Dielectric®

Antenna Model: **DLP-12M/VP**

Reference Number:
Date: **22-Feb-24**
Customer: **3ABN**
Location: **Chico, CA**

Electrical Specifications

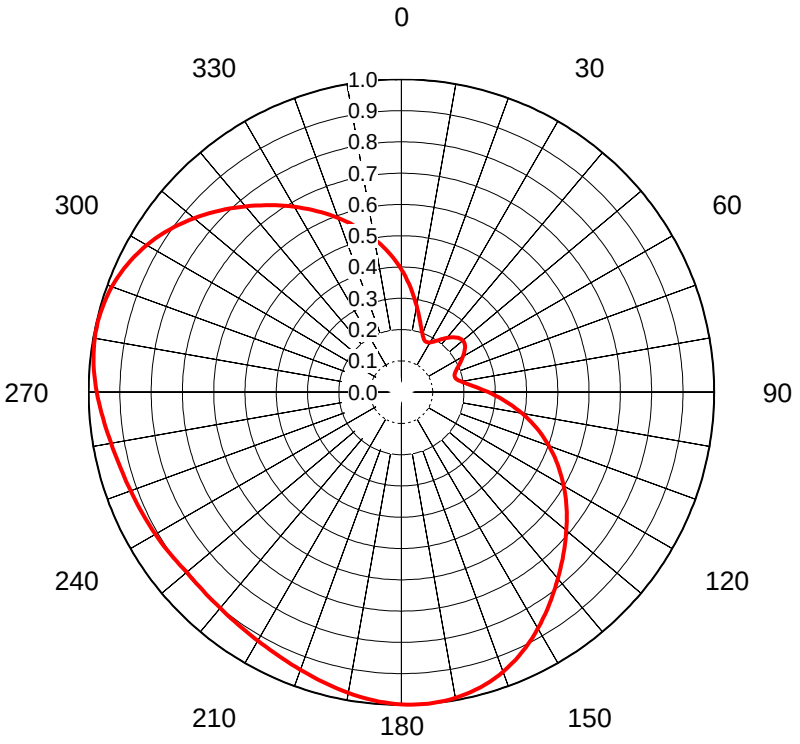
Polarization:	**Elliptical**		
Azimuth Pattern:	**M**		
Antenna Input:	**1-5/8" 50 Ohm**		
VSWR:	Channel	**1.10 : 1**	
Bandwidth:	**6 MHz**		
Rated Input Power:	**2.5 kW**	**(3.98 dBk)**	**Maximum Average Power**

Mechanical Specifications

Mounting:	**Side Mounted**			
Environmental Protection:	**Slot Cover Only**			
Height:	**22.3 ft (6.8 m)**			
Weight:	**155 lb (71 kg)**	Excludes Mounts		
Effective Projected Area:	**57.3 ft² (5.3 m²)**		Basic Wind Speed:	**90 mph (145 km/h)**

