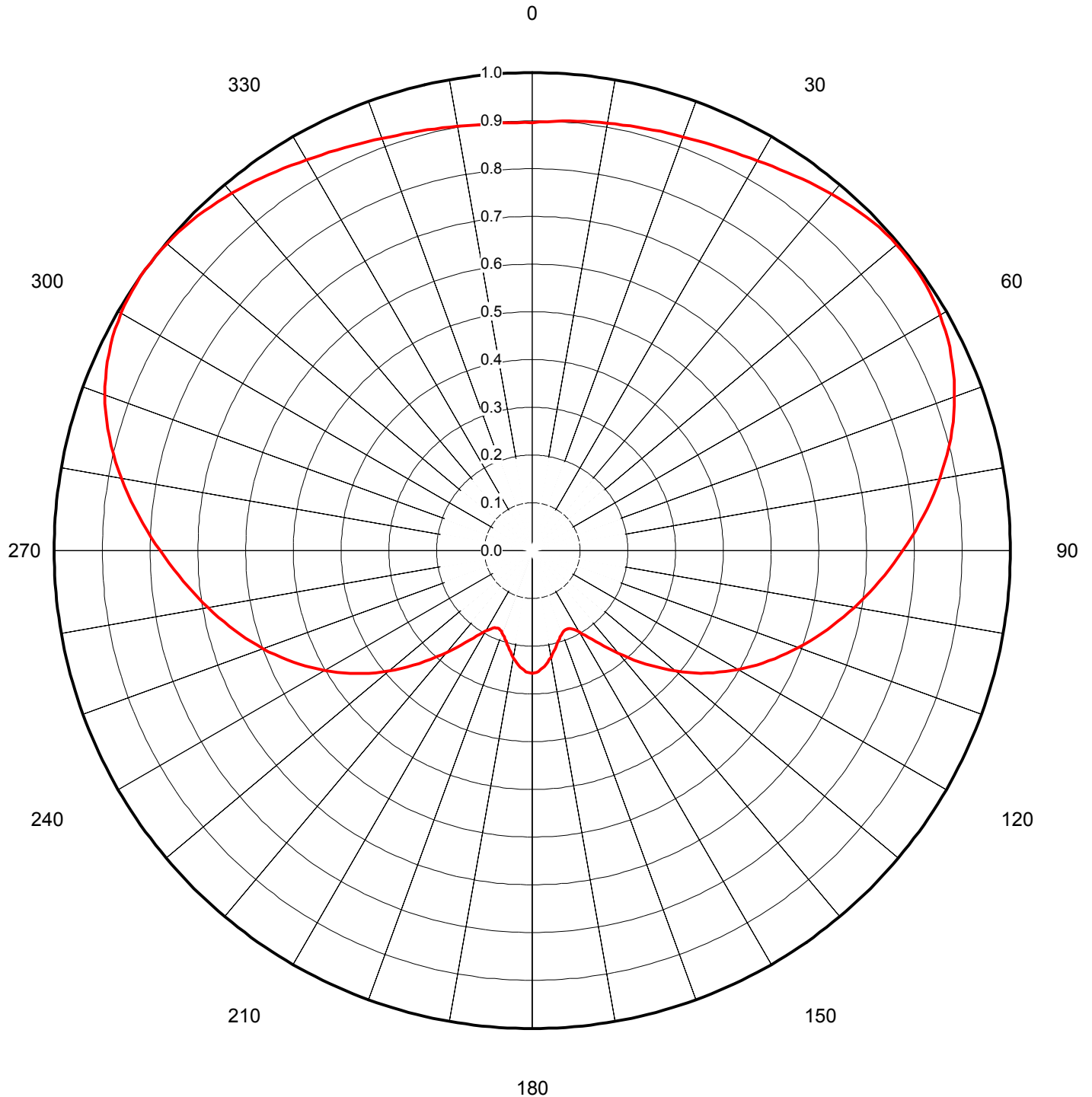


Proposal Number	<b>DCA-10374</b>	Revision:	<b>1</b>
Date	<b>19-Dec-03</b>		
Call Letters	<b>WJWN-DT</b>	Channel	<b>39</b>
Location	<b>San Sebastian, PR</b>		
Customer			
Antenna Type	<b>TFU-24DSB-M (C) DC</b>		

## AZIMUTH PATTERN

Gain	<b>1.90</b>	<b>( 2.79 dB)</b>
Calculated / Measured	<b>Calculated</b>	

Frequency	<b>623.00 MHz</b>
Drawing #	<b>DSB-M-39</b>





Proposal Number **DCA-10374** Revision: **1**  
 Date **19-Dec-03**  
 Call Letters **WJWN-DT** Channel **39**  
 Location **San Sebastian, PR**  
 Customer  
 Antenna Type **TFU-24DSB-M (C) DC**

## TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **DSB-M-39**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.895	45	0.988	90	0.775	135	0.335	180	0.257	225	0.334	270	0.778	315	0.990
1	0.897	46	0.990	91	0.766	136	0.324	181	0.256	226	0.346	271	0.788	316	0.987
2	0.898	47	0.992	92	0.757	137	0.313	182	0.255	227	0.357	272	0.797	317	0.985
3	0.900	48	0.993	93	0.748	138	0.302	183	0.253	228	0.369	273	0.807	318	0.982
4	0.901	49	0.994	94	0.739	139	0.291	184	0.251	229	0.381	274	0.816	319	0.979
5	0.902	50	0.995	95	0.730	140	0.280	185	0.248	230	0.393	275	0.826	320	0.976
6	0.904	51	0.996	96	0.720	141	0.270	186	0.245	231	0.404	276	0.835	321	0.973
7	0.905	52	0.996	97	0.711	142	0.260	187	0.241	232	0.415	277	0.845	322	0.970
8	0.906	53	0.996	98	0.702	143	0.250	188	0.236	233	0.427	278	0.854	323	0.967
9	0.907	54	0.996	99	0.693	144	0.241	189	0.232	234	0.438	279	0.863	324	0.964
10	0.908	55	0.995	100	0.684	145	0.232	190	0.227	235	0.449	280	0.873	325	0.960
11	0.910	56	0.993	101	0.675	146	0.224	191	0.222	236	0.460	281	0.882	326	0.957
12	0.911	57	0.992	102	0.666	147	0.216	192	0.217	237	0.470	282	0.890	327	0.954
13	0.912	58	0.990	103	0.657	148	0.209	193	0.212	238	0.481	283	0.899	328	0.951
14	0.913	59	0.988	104	0.648	149	0.203	194	0.207	239	0.491	284	0.907	329	0.947
15	0.914	60	0.985	105	0.639	150	0.197	195	0.202	240	0.502	285	0.916	330	0.944
16	0.916	61	0.982	106	0.630	151	0.192	196	0.198	241	0.512	286	0.923	331	0.941
17	0.917	62	0.979	107	0.620	152	0.188	197	0.194	242	0.522	287	0.931	332	0.938
18	0.918	63	0.975	108	0.611	153	0.184	198	0.190	243	0.532	288	0.938	333	0.935
19	0.920	64	0.971	109	0.602	154	0.182	199	0.186	244	0.542	289	0.945	334	0.933
20	0.921	65	0.967	110	0.593	155	0.180	200	0.183	245	0.552	290	0.951	335	0.930
21	0.923	66	0.962	111	0.583	156	0.179	201	0.181	246	0.561	291	0.957	336	0.927
22	0.925	67	0.957	112	0.574	157	0.179	202	0.179	247	0.571	292	0.963	337	0.925
23	0.926	68	0.952	113	0.565	158	0.180	203	0.178	248	0.580	293	0.968	338	0.922
24	0.928	69	0.946	114	0.555	159	0.182	204	0.178	249	0.590	294	0.972	339	0.920
25	0.930	70	0.940	115	0.546	160	0.184	205	0.178	250	0.599	295	0.977	340	0.918
26	0.932	71	0.934	116	0.536	161	0.187	206	0.180	251	0.608	296	0.981	341	0.916
27	0.935	72	0.927	117	0.527	162	0.190	207	0.182	252	0.617	297	0.984	342	0.914
28	0.937	73	0.920	118	0.517	163	0.194	208	0.185	253	0.626	298	0.987	343	0.912
29	0.940	74	0.913	119	0.507	164	0.198	209	0.189	254	0.635	299	0.990	344	0.910
30	0.942	75	0.906	120	0.497	165	0.202	210	0.194	255	0.644	300	0.993	345	0.908
31	0.945	76	0.898	121	0.487	166	0.207	211	0.200	256	0.653	301	0.995	346	0.907
32	0.948	77	0.890	122	0.477	167	0.211	212	0.206	257	0.662	302	0.996	347	0.905
33	0.951	78	0.882	123	0.467	168	0.216	213	0.214	258	0.671	303	0.998	348	0.904
34	0.954	79	0.874	124	0.457	169	0.221	214	0.221	259	0.680	304	0.999	349	0.903
35	0.958	80	0.865	125	0.446	170	0.226	215	0.229	260	0.688	305	1.000	350	0.901
36	0.961	81	0.857	126	0.436	171	0.231	216	0.238	261	0.697	306	1.000	351	0.900
37	0.964	82	0.848	127	0.425	172	0.235	217	0.248	262	0.706	307	1.000	352	0.899
38	0.967	83	0.839	128	0.414	173	0.240	218	0.257	263	0.715	308	1.000	353	0.899
39	0.971	84	0.830	129	0.403	174	0.244	219	0.267	264	0.724	309	0.999	354	0.898
40	0.974	85	0.821	130	0.392	175	0.247	220	0.278	265	0.733	310	0.998	355	0.897
41	0.977	86	0.812	131	0.381	176	0.250	221	0.289	266	0.742	311	0.997	356	0.897
42	0.980	87	0.803	132	0.370	177	0.253	222	0.300	267	0.751	312	0.996	357	0.896
43	0.983	88	0.794	133	0.358	178	0.255	223	0.311	268	0.760	313	0.994	358	0.896
44	0.985	89	0.784	134	0.347	179	0.256	224	0.322	269	0.769	314	0.992	359	0.896