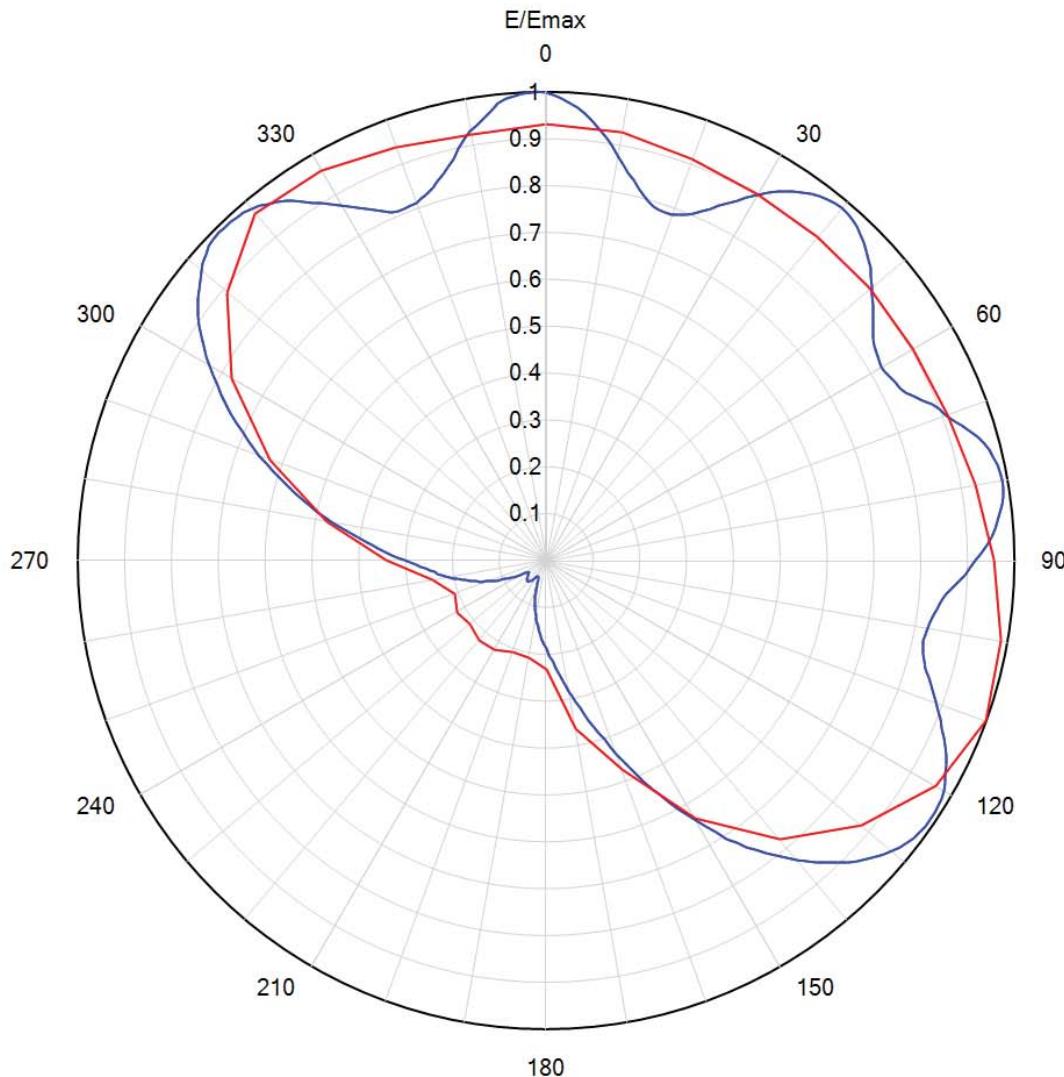




Azimuth Pattern



Model: PEPL42C

Polarisation: Horizontal

Location: Houston Missouri City

Frequency: 587.00 MHz

Customer: American Tower

Directivity: 1.9 (2.83 dB)

Date: June 9, 2017

Elevation Angle: 0.75 degrees

Rotation Angle: 40 degrees

Horizontal Unit Pattern:

Note: Pattern Tolerance +/-5% of Emax

File = Dallas PEP4-CH33H.pat



Model: **PEPL42C**
 Location: **Houston Missouri City**
 Customer: **American Tower**
 Date: **June 9, 2017**

Polarization: **Horizontal**
 Frequency (MHz): **587.00**
 Directivity: **1.9 (2.83 dB)**
 Elevation Angle: **0.75 degrees**
 Rotation Angle: **40 degrees**



