TECHNICAL
DOCUMENTATION

Rev-1: Added Combiner dims

Fox AZ / Jim McDermaid

BROADCAST

ch 16 / 36

4x2 750 10210 BB panel array

2019.05.24 kathrein Broadcast USA mj

KATHREIN

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SIRA Member of the Kathrein Group

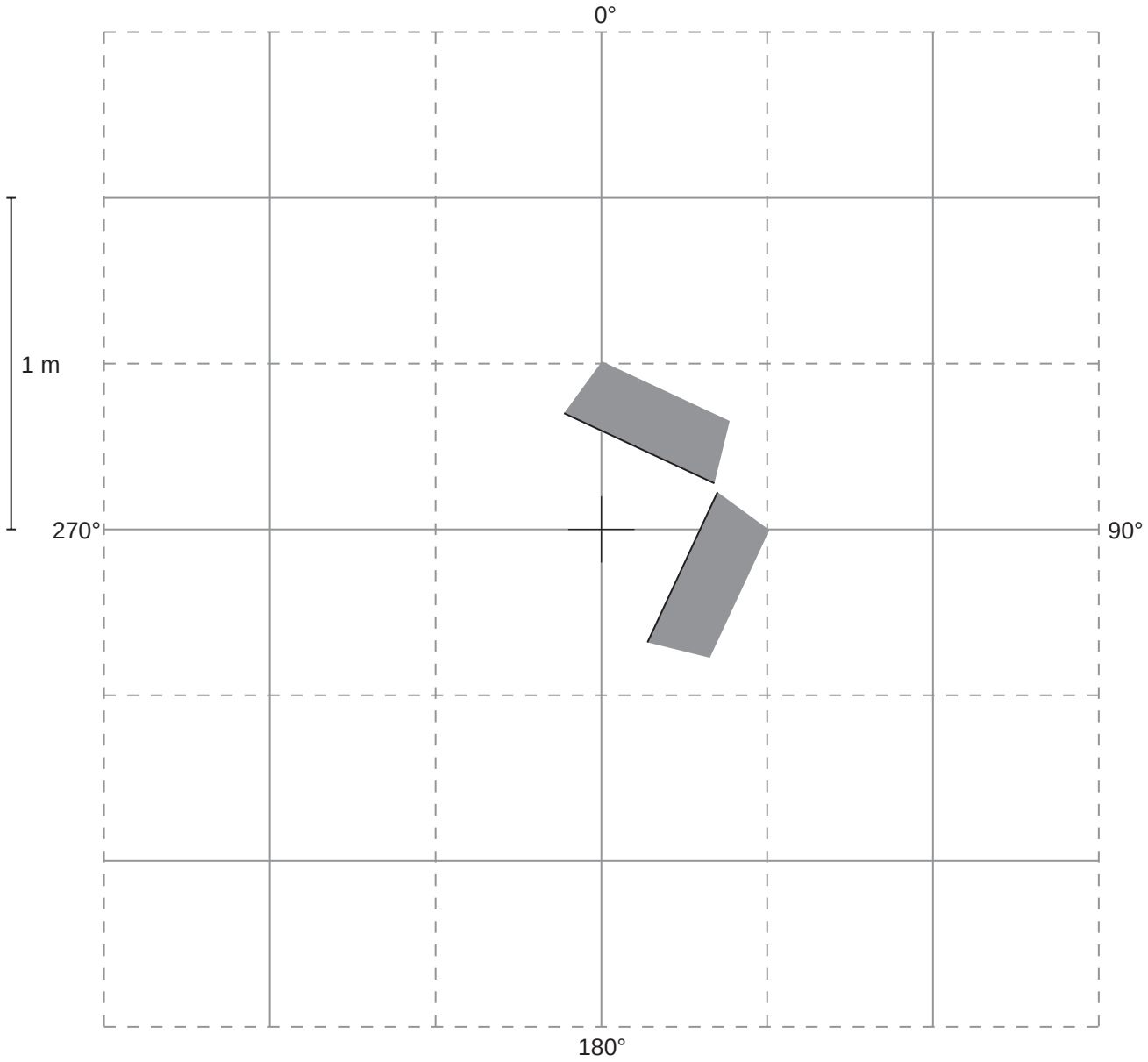
System Summary

Channel :	16	
Frequency:	485	MHz
Transmitter Power :	0.869	kW
Combiner / Filter Loss :	0.45	dB
Line Type :	LCF158-50JA (1-5/8" Foam coax copper)	
Length of Run:	100	ft
Total line loss:	0.48	dB
Max power rating of line:	7.41	kW
Antenna Gain:	13.3	dBd
Power Level @ Antenna input:	0.702	kW
ERP:	15.004	kW

System Summary

Channel :	36	
Frequency:	605	MHz
Transmitter Power :	0.786	kW
Combiner / Filter Loss :	0.45	dB
Line Type :	LCF158-50JA (1-5/8" Foam coax copper)	
Length of Run:	100	ft
Total line loss:	0.54	dB
Max power rating of line:	6.52	kW
Antenna Gain:	13.8	dBd
Power Level @ Antenna input:	0.625	kW
ERP:	15.003	kW