Channel Specifications

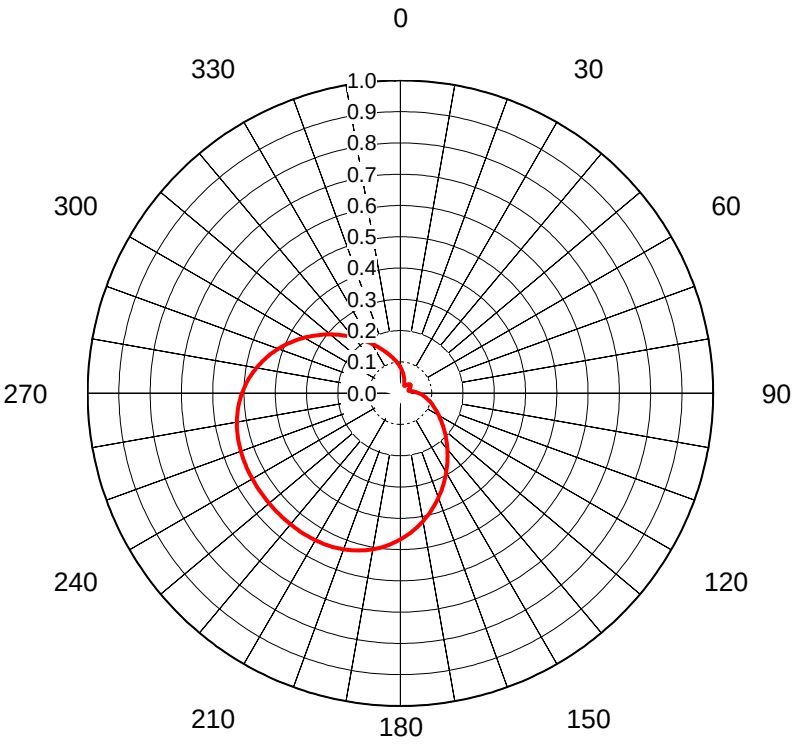
Call	Ch	Freq	Hpol ERP	Vpol ERP	TPO	Peak Gain Main Lobe Hpol	Peak Gain Main Lobe Vpol	Peak Gain at Horizontal Hpol	Peak Gain at Horizontal Vpol
K15HV	32	581	15.0 kW (11.76 dBk)	4.50 kW (6.53 dBk)	1.08 kW (0.35 dBk)	19.03 (12.79dB)	5.71 (7.57dB)	16.25 (12.11dB)	4.87 (6.88dB)



AZIMUTH PATTERN
Horizontal Polarization

Proposal No.	
Date	**22-Feb-24**
Call Letters	**K15HV**
Channel	**32**
Frequency	**581 MHz**
Antenna Type	**DLP-12M/VP**
Gain	**1.88 (2.73dB)**
	Calculated
Pattern Number	**TLP-M-32 Hpol**

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



AZIMUTH PATTERN
Vertical Polarization

Proposal No.	
Date	**22-Feb-24**
Call Letters	**K15HV**
Channel	**32**
Frequency	**581 MHz**
Antenna Type	**DLP-12M/VP**
Gain	**2.67 (4.27dB)**
	Calculated
Pattern Number	**TLP-M-32 Vpol**