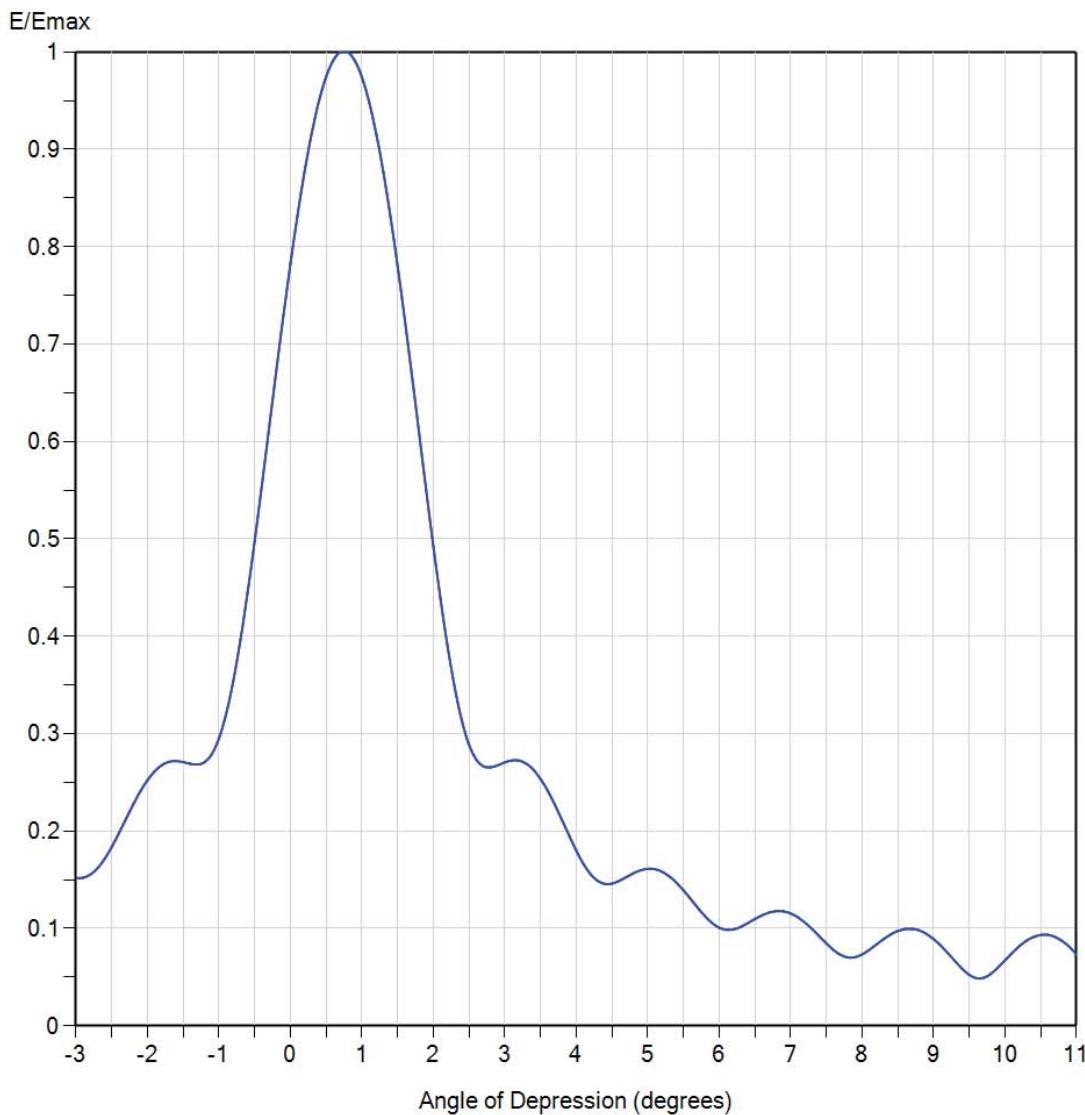
TABULATED AZIMUTH PATTERN

Angl	Field																
0	0.998	45	0.958	90	0.917	135	0.910	180	0.188	225	0.058	270	0.302	315	0.989		
1	0.993	46	0.951	91	0.906	136	0.897	181	0.182	226	0.056	271	0.316	316	0.988		
2	0.986	47	0.941	92	0.895	137	0.882	182	0.175	227	0.054	272	0.330	317	0.987		
3	0.977	48	0.932	93	0.881	138	0.867	183	0.170	228	0.053	273	0.344	318	0.986		
4	0.968	49	0.920	94	0.868	139	0.851	184	0.163	229	0.052	274	0.358	319	0.984		
5	0.957	50	0.909	95	0.854	140	0.834	185	0.155	230	0.051	275	0.372	320	0.979		
6	0.944	51	0.896	96	0.848	141	0.817	186	0.148	231	0.050	276	0.388	321	0.973		
7	0.928	52	0.885	97	0.841	142	0.799	187	0.143	232	0.048	277	0.405	322	0.965		
8	0.913	53	0.874	98	0.835	143	0.781	188	0.137	233	0.046	278	0.425	323	0.957		
9	0.897	54	0.862	99	0.830	144	0.763	189	0.130	234	0.044	279	0.444	324	0.948		
10	0.878	55	0.852	100	0.827	145	0.747	190	0.123	235	0.044	280	0.462	325	0.935		
11	0.859	56	0.843	101	0.825	146	0.728	191	0.117	236	0.045	281	0.481	326	0.923		
12	0.845	57	0.837	102	0.824	147	0.708	192	0.110	237	0.047	282	0.498	327	0.910		
13	0.833	58	0.833	103	0.826	148	0.684	193	0.103	238	0.049	283	0.517	328	0.899		
14	0.820	59	0.828	104	0.829	149	0.663	194	0.098	239	0.054	284	0.535	329	0.887		
15	0.806	60	0.827	105	0.835	150	0.641	195	0.091	240	0.058	285	0.556	330	0.876		
16	0.795	61	0.828	106	0.843	151	0.621	196	0.086	241	0.065	286	0.575	331	0.863		
17	0.789	62	0.832	107	0.854	152	0.599	197	0.078	242	0.072	287	0.594	332	0.852		
18	0.786	63	0.837	108	0.864	153	0.579	198	0.071	243	0.079	288	0.613	333	0.841		
19	0.784	64	0.841	109	0.874	154	0.558	199	0.063	244	0.085	289	0.632	334	0.831		
20	0.786	65	0.849	110	0.886	155	0.538	200	0.056	245	0.091	290	0.650	335	0.821		
21	0.789	66	0.860	111	0.897	156	0.518	201	0.051	246	0.099	291	0.669	336	0.813		
22	0.796	67	0.875	112	0.909	157	0.498	202	0.046	247	0.107	292	0.687	337	0.810		
23	0.805	68	0.889	113	0.919	158	0.478	203	0.042	248	0.114	293	0.706	338	0.809		
24	0.817	69	0.899	114	0.930	159	0.460	204	0.040	249	0.122	294	0.724	339	0.810		
25	0.829	70	0.908	115	0.941	160	0.440	205	0.038	250	0.130	295	0.743	340	0.811		
26	0.842	71	0.920	116	0.950	161	0.421	206	0.037	251	0.139	296	0.761	341	0.816		
27	0.855	72	0.933	117	0.959	162	0.402	207	0.037	252	0.147	297	0.777	342	0.822		
28	0.870	73	0.947	118	0.966	163	0.386	208	0.037	253	0.153	298	0.795	343	0.831		
29	0.885	74	0.958	119	0.974	164	0.370	209	0.039	254	0.160	299	0.813	344	0.841		
30	0.900	75	0.967	120	0.980	165	0.353	210	0.041	255	0.167	300	0.831	345	0.852		
31	0.916	76	0.975	121	0.986	166	0.337	211	0.042	256	0.176	301	0.846	346	0.865		
32	0.929	77	0.980	122	0.988	167	0.322	212	0.044	257	0.183	302	0.862	347	0.880		
33	0.940	78	0.984	123	0.989	168	0.308	213	0.045	258	0.192	303	0.877	348	0.899		
34	0.949	79	0.987	124	0.989	169	0.296	214	0.048	259	0.201	304	0.893	349	0.915		
35	0.958	80	0.988	125	0.988	170	0.284	215	0.051	260	0.209	305	0.906	350	0.931		
36	0.966	81	0.989	126	0.986	171	0.273	216	0.054	261	0.216	306	0.919	351	0.941		
37	0.973	82	0.987	127	0.983	172	0.260	217	0.055	262	0.225	307	0.931	352	0.953		
38	0.978	83	0.982	128	0.978	173	0.248	218	0.056	263	0.233	308	0.941	353	0.967		
39	0.980	84	0.975	129	0.972	174	0.237	219	0.057	264	0.239	309	0.951	354	0.980		
40	0.981	85	0.969	130	0.963	175	0.227	220	0.059	265	0.247	310	0.961	355	0.988		
41	0.980	86	0.962	131	0.955	176	0.218	221	0.059	266	0.257	311	0.970	356	0.994		
42	0.979	87	0.952	132	0.946	177	0.210	222	0.061	267	0.268	312	0.978	357	0.997		
43	0.973	88	0.943	133	0.935	178	0.202	223	0.059	268	0.278	313	0.984	358	1.000		
44	0.967	89	0.930	134	0.923	179	0.195	224	0.060	269	0.290	314	0.988	359	1.000		