System Summary



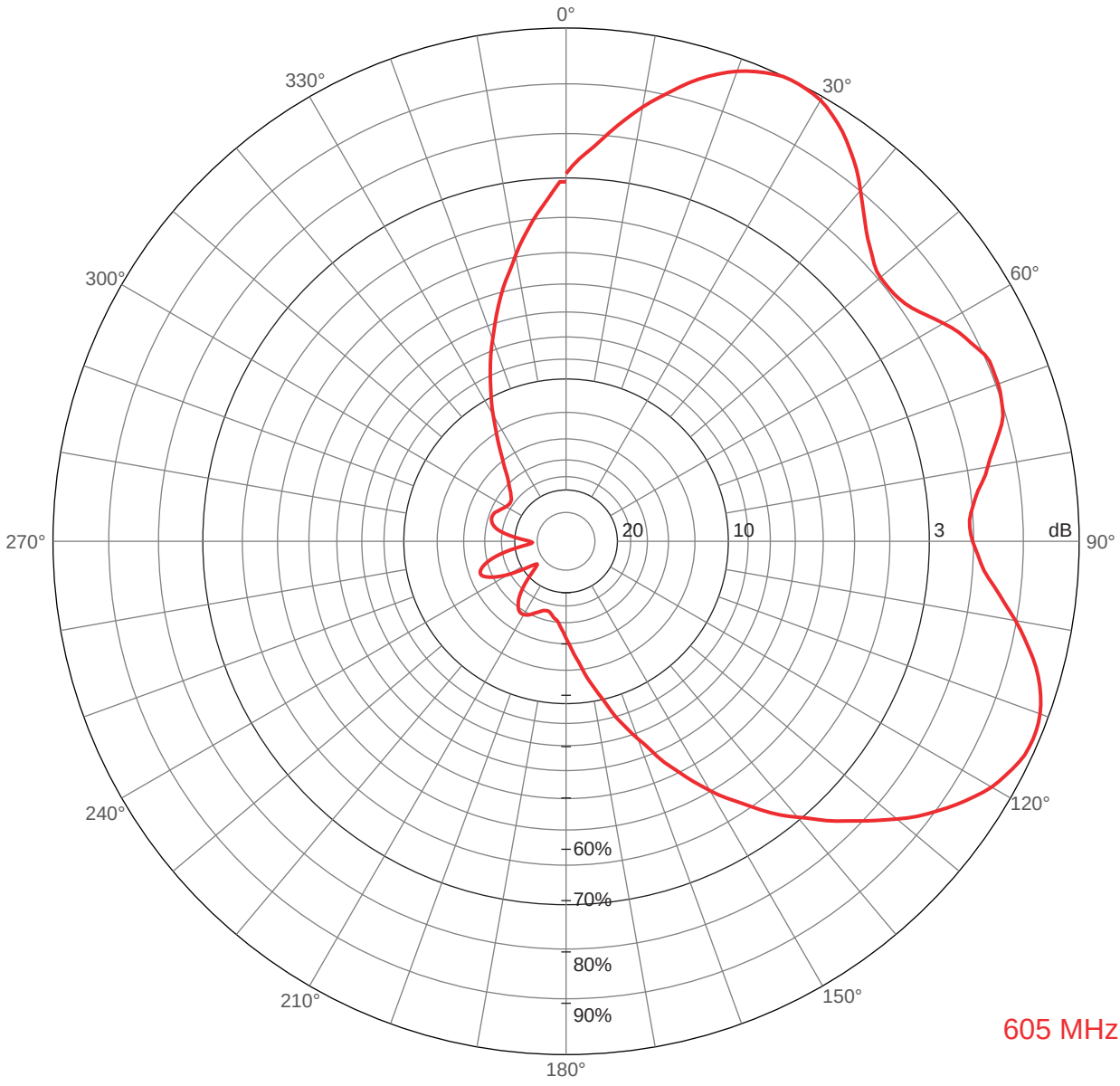
Sketch Top View, M 1 : 20

Antenna Order No.:	75010210	Frequency:	605 MHz	485 MHz
Panels per Bay:	2	Max ERP:		
Radius:	270 mm	Input Power:		
Number of Bays:	4	Total Loss:	0 dB	0 dB
Verticale Distance:	1150 mm	Gain:	13.8 dBd	13.3 dBd
Physical Aperture:	4450 mm	Efficiency:	100 %	100 %
Harness Loss:				
Transmision Line:	no			
Length:				

Subject to alternation

KATHREIN SE Anton-Kathrein-Str. 1-3 P.O. Box 10 04 44 83004 ROSENHEIM Germany Phone +49 8031 184-0 Fax +49 8031-495 www.kathrein.com

Azimuthal Pattern (polar-linear)



605 MHz

Antenna, Order No. 75010210
Panels per Bay: 2

Frequency: 605 MHz
Azimuthal Directivity: 4.5 dB
Directivity: 13.8 dBd

No.	Azimuth [°]	Radius [mm]	Offset [mm]	Power	Phase [°]
1	25	270	0	1	0
2	115	270	0	1	0

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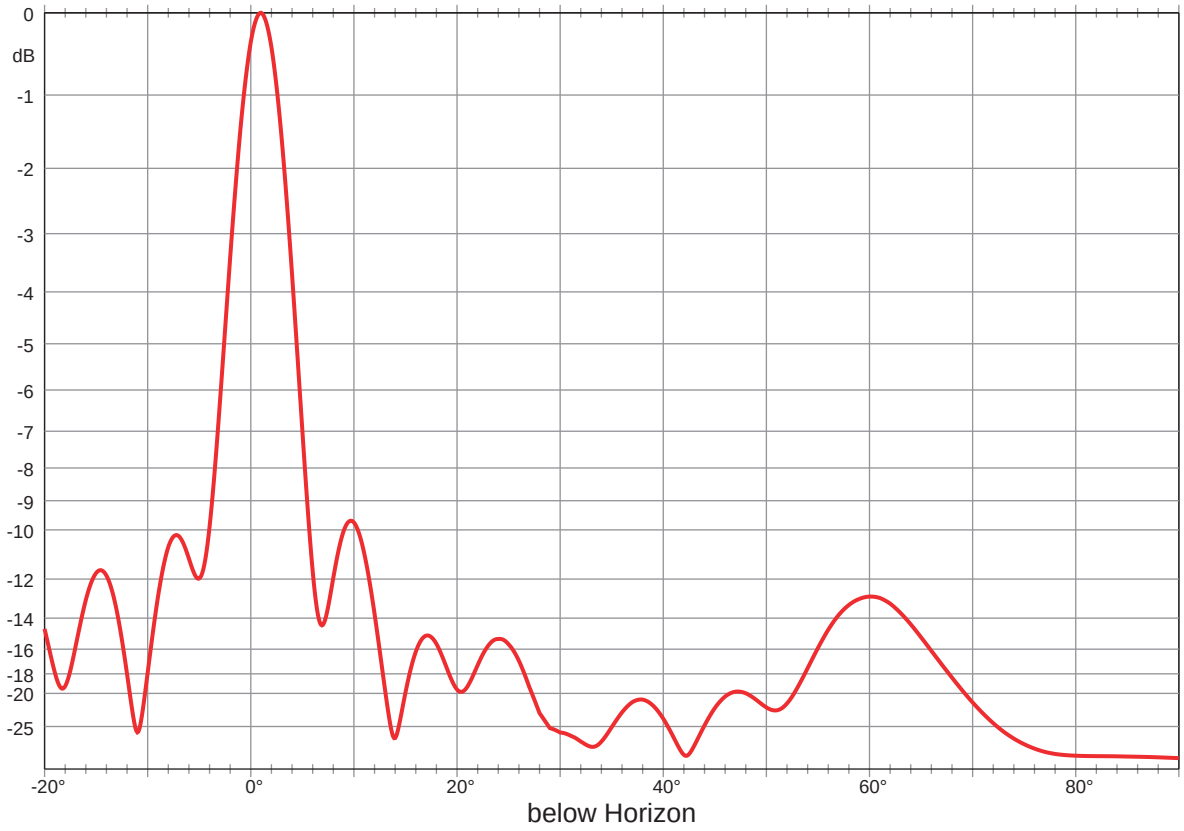
Elevation Pattern (cartesian-linear)