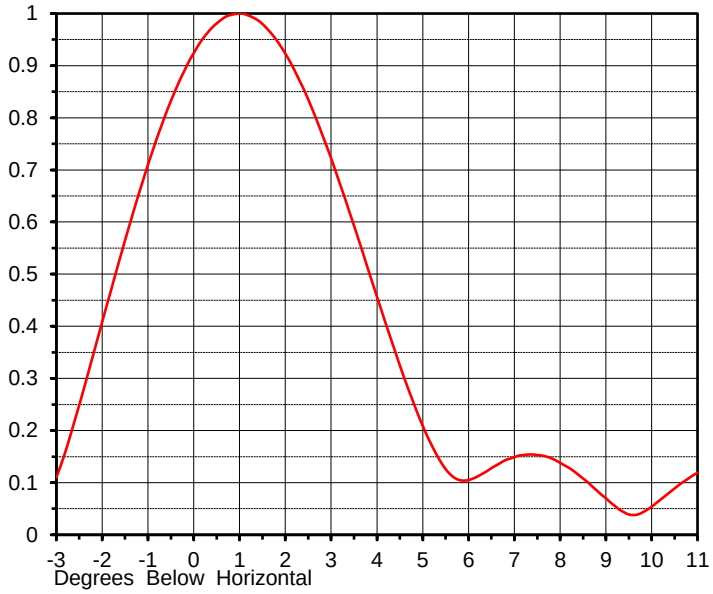
Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.083	36	0.032	72	0.027	108	0.104	144	0.257	180	0.468	216	0.546	252	0.541	288	0.426	324	0.212
1	0.080	37	0.033	73	0.027	109	0.107	145	0.263	181	0.472	217	0.546	253	0.540	289	0.421	325	0.207
2	0.078	38	0.034	74	0.028	110	0.109	146	0.268	182	0.477	218	0.547	254	0.539	290	0.415	326	0.202
3	0.076	39	0.035	75	0.029	111	0.112	147	0.274	183	0.481	219	0.547	255	0.538	291	0.409	327	0.197
4	0.073	40	0.036	76	0.030	112	0.115	148	0.281	184	0.485	220	0.547	256	0.537	292	0.403	328	0.192
5	0.071	41	0.037	77	0.031	113	0.118	149	0.287	185	0.489	221	0.547	257	0.535	293	0.398	329	0.187
6	0.068	42	0.038	78	0.032	114	0.121	150	0.293	186	0.493	222	0.547	258	0.534	294	0.392	330	0.182
7	0.066	43	0.039	79	0.034	115	0.124	151	0.299	187	0.497	223	0.547	259	0.532	295	0.386	331	0.178
8	0.063	44	0.039	80	0.036	116	0.128	152	0.305	188	0.500	224	0.548	260	0.531	296	0.379	332	0.173
9	0.061	45	0.040	81	0.038	117	0.131	153	0.311	189	0.503	225	0.548	261	0.529	297	0.373	333	0.169
10	0.058	46	0.041	82	0.040	118	0.134	154	0.318	190	0.507	226	0.548	262	0.527	298	0.367	334	0.165
11	0.056	47	0.041	83	0.042	119	0.138	155	0.324	191	0.510	227	0.548	263	0.525	299	0.361	335	0.160
12	0.053	48	0.041	84	0.044	120	0.141	156	0.330	192	0.513	228	0.548	264	0.523	300	0.355	336	0.156
13	0.051	49	0.041	85	0.046	121	0.145	157	0.337	193	0.516	229	0.548	265	0.520	301	0.348	337	0.152
14	0.049	50	0.042	86	0.049	122	0.149	158	0.343	194	0.518	230	0.548	266	0.518	302	0.342	338	0.148
15	0.046	51	0.041	87	0.051	123	0.153	159	0.349	195	0.521	231	0.548	267	0.515	303	0.336	339	0.145
16	0.044	52	0.041	88	0.054	124	0.157	160	0.355	196	0.523	232	0.548	268	0.512	304	0.330	340	0.141
17	0.042	53	0.041	89	0.056	125	0.161	161	0.362	197	0.525	233	0.548	269	0.509	305	0.323	341	0.137
18	0.040	54	0.041	90	0.058	126	0.165	162	0.368	198	0.527	234	0.548	270	0.506	306	0.317	342	0.134
19	0.038	55	0.040	91	0.061	127	0.169	163	0.374	199	0.529	235	0.548	271	0.503	307	0.311	343	0.131
20	0.036	56	0.039	92	0.063	128	0.174	164	0.380	200	0.531	236	0.547	272	0.499	308	0.305	344	0.127
21	0.034	57	0.039	93	0.066	129	0.178	165	0.386	201	0.533	237	0.547	273	0.496	309	0.298	345	0.124
22	0.032	58	0.038	94	0.068	130	0.183	166	0.392	202	0.534	238	0.547	274	0.492	310	0.292	346	0.121
23	0.031	59	0.037	95	0.071	131	0.187	167	0.398	203	0.536	239	0.547	275	0.488	311	0.286	347	0.118
24	0.030	60	0.036	96	0.073	132	0.192	168	0.404	204	0.537	240	0.547	276	0.484	312	0.280	348	0.115
25	0.028	61	0.035	97	0.076	133	0.197	169	0.410	205	0.538	241	0.547	277	0.480	313	0.274	349	0.112
26	0.028	62	0.034	98	0.078	134	0.202	170	0.416	206	0.540	242	0.546	278	0.476	314	0.268	350	0.109
27	0.027	63	0.033	99	0.081	135	0.207	171	0.421	207	0.541	243	0.546	279	0.472	315	0.262	351	0.106
28	0.027	64	0.032	100	0.083	136	0.212	172	0.427	208	0.542	244	0.546	280	0.467	316	0.256	352	0.104
29	0.027	65	0.031	101	0.086	137	0.217	173	0.432	209	0.542	245	0.545	281	0.462	317	0.250	353	0.101
30	0.027	66	0.030	102	0.088	138	0.223	174	0.438	210	0.543	246	0.545	282	0.458	318	0.245	354	0.098
31	0.028	67	0.029	103	0.091	139	0.228	175	0.443	211	0.544	247	0.545	283	0.453	319	0.239	355	0.096
32	0.028	68	0.028	104	0.093	140	0.234	176	0.448	212	0.544	248	0.544	284	0.448	320	0.233	356	0.093
33	0.029	69	0.028	105	0.096	141	0.239	177	0.453	213	0.545	249	0.543	285	0.442	321	0.228	357	0.091
34	0.030	70	0.027	106	0.098	142	0.245	178	0.458	214	0.545	250	0.543	286	0.437	322	0.222	358	0.088
35	0.031	71	0.027	107	0.101	143	0.251	179	0.463	215	0.546	251	0.542	287	0.432	323	0.217	359	0.085