TV & RADIO | IN-BUILDING | WIRELESS | IN-TUNNEL | HF & DEFENSE | MICROWAVE | MOBILE RADIO



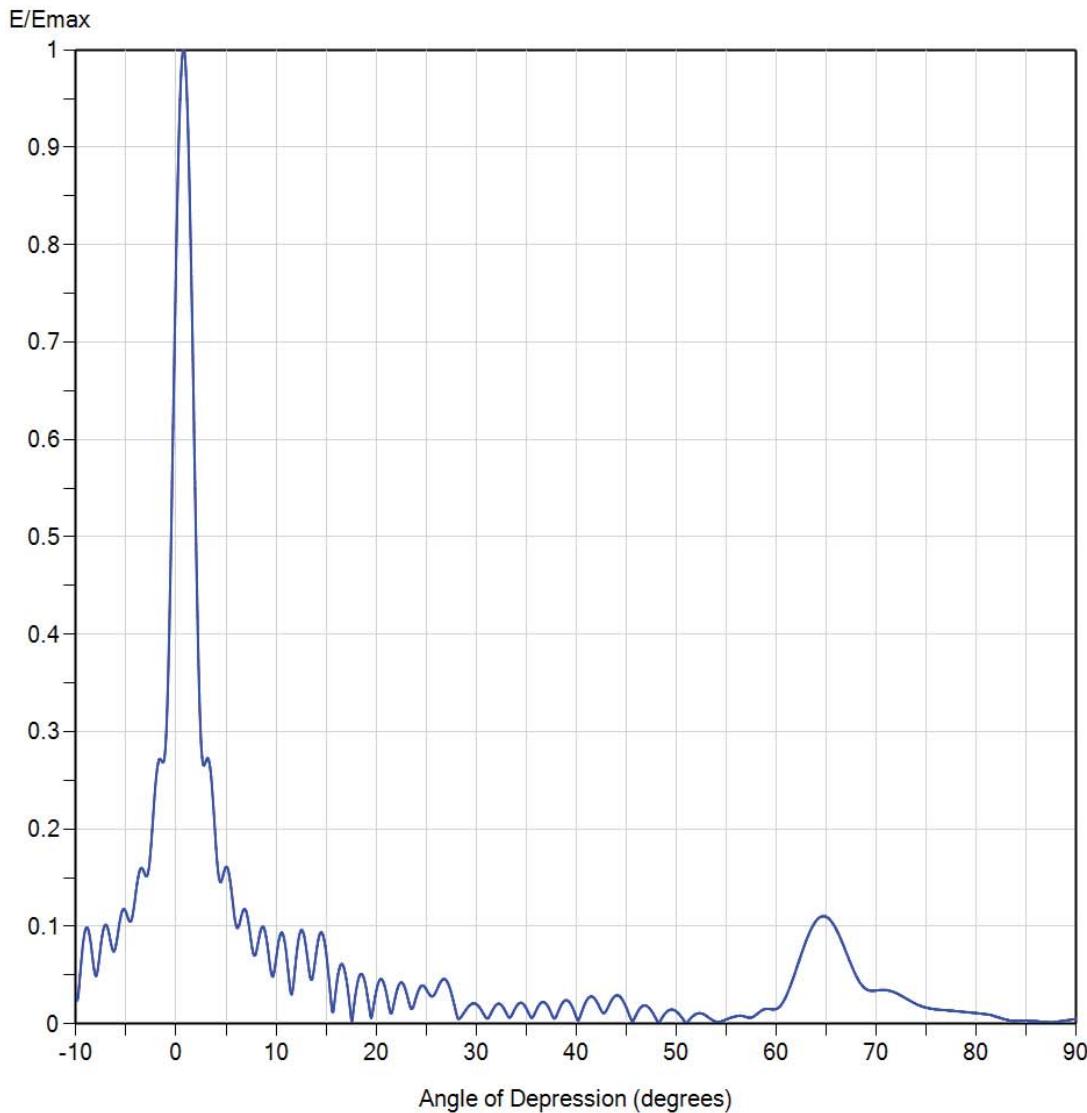
Elevation Pattern



Model:	PEPL42C	Frequency:	587.00 MHz
Polarisation:	<u>Horizontal</u>	Directivity (Main Lobe):	29.6 (14.72 dBi)
Location:	Houston Missouri City	Directivity (At Horizon):	18.2 (12.59 dBi)
Customer:	American Tower	Beam Tilt:	0.75 degrees
Date:	June 9, 2017	Azimuth Angle:	359 degrees