605 MHz

Antenna, Order No. 75010210
Number of Bays: 4

Frequency:	605 MHz
Elevation Directivity:	9.31 dBd
Directivity:	13.8 dBd
Downtilt:	1°
Compensation:	33.85 %

No.	Vert. Distance [mm]	Power	Phase [°]
4	3450	1	62.4
3	2300	1	0
2	1150	1	0
1	0	1	12.5

Subject to alternation

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Azimuthal Pattern

Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB
0	-2.9	45	-1.6	90	-2.02	135	-2.26	180	-14.48	225	-19.34	270	-23.01	315	-16.05
1	-2.71	46	-1.68	91	-1.96	136	-2.41	181	-14.81	226	-19.99	271	-22.43	316	-15.83
2	-2.55	47	-1.77	92	-1.9	137	-2.57	182	-15.11	227	-20.68	272	-21.73	317	-15.58
3	-2.41	48	-1.85	93	-1.84	138	-2.75	183	-15.36	228	-21.37	273	-21	318	-15.31
4	-2.27	49	-1.91	94	-1.76	139	-2.92	184	-15.61	229	-21.99	274	-20.32	319	-14.98
5	-2.11	50	-1.94	95	-1.65	140	-3.08	185	-15.87	230	-22.49	275	-19.68	320	-14.62
6	-1.94	51	-1.95	96	-1.53	141	-3.23	186	-16.1	231	-22.8	276	-19.06	321	-14.3
7	-1.77	52	-1.94	97	-1.4	142	-3.4	187	-16.24	232	-22.84	277	-18.53	322	-13.97
8	-1.62	53	-1.93	98	-1.28	143	-3.58	188	-16.32	233	-22.6	278	-18.05	323	-13.61
9	-1.47	54	-1.9	99	-1.15	144	-3.78	189	-16.42	234	-22.1	279	-17.64	324	-13.22
10	-1.32	55	-1.86	100	-1.02	145	-3.99	190	-16.57	235	-21.44	280	-17.29	325	-12.84
11	-1.18	56	-1.8	101	-0.9	146	-4.2	191	-16.73	236	-20.68	281	-17.05	326	-12.47
12	-1.06	57	-1.71	102	-0.78	147	-4.4	192	-16.86	237	-19.91	282	-16.85	327	-12.09
13	-0.93	58	-1.62	103	-0.67	148	-4.59	193	-16.97	238	-19.17	283	-16.68	328	-11.72
14	-0.8	59	-1.52	104	-0.56	149	-4.79	194	-17.05	239	-18.45	284	-16.56	329	-11.33
15	-0.68	60	-1.42	105	-0.46	150	-5.02	195	-17.06	240	-17.78	285	-16.48	330	-10.93
16	-0.57	61	-1.32	106	-0.38	151	-5.27	196	-17.04	241	-17.23	286	-16.41	331	-10.53
17	-0.47	62	-1.24	107	-0.3	152	-5.5	197	-17.01	242	-16.76	287	-16.37	332	-10.17
18	-0.38	63	-1.17	108	-0.24	153	-5.76	198	-16.97	243	-16.33	288	-16.36	333	-9.84
19	-0.3	64	-1.12	109	-0.19	154	-6.03	199	-16.88	244	-15.96	289	-16.37	334	-9.49
20	-0.22	65	-1.05	110	-0.15	155	-6.28	200	-16.75	245	-15.64	290	-16.4	335	-9.14
21	-0.17	66	-0.98	111	-0.12	156	-6.53	201	-16.63	246	-15.38	291	-16.43	336	-8.8
22	-0.11	67	-0.95	112	-0.11	157	-6.83	202	-16.52	247	-15.16	292	-16.5	337	-8.46
23	-0.07	68	-0.95	113	-0.1	158	-7.18	203	-16.4	248	-15.02	293	-16.62	338	-8.14
24	-0.04	69	-0.95	114	-0.11	159	-7.49	204	-16.28	249	-14.97	294	-16.76	339	-7.84
25	-0.01	70	-0.95	115	-0.12	160	-7.75	205	-16.13	250	-14.98	295	-16.87	340	-7.57
26	0	71	-0.96	116	-0.16	161	-8.03	206	-15.99	251	-15.06	296	-16.97	341	-7.28
27	-0.01	72	-0.99	117	-0.21	162	-8.34	207	-15.86	252	-15.2	297	-17.08	342	-6.98
28	-0.02	73	-1.02	118	-0.26	163	-8.63	208	-15.77	253	-15.38	298	-17.2	343	-6.69
29	-0.04	74	-1.05	119	-0.31	164	-8.92	209	-15.71	254	-15.62	299	-17.3	344	-6.41
30	-0.07	75	-1.12	120	-0.38	165	-9.27	210	-15.66	255	-15.91	300	-17.39	345	-6.14
31	-0.12	76	-1.22	121	-0.46	166	-9.67	211	-15.63	256	-16.25	301	-17.46	346	-5.88
32	-0.18	77	-1.31	122	-0.55	167	-10.04	212	-15.63	257	-16.66	302	-17.51	347	-5.65
33	-0.25	78	-1.41	123	-0.65	168	-10.36	213	-15.66	258	-17.15	303	-17.55	348	-5.43
34	-0.33	79	-1.5	124	-0.75	169	-10.69	214	-15.73	259	-17.71	304	-17.58	349	-5.2
35	-0.42	80	-1.57	125	-0.86	170	-11.02	215	-15.83	260	-18.34	305	-17.56	350	-4.94
36	-0.52	81	-1.64	126	-0.97	171	-11.33	216	-15.99	261	-19.07	306	-17.52	351	-4.7
37	-0.62	82	-1.74	127	-1.09	172	-11.7	217	-16.19	262	-19.87	307	-17.48	352	-4.48
38	-0.73	83	-1.84	128	-1.21	173	-12.12	218	-16.4	263	-20.7	308	-17.37	353	-4.27
39	-0.85	84	-1.92	129	-1.35	174	-12.51	219	-16.64	264	-21.56	309	-17.21	354	-4.05
40	-0.99	85	-1.98	130	-1.5	175	-12.82	220	-16.95	265	-22.37	310	-17.05	355	-3.86
41	-1.12	86	-2.04	131	-1.65	176	-13.15	221	-17.33	266	-23.06	311	-16.91	356	-3.68
42	-1.25	87	-2.07	132	-1.8	177	-13.52	222	-17.75	267	-23.5	312	-16.71	357	-3.49
43	-1.37	88	-2.08	133	-1.95	178	-13.86	223	-18.22	268	-23.61	313	-16.48	358	-3.29
44	-1.49	89	-2.06	134	-2.11	179	-14.17	224	-18.75	269	-23.42	314	-16.26	359	-3.09