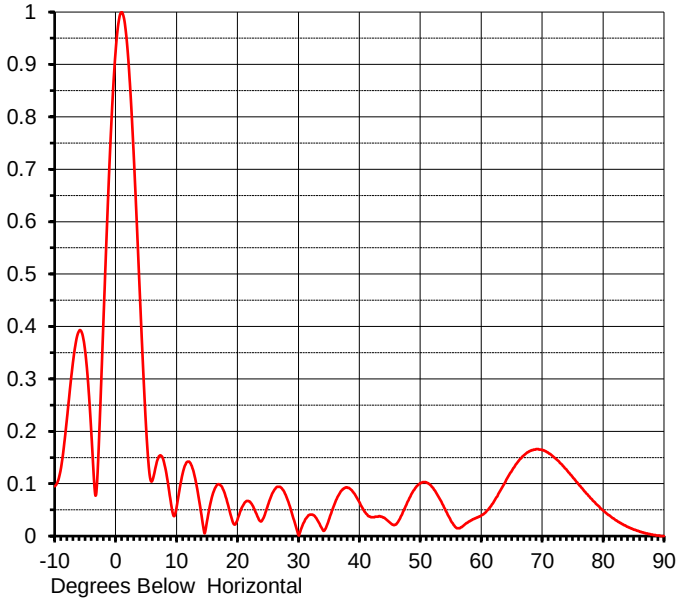
ELEVATION PATTERN

Proposal No.	
Date	**22-Feb-24**
Call Letters	**K15HV**
Channel	**32**
Frequency	**581 MHz**
Antenna Type	**DLP-12M/VP**

RMS Directivity at Main Lobe	**12.3 (10.89 dB)**	Beam Tilt	**1.00 deg**
RMS Directivity at Horizontal	**10.5 (10.21 dB)**	Pattern Number	**12L123100-32**