Elevation Pattern



Model:	PEPL42C	Frequency:	587.00 MHz
Polarisation:	<u>Horizontal</u>	Directivity (Main Lobe):	29.6 (14.72 dBd)
Location:	Houston Missouri City	Directivity (At Horizon):	18.2 (12.59 dBd)
Customer:	American Tower	Beam Tilt:	0.75 degrees
Date:	June 9, 2017	Azimuth Angle:	359 degrees



Model: **PEPL42C**
 Location: **Houston Missouri City**
 Customer: **American Tower**
 Date: **June 9, 2017**

Polarization: **Horizontal**
 Frequency (MHz): **587.00**
 Directivity (Main Lobe): **29.6 (14.72 dB)**
 Directivity (At Horizon): **18.2 (12.59 dB)**
 Beam Tilt: **0.75 degrees**

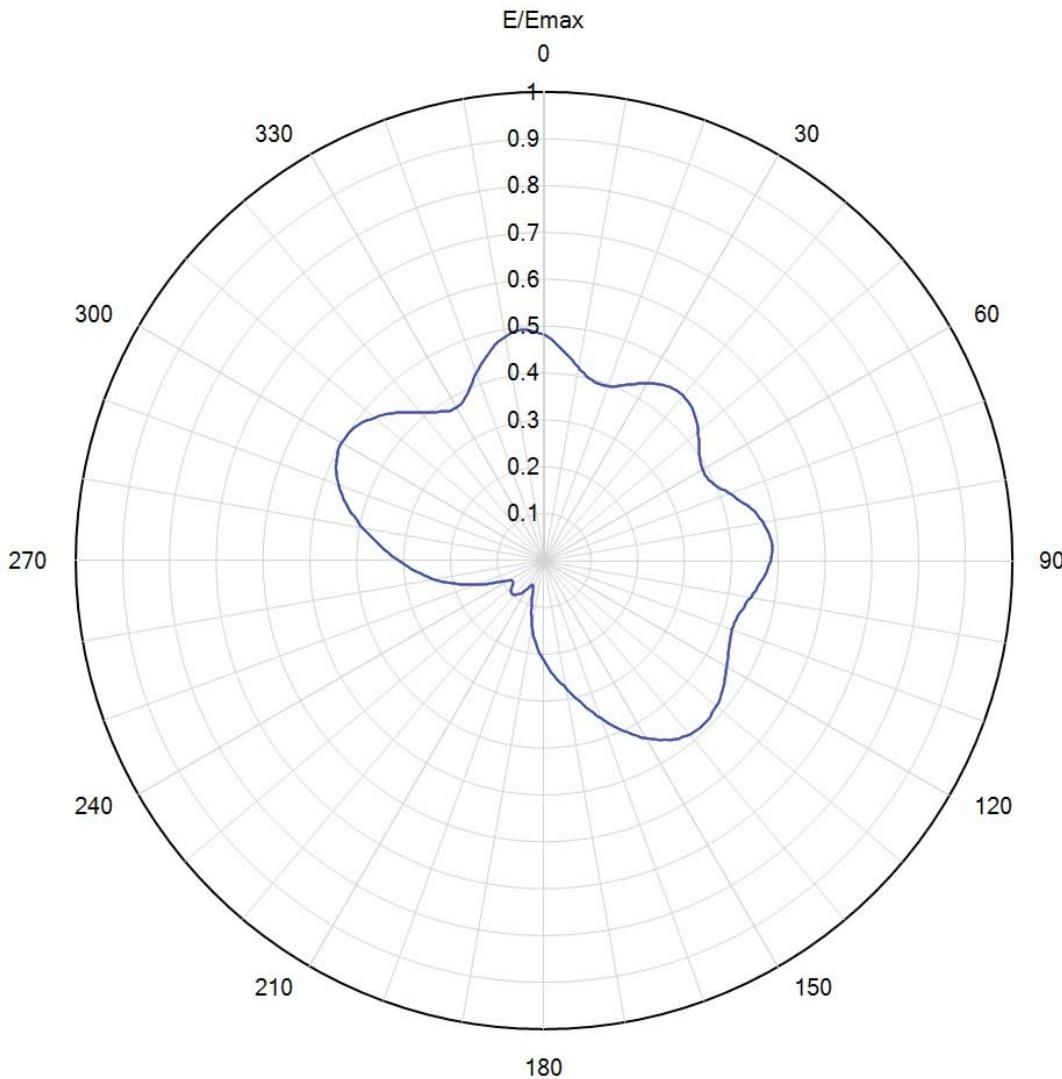


TABULATED ELEVATION PATTERN

Angle	Field										
-10.0	0.031	2.4	0.313	10.6	0.093	30.5	0.014	51.0	0.001	71.5	0.033
-9.5	0.062	2.6	0.273	10.8	0.087	31.0	0.006	51.5	0.006	72.0	0.031
-9.0	0.098	2.8	0.265	11.0	0.073	31.5	0.011	52.0	0.010	72.5	0.029
-8.5	0.080	3.0	0.271	11.5	0.031	32.0	0.019	52.5	0.011	73.0	0.026
-8.0	0.049	3.2	0.272	12.0	0.068	32.5	0.019	53.0	0.008	73.5	0.023
-7.5	0.083	3.4	0.263	12.5	0.096	33.0	0.011	53.5	0.005	74.0	0.020
-7.0	0.102	3.6	0.241	13.0	0.078	33.5	0.008	54.0	0.002	74.5	0.018
-6.5	0.082	3.8	0.211	13.5	0.045	34.0	0.018	54.5	0.002	75.0	0.017
-6.0	0.081	4.0	0.180	14.0	0.073	34.5	0.022	55.0	0.005	75.5	0.016
-5.5	0.112	4.2	0.156	14.5	0.094	35.0	0.016	55.5	0.006	76.0	0.015
-5.0	0.114	4.4	0.146	15.0	0.073	35.5	0.006	56.0	0.008	76.5	0.014
-4.5	0.106	4.6	0.149	15.5	0.022	36.0	0.014	56.5	0.008	77.0	0.014
-4.0	0.137	4.8	0.157	16.0	0.037	36.5	0.022	57.0	0.007	77.5	0.014
-3.5	0.160	5.0	0.161	16.5	0.061	37.0	0.020	57.5	0.006	78.0	0.013
-3.0	0.152	5.2	0.158	17.0	0.047	37.5	0.011	58.0	0.010	78.5	0.013
-2.8	0.155	5.4	0.147	17.5	0.006	38.0	0.008	58.5	0.013	79.0	0.012
-2.6	0.172	5.6	0.130	18.0	0.035	38.5	0.019	59.0	0.015	79.5	0.012
-2.4	0.198	5.8	0.113	18.5	0.051	39.0	0.024	59.5	0.015	80.0	0.011
-2.2	0.227	6.0	0.101	19.0	0.036	39.5	0.019	60.0	0.015	80.5	0.010
-2.0	0.252	6.2	0.099	19.5	0.006	40.0	0.007	60.5	0.020	81.0	0.010