Frequency: 605 MHz

Gain: 13.8 dBd

Subject to alternation

KATHREIN

Fox AZ / Jim McDermaid ch 16 / 36

Date: 2019.05.24

4x2 750 10210 BB panel arraykathrein Broadcast USA mj

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Elevation Pattern

Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB
0	-0.34	45	-21.87	90	-36.82	135	-41.31	180	-21.3	225	-36.46	270	-34.7	315	-19.37
1	0	46	-20.37	91	-37.13	136	-44.47	181	-22.45	226	-37.75	271	-34.51	316	-18.83
2	-0.4	47	-19.8	92	-37.46	137	-50.25	182	-24.48	227	-39.72	272	-34.23	317	-19.13
3	-1.59	48	-19.98	93	-37.83	138	-54.89	183	-27.46	228	-40.99	273	-33.89	318	-20.29
4	-3.69	49	-20.76	94	-38.23	139	-48.15	184	-31.15	229	-39.21	274	-33.56	319	-22.51
5	-6.98	50	-21.78	95	-38.69	140	-44.34	185	-33.31	230	-36.12	275	-33.26	320	-26.36
6	-11.64	51	-22.2	96	-39.2	141	-42.44	186	-32.47	231	-33.47	276	-32.93	321	-33.34
7	-14.39	52	-21.23	97	-39.69	142	-41.77	187	-31.58	232	-31.47	277	-32.53	322	-35.11
8	-11.95	53	-19.38	98	-40.2	143	-42.21	188	-32.01	233	-30.03	278	-32.16	323	-29.05
9	-10.05	54	-17.5	99	-40.74	144	-43.61	189	-34.19	234	-29	279	-31.84	324	-26.44
10	-9.73	55	-15.92	100	-41.2	145	-45.81	190	-39.18	235	-28.32	280	-31.55	325	-25.79
11	-10.9	56	-14.69	101	-41.48	146	-48.81	191	-47.55	236	-27.86	281	-31.23	326	-26.45
12	-13.75	57	-13.83	102	-41.41	147	-49.6	192	-39.29	237	-27.62	282	-30.93	327	-28.26
13	-19.45	58	-13.27	103	-40.93	148	-46.2	193	-34.78	238	-27.6	283	-30.68	328	-31.15
14	-27.74	59	-12.96	104	-40.11	149	-42.52	194	-32.93	239	-27.83	284	-30.5	329	-33.57
15	-19.9	60	-12.84	105	-39.06	150	-39.49	195	-32.74	240	-28.27	285	-30.36	330	-32.82
16	-16.19	61	-12.91	106	-37.9	151	-36.75	196	-33.99	241	-28.88	286	-30.24	331	-29.21
17	-15.07	62	-13.2	107	-36.67	152	-34.39	197	-36.77	242	-29.64	287	-30.09	332	-24.5
18	-15.62	63	-13.7	108	-35.46	153	-32.72	198	-40.04	243	-30.55	288	-29.79	333	-20.16
19	-17.48	64	-14.36	109	-34.28	154	-31.9	199	-38.55	244	-31.57	289	-29.16	334	-16.83
20	-19.56	65	-15.18	110	-33.19	155	-31.69	200	-34.99	245	-32.75	290	-28.12	335	-14.45
21	-19.26	66	-16.12	111	-32.2	156	-32.14	201	-32.54	246	-34.06	291	-26.72	336	-12.79
22	-17.25	67	-17.18	112	-31.35	157	-33.4	202	-31.16	247	-35.43	292	-25.01	337	-11.84
23	-15.78	68	-18.35	113	-30.63	158	-35.53	203	-30.52	248	-36.77	293	-23.12	338	-11.75
24	-15.29	69	-19.67	114	-29.98	159	-37.97	204	-30.44	249	-38.01	294	-21.24	339	-12.62
25	-15.66	70	-21.11	115	-29.45	160	-38.6	205	-30.91	250	-38.92	295	-19.52	340	-14.64
26	-16.88	71	-22.66	116	-29.05	161	-36.84	206	-31.95	251	-39.42	296	-17.96	341	-17.9
27	-19.28	72	-24.35	117	-28.76	162	-35.22	207	-33.54	252	-39.47	297	-16.56	342	-19.2
28	-22.62	73	-26.12	118	-28.59	163	-34.8	208	-35.63	253	-39.17	298	-15.32	343	-15.83
29	-25.33	74	-27.91	119	-28.59	164	-36.05	209	-38.23	254	-38.67	299	-14.27	344	-13.01
30	-26.33	75	-29.67	120	-28.79	165	-39.93	210	-41.12	255	-38.09	300	-13.37	345	-11.73
31	-27.11	76	-31.37	121	-29.18	166	-47.87	211	-42.93	256	-37.54	301	-12.67	346	-11.85
32	-28.79	77	-32.88	122	-29.8	167	-39.62	212	-42.23	257	-37.08	302	-12.2	347	-13.58
33	-30.61	78	-34.01	123	-30.62	168	-33.95	213	-40.72	258	-36.7	303	-11.97	348	-18.03
34	-28.8	79	-34.7	124	-31.71	169	-31.16	214	-39.89	259	-36.42	304	-11.96	349	-26.28
35	-25.13	80	-35.08	125	-33.16	170	-30.06	215	-40.02	260	-36.18	305	-12.2	350	-17.89
36	-22.5	81	-35.29	126	-34.99	171	-30.44	216	-41.38	261	-35.95	306	-12.75	351	-12.85
37	-21.07	82	-35.37	127	-37.12	172	-32.41	217	-44.54	262	-35.74	307	-13.65	352	-10.64
38	-20.74	83	-35.41	128	-39.24	173	-34.92	218	-50.99	263	-35.61	308	-14.97	353	-10.22
39	-21.52	84	-35.5	129	-40.46	174	-32.29	219	-49.56	264	-35.47	309	-16.86	354	-11.11
40	-23.54	85	-35.66	130	-40.26	175	-27.74	220	-42.83	265	-35.32	310	-19.39	355	-11.97
41	-27.55	86	-35.8	131	-39.47	176	-24.51	221	-39.15	266	-35.21	311	-22.38	356	-9.89
42	-34.55	87	-35.96	132	-38.92	177	-22.44	222	-37.05	267	-35.12	312	-24.1	357	-6.3
43	-30.23	88	-36.2	133	-38.94	178	-21.29	223	-36.06	268	-35.02	313	-22.81	358	-3.39
44	-24.78	89	-36.52	134	-39.63	179	-20.92	224	-35.91	269	-34.86	314	-20.75	359	-1.44