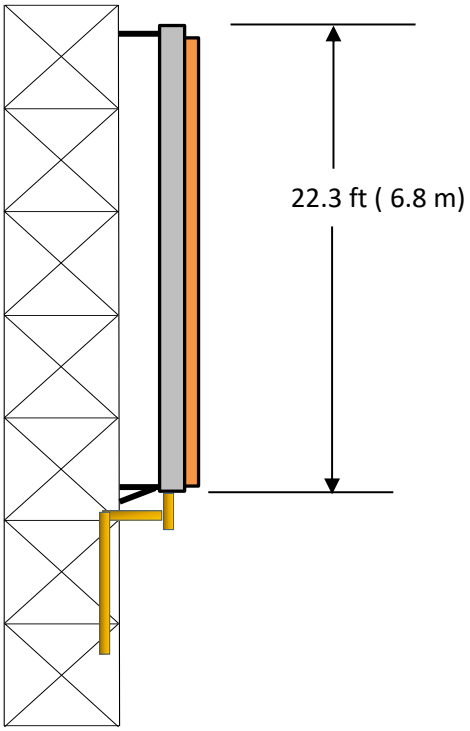
Calculated





Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.095	10.0	0.054	30.0	0.002	50.0	0.101	70.0	0.164
-9.0	0.127	11.0	0.119	31.0	0.028	51.0	0.102	71.0	0.159
-8.0	0.222	12.0	0.142	32.0	0.041	52.0	0.093	72.0	0.150
-7.0	0.331	13.0	0.113	33.0	0.033	53.0	0.075	73.0	0.139
-6.0	0.391	14.0	0.047	34.0	0.012	54.0	0.053	74.0	0.127
-5.0	0.354	15.0	0.028	35.0	0.031	55.0	0.030	75.0	0.113
-4.0	0.201	16.0	0.082	36.0	0.063	56.0	0.015	76.0	0.099
-3.0	0.110	17.0	0.099	37.0	0.086	57.0	0.019	77.0	0.085
-2.0	0.408	18.0	0.078	38.0	0.093	58.0	0.028	78.0	0.072
-1.0	0.710	19.0	0.036	39.0	0.084	59.0	0.034	79.0	0.060
0.0	0.924	20.0	0.031	40.0	0.065	60.0	0.039	80.0	0.049
1.0	1.000	21.0	0.060	41.0	0.045	61.0	0.049	81.0	0.040
2.0	0.923	22.0	0.066	42.0	0.036	62.0	0.064	82.0	0.031
3.0	0.722	23.0	0.045	43.0	0.037	63.0	0.084	83.0	0.024
4.0	0.457	24.0	0.029	44.0	0.035	64.0	0.104	84.0	0.018
5.0	0.209	25.0	0.059	45.0	0.026	65.0	0.124	85.0	0.013
6.0	0.105	26.0	0.087	46.0	0.022	66.0	0.141	86.0	0.009
7.0	0.149	27.0	0.094	47.0	0.041	67.0	0.154	87.0	0.005
8.0	0.138	28.0	0.076	48.0	0.067	68.0	0.162	88.0	0.003
9.0	0.070	29.0	0.041	49.0	0.088	69.0	0.166	89.0	0.001
								90.0	0.000

MECHANICAL SPECIFICATIONS



Proposal No.	
Date	**22-Feb-24**
Call Letters	**K15HV**
Channel	**32**
Frequency	**581 MHz**
Antenna Type	**DLP-12M/VP**

Preliminary Specifications

Side Mounted

With TIA-222-G

Basic Wind Speed	90 mph (145 km/h)
Structure Class	III
Exposure Category	B
Topography Category	1

Mechanical Specifications		**without ice**	
Height	H2	22.3 ft (6.8 m)	
Height of Center of Radiation	H3	11.2 ft (3.5 m)	
Effective Projected Area	$(EPA)_S$	57.3 ft² (5.3 m²)	mounts excluded
Weight	W	155 lb (71 kg)	mounts excluded

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA-222-G

Mechanical data is based on listed criteria and should be verified by the tower engineer.

Prepared by: JTS **Date:** 22-Feb-24

Summary

Proposal No.	
Date	**22-Feb-24**
Call Letters	**K15HV**
Channel	**32**
Frequency	**581 MHz**
Antenna Type	**DLP-12M/VP**

Antenna

	Hpol		Vpol	
ERP:	**15.0 kW**	**(11.76 dBk)**	**4.50 kW**	**(6.53 dBk)**
Peak Gain	19.03	(12.79 dBd)	5.71	(7.57 dBd)

Antenna Input Power

0.788 kW **-(1.03 dBk)**

Transmission Line

Type:	**Flexline Foam**	Attenuation:	**(1.39 dB)**
Size:	**1-5/8"**	Efficiency:	**72.7%**
Impedance:	**50 Ohm**		
Length:	**250 ft**	**76.2 m**	

Transmitter Output

1.08 kW **(0.35 dBk)**

Transmitter filter losses not included