-1.8	0.268	6.4	0.105	20.0	0.034	40.5	0.011	61.0	0.029	81.5	0.009
-1.6	0.272	6.6	0.114	20.5	0.046	41.0	0.023	61.5	0.042	82.0	0.007
-1.4	0.269	6.8	0.118	21.0	0.032	41.5	0.028	62.0	0.056	82.5	0.006
-1.2	0.271	7.0	0.115	21.5	0.010	42.0	0.024	62.5	0.072	83.0	0.004
-1.0	0.295	7.2	0.106	22.0	0.031	42.5	0.014	63.0	0.086	83.5	0.003
-0.8	0.354	7.4	0.092	22.5	0.043	43.0	0.013	63.5	0.098	84.0	0.003
-0.6	0.445	7.6	0.078	23.0	0.033	43.5	0.024	64.0	0.106	84.5	0.004
-0.4	0.555	7.8	0.070	23.5	0.016	44.0	0.029	64.5	0.110	85.0	0.003
-0.2	0.672	8.0	0.073	24.0	0.027	44.5	0.026	65.0	0.110	85.5	0.003
0.0	0.783	8.2	0.083	24.5	0.039	45.0	0.017	65.5	0.105	86.0	0.003
0.2	0.878	8.4	0.094	25.0	0.036	45.5	0.004	66.0	0.097	86.5	0.002
0.4	0.950	8.6	0.099	25.5	0.028	46.0	0.010	66.5	0.086	87.0	0.002
0.6	0.992	8.8	0.098	26.0	0.033	46.5	0.017	67.0	0.073	87.5	0.001
0.8	1.000	9.0	0.089	26.5	0.044	47.0	0.019	67.5	0.060	88.0	0.002
1.0	0.974	9.2	0.075	27.0	0.045	47.5	0.014	68.0	0.049	88.5	0.003
1.2	0.916	9.4	0.059	27.5	0.032	48.0	0.005	68.5	0.040	89.0	0.004
1.4	0.831	9.6	0.049	28.0	0.011	48.5	0.005	69.0	0.035	89.5	0.004
1.6	0.725	9.8	0.053	28.5	0.007	49.0	0.012	69.5	0.034	90.0	0.000
1.8	0.609	10.0	0.067	29.0	0.015	49.5	0.015	70.0	0.034		
2.0	0.492	10.2	0.082	29.5	0.020	50.0	0.013	70.5	0.035		
2.2	0.389	10.4	0.091	30.0	0.020	50.5	0.007	71.0	0.035		



Azimuth Pattern



Model: PEPL42C

Polarisation: Vertical

Location: Houston Missouri City

Frequency: 587.00 MHz

Customer: American Tower

Directivity: 1.7 (2.35 dB)

Date: June 9, 2017

Elevation Angle: 0.75 degrees

Rotation Angle: 40 degrees

Horizontal Unit Pattern:

Note: Pattern Tolerance +/-5% of Emax

File = Dallas PEP4-CH33V.pat



Model: **PEPL42C**
 Location: **Houston Missouri City**
 Customer: **American Tower**
 Date: **June 9, 2017**

Polarization: **Vertical**
 Frequency (MHz): **587.00**
 Directivity: **1.7 (2.35 dB)**
 Elevation Angle: **0.75 degrees**
 Rotation Angle: **40 degrees**