Frequency: 605 MHz

Gain: 13.8 dBd

Subject to alternation

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4x2 750 10210 BB panel arraykathrein Broadcast USA mj

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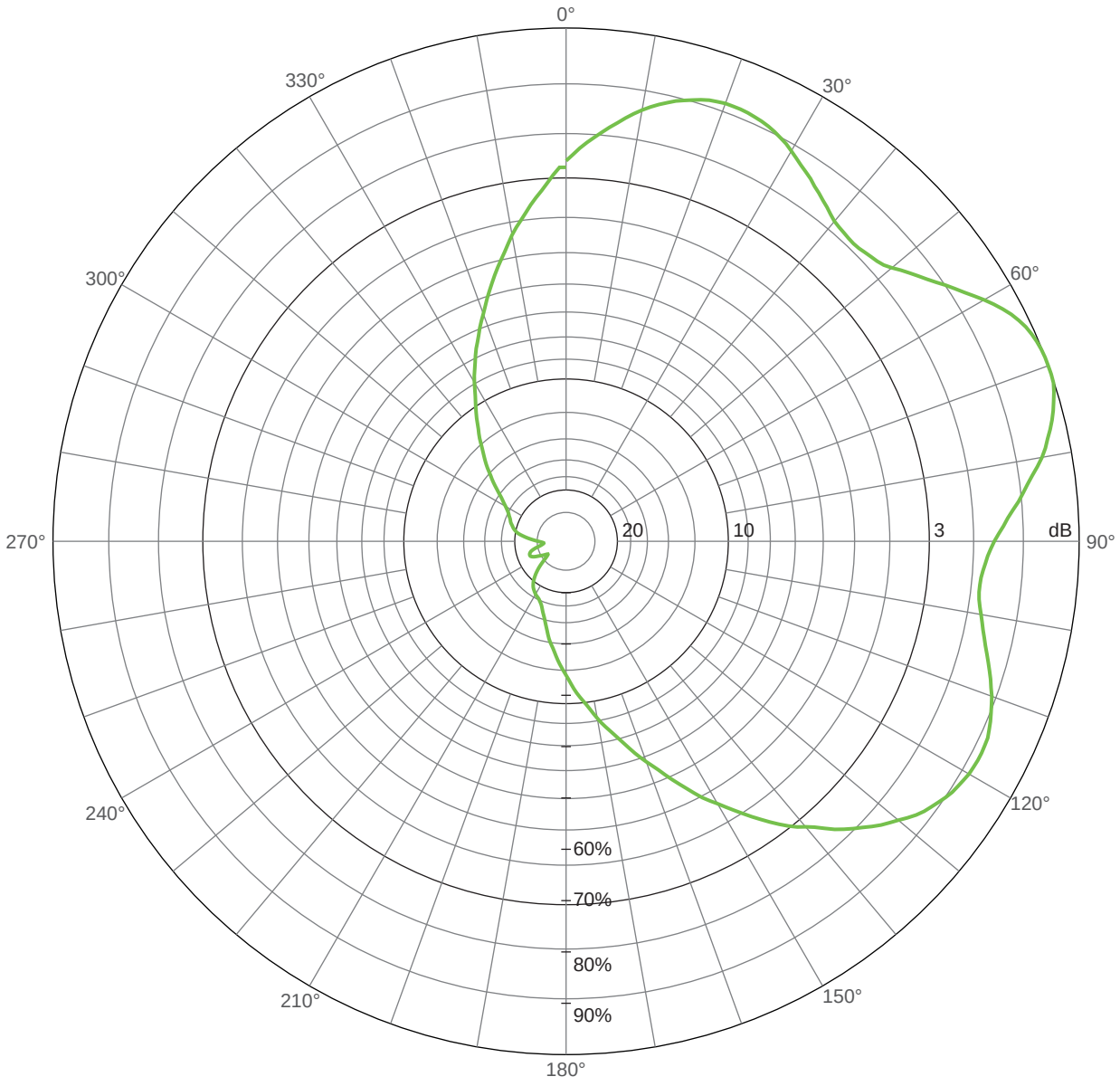
Azimuthal Pattern (polar-linear)