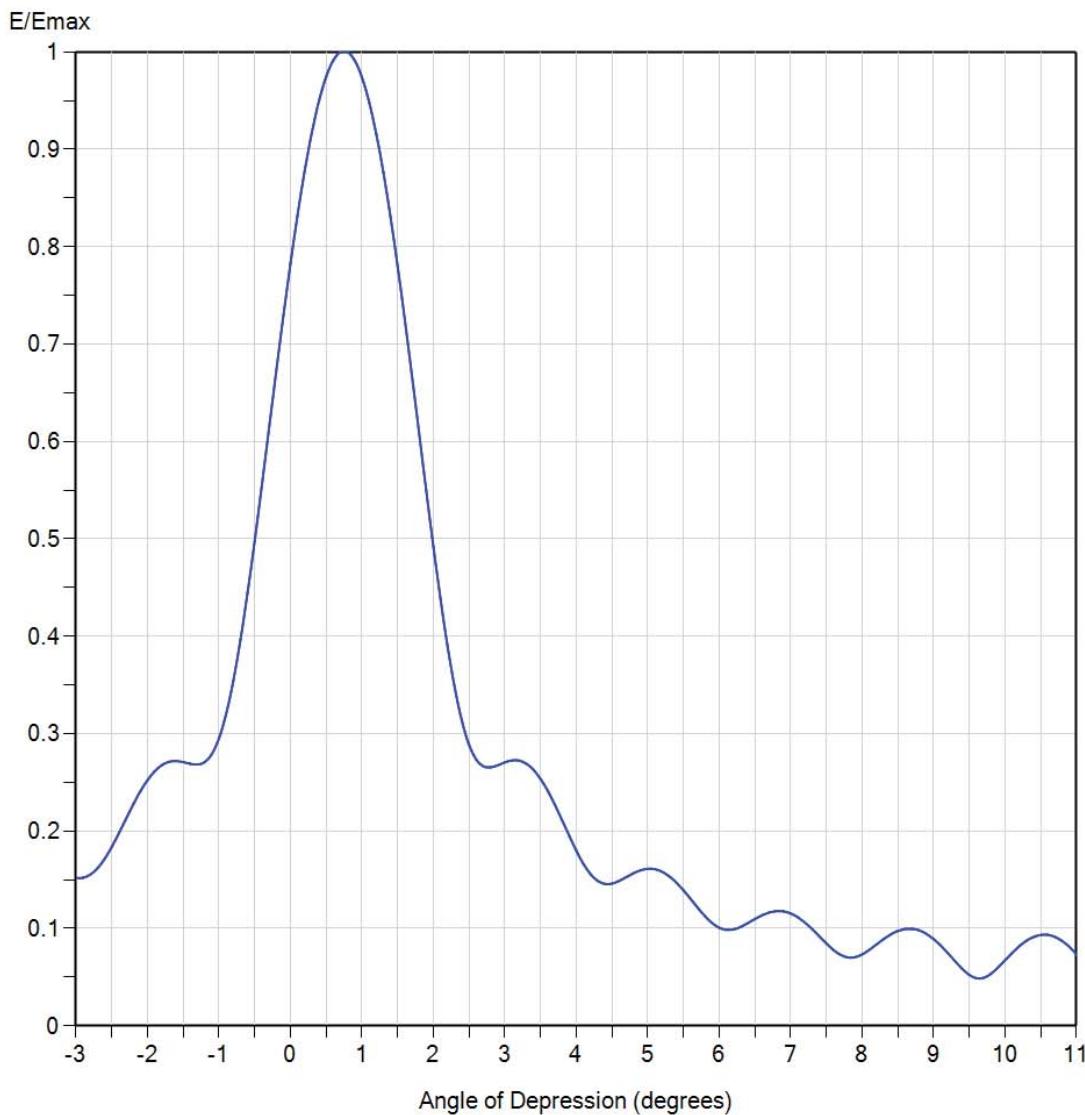


TABULATED AZIMUTH PATTERN

Angl	Field																
0	0.963	45	0.903	90	0.968	135	0.977	180	0.428	225	0.195	270	0.623	315	0.891		
1	0.954	46	0.894	91	0.962	136	0.975	181	0.415	226	0.195	271	0.637	316	0.877		
2	0.944	47	0.887	92	0.956	137	0.976	182	0.404	227	0.192	272	0.653	317	0.864		
3	0.931	48	0.877	93	0.949	138	0.974	183	0.392	228	0.189	273	0.669	318	0.850		
4	0.919	49	0.869	94	0.943	139	0.973	184	0.378	229	0.184	274	0.685	319	0.839		
5	0.905	50	0.857	95	0.934	140	0.967	185	0.362	230	0.181	275	0.698	320	0.823		
6	0.892	51	0.848	96	0.927	141	0.964	186	0.348	231	0.176	276	0.715	321	0.812		
7	0.878	52	0.838	97	0.917	142	0.957	187	0.334	232	0.172	277	0.730	322	0.799		
8	0.865	53	0.830	98	0.912	143	0.953	188	0.322	233	0.166	278	0.751	323	0.790		
9	0.852	54	0.821	99	0.904	144	0.944	189	0.307	234	0.163	279	0.768	324	0.781		
10	0.840	55	0.811	100	0.897	145	0.935	190	0.290	235	0.161	280	0.786	325	0.774		
11	0.827	56	0.802	101	0.888	146	0.923	191	0.273	236	0.161	281	0.799	326	0.765		
12	0.816	57	0.793	102	0.882	147	0.913	192	0.256	237	0.161	282	0.816	327	0.758		
13	0.808	58	0.787	103	0.877	148	0.901	193	0.242	238	0.162	283	0.834	328	0.753		
14	0.801	59	0.783	104	0.871	149	0.890	194	0.226	239	0.165	284	0.851	329	0.753		
15	0.796	60	0.781	105	0.866	150	0.878	195	0.210	240	0.171	285	0.866	330	0.754		
16	0.790	61	0.780	106	0.860	151	0.866	196	0.195	241	0.177	286	0.878	331	0.755		
17	0.788	62	0.777	107	0.859	152	0.849	197	0.181	242	0.186	287	0.893	332	0.755		
18	0.788	63	0.780	108	0.855	153	0.834	198	0.165	243	0.197	288	0.907	333	0.762		
19	0.790	64	0.783	109	0.856	154	0.817	199	0.151	244	0.211	289	0.922	334	0.770		
20	0.792	65	0.790	110	0.855	155	0.802	200	0.138	245	0.226	290	0.932	335	0.781		
21	0.796	66	0.797	111	0.857	156	0.786	201	0.134	246	0.239	291	0.942	336	0.793		
22	0.801	67	0.807	112	0.859	157	0.771	202	0.126	247	0.254	292	0.953	337	0.805		
23	0.810	68	0.816	113	0.864	158	0.753	203	0.119	248	0.269	293	0.965	338	0.818		
24	0.818	69	0.829	114	0.868	159	0.737	204	0.113	249	0.286	294	0.974	339	0.835		
25	0.826	70	0.839	115	0.872	160	0.716	205	0.113	250	0.302	295	0.980	340	0.849		
26	0.833	71	0.853	116	0.875	161	0.700	206	0.116	251	0.319	296	0.984	341	0.864		
27	0.844	72	0.861	117	0.881	162	0.682	207	0.120	252	0.337	297	0.990	342	0.876		
28	0.856	73	0.875	118	0.888	163	0.669	208	0.124	253	0.356	298	0.996	343	0.890		
29	0.865	74	0.888	119	0.895	164	0.652	209	0.130	254	0.372	299	0.999	344	0.902		
30	0.873	75	0.902	120	0.900	165	0.637	210	0.136	255	0.388	300	1.000	345	0.915		
31	0.881	76	0.913	121	0.907	166	0.620	211	0.144	256	0.404	301	1.000	346	0.929		
32	0.891	77	0.922	122	0.915	167	0.605	212	0.151	257	0.423	302	1.000	347	0.941		
33	0.898	78	0.932	123	0.922	168	0.589	213	0.158	258	0.438	303	0.996	348	0.953		
34	0.904	79	0.939	124	0.928	169	0.572	214	0.167	259	0.454	304	0.992	349	0.960		
35	0.908	80	0.947	125	0.935	170	0.558	215	0.173	260	0.470	305	0.988	350	0.968		
36	0.914	81	0.953	126	0.942	171	0.543	216	0.178	261	0.485	306	0.983	351	0.974		
37	0.918	82	0.962	127	0.949	172	0.531	217	0.182	262	0.501	307	0.976	352	0.981		
38	0.921	83	0.967	128	0.954	173	0.518	218	0.187	263	0.515	308	0.968	353	0.985		
39	0.921	84	0.971	129	0.960	174	0.505	219	0.191	264	0.531	309	0.958	354	0.988		
40	0.921	85	0.973	130	0.963	175	0.494	220	0.195	265	0.547	310	0.947	355	0.987		
41	0.919	86	0.975	131	0.965	176	0.481	221	0.197	266	0.563	311	0.937	356	0.986		
42	0.915	87	0.975	132	0.968	177	0.468	222	0.198	267	0.577	312	0.926	357	0.981		
43	0.913	88	0.974	133	0.973	178	0.456	223	0.197	268	0.593	313	0.915	358	0.976		
44	0.908	89	0.970	134	0.975	179	0.442	224	0.195	269	0.608	314	0.903	359	0.969		



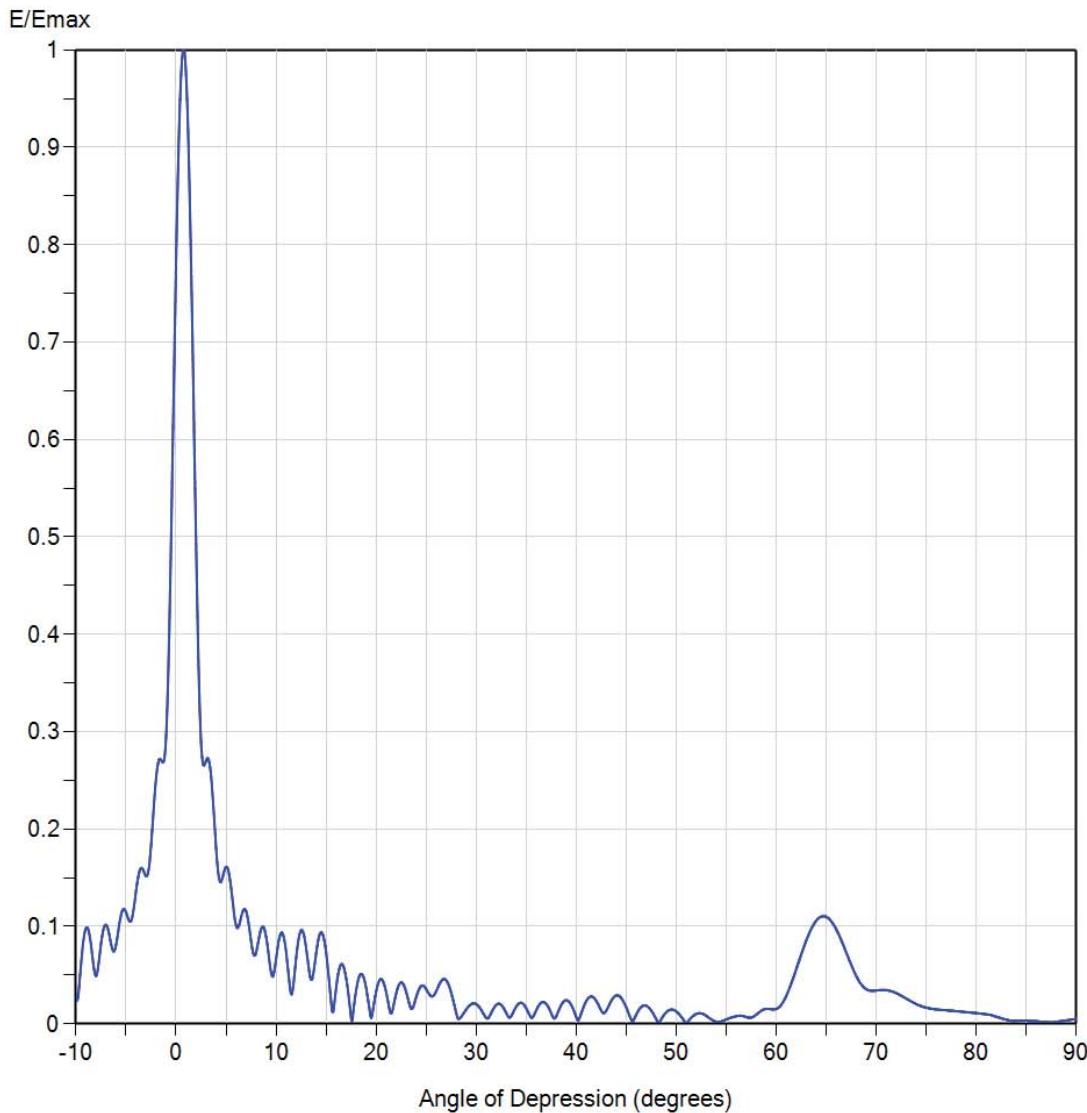
Elevation Pattern



Model:	PEPL42C	Frequency:	587.00 MHz
Polarisation:	<u>Vertical</u>	Directivity (Main Lobe):	29.6 (14.72 dBi)
Location:	Houston Missouri City	Directivity (At Horizon):	18.2 (12.59 dBi)
Customer:	American Tower	Beam Tilt:	0.75 degrees
Date:	June 9, 2017	Azimuth Angle:	300 degrees