Antenna, Order No. 75010210
Panels per Bay: 2

Frequency: 485 MHz
Azimuthal Directivity: 4.45 dB
Directivity: 13.3 dBd

No.	Azimuth [°]	Radius [mm]	Offset [mm]	Power	Phase [°]
1	25	270	0	1	0
2	115	270	0	1	0

Subject to alternation

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4x2 750 10210 BB panel arraykathrein Broadcast USA mj

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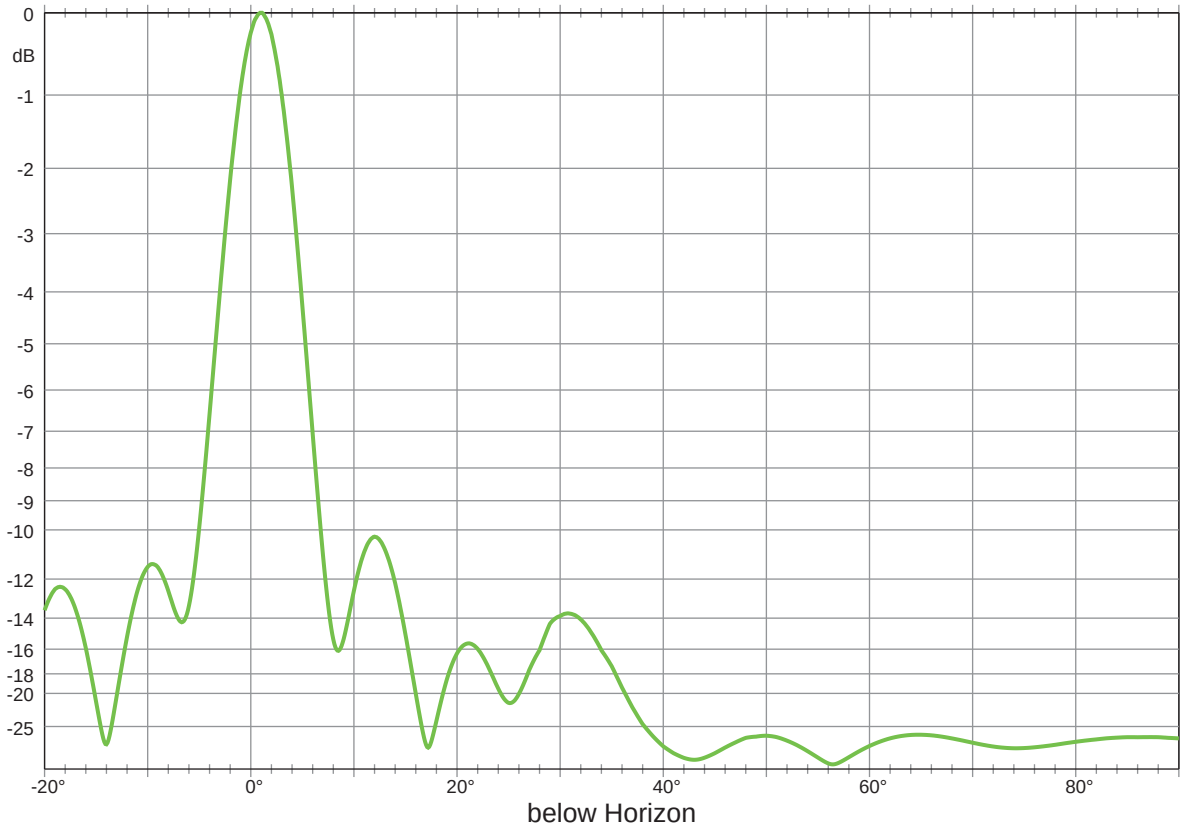
Elevation Pattern (cartesian-linear)



485 MHz

Antenna, Order No. 75010210
Frequency: 485 MHz
Number of Bays: 4

Elevation Directivity: 8.85 dBd
Directivity: 13.3 dBd
Gain: 13.3 dBd
Downtilt: 1°
Compensation: 23.3 %

No.	Vert. Distance [mm]	Power	Phase [°]
4	3450	1	50
3	2300	1	0
2	1150	1	0
1	0	1	10