Elevation Pattern



Model:	PEPL42C	Frequency:	587.00 MHz
Polarisation:	<u>Vertical</u>	Directivity (Main Lobe):	29.6 (14.72 dBd)
Location:	Houston Missouri City	Directivity (At Horizon):	18.2 (12.59 dBd)
Customer:	American Tower	Beam Tilt:	0.75 degrees
Date:	June 9, 2017	Azimuth Angle:	300 degrees



Model: **PEPL42C**
 Location: **Houston Missouri City**
 Customer: **American Tower**
 Date: **June 9, 2017**

Polarization: **Vertical**
 Frequency (MHz): **587.00**
 Directivity (Main Lobe): **29.6 (14.72 dB)**
 Directivity (At Horizon): **18.2 (12.59 dB)**
 Beam Tilt: **0.75 degrees**



TABULATED ELEVATION PATTERN

Angle	Field										
-10.0	0.031	2.4	0.313	10.6	0.093	30.5	0.014	51.0	0.001	71.5	0.033
-9.5	0.062	2.6	0.273	10.8	0.087	31.0	0.006	51.5	0.006	72.0	0.031
-9.0	0.098	2.8	0.265	11.0	0.073	31.5	0.011	52.0	0.010	72.5	0.029
-8.5	0.080	3.0	0.271	11.5	0.031	32.0	0.019	52.5	0.011	73.0	0.026
-8.0	0.049	3.2	0.272	12.0	0.068	32.5	0.019	53.0	0.008	73.5	0.023
-7.5	0.083	3.4	0.263	12.5	0.096	33.0	0.011	53.5	0.005	74.0	0.020
-7.0	0.102	3.6	0.241	13.0	0.078	33.5	0.008	54.0	0.002	74.5	0.018
-6.5	0.082	3.8	0.211	13.5	0.045	34.0	0.018	54.5	0.002	75.0	0.017
-6.0	0.081	4.0	0.180	14.0	0.073	34.5	0.022	55.0	0.005	75.5	0.016
-5.5	0.112	4.2	0.156	14.5	0.094	35.0	0.016	55.5	0.006	76.0	0.015
-5.0	0.114	4.4	0.146	15.0	0.073	35.5	0.006	56.0	0.008	76.5	0.014
-4.5	0.106	4.6	0.149	15.5	0.022	36.0	0.014	56.5	0.008	77.0	0.014
-4.0	0.137	4.8	0.157	16.0	0.037	36.5	0.022	57.0	0.007	77.5	0.014
-3.5	0.160	5.0	0.161	16.5	0.061	37.0	0.020	57.5	0.006	78.0	0.013
-3.0	0.152	5.2	0.158	17.0	0.047	37.5	0.011	58.0	0.010	78.5	0.013
-2.8	0.155	5.4	0.147	17.5	0.006	38.0	0.008	58.5	0.013	79.0	0.012
-2.6	0.172	5.6	0.130	18.0	0.035	38.5	0.019	59.0	0.015	79.5	0.012
-2.4	0.198	5.8	0.113	18.5	0.051	39.0	0.024	59.5	0.015	80.0	0.011
-2.2	0.227	6.0	0.101	19.0	0.036	39.5	0.019	60.0	0.015	80.5	0.010
-2.0	0.252	6.2	0.099	19.5	0.006	40.0	0.007	60.5	0.020	81.0	0.010
-1.8	0.268	6.4	0.105	20.0	0.034	40.5	0.011	61.0	0.029	81.5	0.009
-1.6	0.272	6.6	0.114	20.5	0.046	41.0	0.023	61.5	0.042	82.0	0.007
-1.4	0.269	6.8	0.118	21.0	0.032	41.5	0.028	62.0	0.056	82.5	0.006
-1.2	0.271	7.0	0.115	21.5	0.010	42.0	0.024	62.5	0.072	83.0	0.004
-1.0	0.295	7.2	0.106	22.0	0.031	42.5	0.014	63.0	0.086	83.5	0.003
-0.8	0.354	7.4	0.092	22.5	0.043	43.0	0.013	63.5	0.098	84.0	0.003
-0.6	0.445	7.6	0.078	23.0	0.033	43.5	0.024	64.0	0.106	84.5	0.004
-0.4	0.555	7.8	0.070	23.5	0.016	44.0	0.029	64.5	0.110	85.0	0.003
-0.2	0.672	8.0	0.073	24.0	0.027	44.5	0.026	65.0	0.110	85.5	0.003
0.0	0.783	8.2	0.083	24.5	0.039	45.0	0.017	65.5	0.105	86.0	0.003
0.2	0.878	8.4	0.094	25.0	0.036	45.5	0.004	66.0	0.097	86.5	0.002
0.4	0.950	8.6	0.099	25.5	0.028	46.0	0.010	66.5	0.086	87.0	0.002
0.6	0.992	8.8	0.098	26.0	0.033	46.5	0.017	67.0	0.073	87.5	0.001
0.8	1.000	9.0	0.089	26.5	0.044	47.0	0.019	67.5	0.060	88.0	0.002
1.0	0.974	9.2	0.075	27.0	0.045	47.5	0.014	68.0	0.049	88.5	0.003
1.2	0.916	9.4	0.059	27.5	0.032	48.0	0.005	68.5	0.040	89.0	0.004
1.4	0.831	9.6	0.049	28.0	0.011	48.5	0.005	69.0	0.035	89.5	0.004
1.6	0.725	9.8	0.053	28.5	0.007	49.0	0.012	69.5	0.034	90.0	0.000
1.8	0.609	10.0	0.067	29.0	0.015	49.5	0.015	70.0	0.034		
2.0	0.492	10.2	0.082	29.5	0.020	50.0	0.013	70.5	0.035		
2.2	0.389	10.4	0.091	30.0	0.020	50.5	0.007	71.0	0.035		