Subject to alternation

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Azimuthal Pattern

Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB
0	-2.6	45	-1.86	90	-1.57	135	-2.03	180	-11.67	225	-22.2	270	-25.28	315	-13.02
1	-2.46	46	-1.83	91	-1.64	136	-2.16	181	-11.92	226	-22.72	271	-24.69	316	-12.76
2	-2.31	47	-1.8	92	-1.7	137	-2.3	182	-12.17	227	-23.32	272	-24.09	317	-12.5
3	-2.18	48	-1.77	93	-1.74	138	-2.47	183	-12.42	228	-24	273	-23.51	318	-12.23
4	-2.06	49	-1.72	94	-1.78	139	-2.64	184	-12.69	229	-24.69	274	-22.94	319	-11.93
5	-1.94	50	-1.63	95	-1.81	140	-2.78	185	-12.98	230	-25.35	275	-22.4	320	-11.63
6	-1.82	51	-1.52	96	-1.82	141	-2.9	186	-13.28	231	-25.96	276	-21.91	321	-11.37
7	-1.71	52	-1.42	97	-1.82	142	-3.05	187	-13.56	232	-26.47	277	-21.45	322	-11.13
8	-1.59	53	-1.32	98	-1.8	143	-3.22	188	-13.8	233	-26.89	278	-21	323	-10.85
9	-1.48	54	-1.22	99	-1.76	144	-3.4	189	-14.04	234	-27.19	279	-20.59	324	-10.56
10	-1.38	55	-1.11	100	-1.71	145	-3.59	190	-14.32	235	-27.23	280	-20.27	325	-10.3
11	-1.29	56	-0.99	101	-1.66	146	-3.78	191	-14.65	236	-26.95	281	-20.05	326	-10.04
12	-1.21	57	-0.88	102	-1.61	147	-3.98	192	-15	237	-26.49	282	-19.86	327	-9.79
13	-1.14	58	-0.77	103	-1.55	148	-4.18	193	-15.32	238	-26	283	-19.67	328	-9.53
14	-1.07	59	-0.65	104	-1.49	149	-4.38	194	-15.63	239	-25.53	284	-19.51	329	-9.24
15	-1.02	60	-0.53	105	-1.42	150	-4.58	195	-15.94	240	-25.11	285	-19.38	330	-8.94
16	-0.97	61	-0.42	106	-1.35	151	-4.76	196	-16.23	241	-24.71	286	-19.26	331	-8.66
17	-0.92	62	-0.32	107	-1.28	152	-4.95	197	-16.48	242	-24.24	287	-19.12	332	-8.42
18	-0.88	63	-0.23	108	-1.21	153	-5.18	198	-16.72	243	-23.74	288	-18.97	333	-8.17
19	-0.86	64	-0.16	109	-1.15	154	-5.42	199	-16.98	244	-23.29	289	-18.85	334	-7.9
20	-0.84	65	-0.1	110	-1.08	155	-5.65	200	-17.24	245	-22.96	290	-18.76	335	-7.65
21	-0.84	66	-0.06	111	-1.03	156	-5.88	201	-17.47	246	-22.71	291	-18.68	336	-7.44
22	-0.84	67	-0.03	112	-0.98	157	-6.12	202	-17.65	247	-22.52	292	-18.58	337	-7.21
23	-0.85	68	-0.01	113	-0.93	158	-6.37	203	-17.8	248	-22.44	293	-18.45	338	-6.96
24	-0.87	69	0	114	-0.89	159	-6.59	204	-17.94	249	-22.42	294	-18.31	339	-6.74
25	-0.89	70	0	115	-0.85	160	-6.8	205	-18.08	250	-22.44	295	-18.2	340	-6.53
26	-0.92	71	0	116	-0.84	161	-7.02	206	-18.18	251	-22.5	296	-18.07	341	-6.3
27	-0.96	72	-0.01	117	-0.83	162	-7.25	207	-18.26	252	-22.61	297	-17.91	342	-6.06
28	-1.01	73	-0.05	118	-0.83	163	-7.5	208	-18.33	253	-22.76	298	-17.73	343	-5.84
29	-1.06	74	-0.1	119	-0.84	164	-7.75	209	-18.4	254	-22.95	299	-17.53	344	-5.62
30	-1.13	75	-0.15	120	-0.85	165	-7.99	210	-18.49	255	-23.26	300	-17.32	345	-5.4
31	-1.2	76	-0.21	121	-0.88	166	-8.22	211	-18.61	256	-23.64	301	-17.08	346	-5.19
32	-1.27	77	-0.28	122	-0.91	167	-8.44	212	-18.72	257	-24.08	302	-16.84	347	-4.99
33	-1.33	78	-0.36	123	-0.94	168	-8.65	213	-18.84	258	-24.54	303	-16.61	348	-4.79
34	-1.39	79	-0.43	124	-0.99	169	-8.87	214	-18.96	259	-25.11	304	-16.36	349	-4.57
35	-1.47	80	-0.52	125	-1.05	170	-9.12	215	-19.09	260	-25.66	305	-16.06	350	-4.35
36	-1.53	81	-0.63	126	-1.11	171	-9.38	216	-19.25	261	-26.1	306	-15.75	351	-4.16
37	-1.6	82	-0.75	127	-1.17	172	-9.65	217	-19.45	262	-26.45	307	-15.44	352	-3.99
38	-1.66	83	-0.86	128	-1.25	173	-9.9	218	-19.67	263	-26.76	308	-15.11	353	-3.81
39	-1.73	84	-0.96	129	-1.35	174	-10.12	219	-19.9	264	-27.04	309	-14.79	354	-3.62
40	-1.79	85	-1.06	130	-1.46	175	-10.34	220	-20.2	265	-27.19	310	-14.49	355	-3.45
41	-1.82	86	-1.18	131	-1.56	176	-10.57	221	-20.55	266	-27.16	311	-14.22	356	-3.29
42	-1.84	87	-1.29	132	-1.66	177	-10.83	222	-20.9	267	-26.86	312	-13.91	357	-3.11
43	-1.86	88	-1.38	133	-1.78	178	-11.12	223	-21.28	268	-26.41	313	-13.58	358	-2.92
44	-1.87	89	-1.48	134	-1.91	179	-11.41	224	-21.73	269	-25.87	314	-13.29	359	-2.75

Frequency: 485 MHz

Gain: 13.3 dBd

Subject to alternation

KATHREIN

Fox AZ / Jim McDermaid ch 16 / 36

4x2 750 10210 BB panel arraykathrein Broadcast USA mj

Date: 2019.05.24

KATHREIN SE Anton-Kathrein-Str. 1-3 P.O. Box 10 04 44 83004 ROSENHEIM Germany Phone +49 8031 184-0 Fax +49 8031-495 www.kathrein.com

Elevation Pattern

Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB	Angle	dB
0	-0.23	45	-33.58	90	-27.85	135	-57.32	180	-24.52	225	-52.06	270	-22.61	315	-32.33
1	0	46	-30.93	91	-28.12	136	-60.9	181	-25.27	226	-53.01	271	-22.42	316	-33.5
2	-0.25	47	-29.07	92	-28.52	137	-61.25	182	-26.48	227	-54.6	272	-22.15	317	-35.07
3	-1	48	-27.71	93	-28.9	138	-58.66	183	-28.42	228	-56.56	273	-21.98	318	-36.72
4	-2.28	49	-27.37	94	-29.3	139	-54.52	184	-30.98	229	-58.74	274	-21.85	319	-37.52
5	-4.26	50	-27.12	95	-29.85	140	-50.99	185	-34.34	230	-62.01	275	-21.83	320	-36.18
6	-7.06	51	-27.5	96	-30.41	141	-47.63	186	-37.84	231	-68.04	276	-21.78	321	-32.48
7	-10.97	52	-28.52	97	-31.08	142	-45.26	187	-38.77	232	-64.24	277	-21.78	322	-28.25
8	-15.32	53	-30.09	98	-31.73	143	-43.69	188	-37.35	233	-57.25	278	-21.84	323	-24.03
9	-15.31	54	-32.55	99	-32.54	144	-42.49	189	-36.5	234	-52.59	279	-21.96	324	-21.09
10	-12.55	55	-36.42	100	-33.45	145	-41.44	190	-36.48	235	-49.36	280	-22.2	325	-18.28
11	-10.84	56	-42.56	101	-34.51	146	-40.54	191	-37.73	236	-46.95	281	-22.48	326	-16.28
12	-10.25	57	-41.8	102	-35.42	147	-40.08	192	-40.4	237	-44.98	282	-22.86	327	-14.36
13	-10.74	58	-36.11	103	-36.39	148	-39.58	193	-45.72	238	-43.39	283	-23.3	328	-13.16
14	-12.19	59	-32.57	104	-37.32	149	-39.81	194	-55.21	239	-42.17	284	-23.87	329	-12.07
15	-15.01	60	-30.32	105	-38.09	150	-40.75	195	-46.57	240	-41.31	285	-24.56	330	-11.38
16	-20.04	61	-28.84	106	-38.55	151	-41.48	196	-41.7	241	-40.77	286	-25.41	331	-11.12
17	-29.92	62	-27.84	107	-38.87	152	-42.8	197	-39.35	242	-40.51	287	-26.42	332	-11.34
18	-23.93	63	-27.23	108	-38.88	153	-44.99	198	-38.57	243	-40.56	288	-27.61	333	-12.12
19	-18.57	64	-26.93	109	-38.63	154	-47.54	199	-38.7	244	-40.98	289	-28.92	334	-13.6
20	-16.31	65	-26.87	110	-38.39	155	-48.32	200	-40.16	245	-41.59	290	-30.26	335	-15.96
21	-15.6	66	-27.02	111	-38.17	156	-46.67	201	-41.92	246	-42.35	291	-31.22	336	-19.29
22	-15.98	67	-27.36	112	-38.1	157	-44.42	202	-45.29	247	-42.83	292	-31.38	337	-21.37
23	-17.34	68	-27.86	113	-38	158	-42.89	203	-47.75	248	-42.86	293	-30.62	338	-18.65
24	-19.47	69	-28.46	114	-38.16	159	-42.55	204	-45.74	249	-42.26	294	-29.34	339	-15.54
25	-21.16	70	-29.17	115	-38.53	160	-43.19	205	-42.2	250	-40.71	295	-28.01	340	-13.56
26	-20.05	71	-29.88	116	-39.15	161	-45.13	206	-39.73	251	-38.82	296	-26.82	341	-12.48
27	-17.66	72	-30.52	117	-39.99	162	-50.23	207	-37.75	252	-36.97	297	-25.89	342	-12.48
28	-16.08	73	-30.99	118	-41.11	163	-56.15	208	-36.6	253	-35.29	298	-25.2	343	-13.5
29	-14.34	74	-31.22	119	-42.65	164	-46.07	209	-35.54	254	-33.76	299	-24.77	344	-15.92
30	-13.88	75	-31.14	120	-44.66	165	-40.67	210	-35.09	255	-32.37	300	-24.6	345	-21.05
31	-13.75	76	-30.83	121	-47.49	166	-37.4	211	-35.05	256	-31.01	301	-24.72	346	-29.72
32	-14.08	77	-30.39	122	-51.54	167	-35.72	212	-35.3	257	-30	302	-25.13	347	-20.26
33	-14.86	78	-29.89	123	-58.07	168	-35.24	213	-35.78	258	-29.04	303	-25.87	348	-15.14
34	-16.08	79	-29.34	124	-59.49	169	-35.78	214	-36.39	259	-28.2	304	-27.05	349	-12.57
35	-17.33	80	-28.87	125	-54.17	170	-37.19	215	-37.71	260	-27.42	305	-28.76	350	-11.46
36	-19.36	81	-28.47	126	-50.76	171	-39.86	216	-39.62	261	-26.69	306	-31.22	351	-11.48
37	-21.76	82	-28.14	127	-49.22	172	-39.79	217	-41.87	262	-26.01	307	-34.97	352	-12.56
38	-24.53	83	-27.82	128	-48.44	173	-35.36	218	-44.56	263	-25.39	308	-41.11	353	-14.07
39	-27.26	84	-27.64	129	-48.47	174	-31.44	219	-47.7	264	-24.85	309	-44.64	354	-13.32
40	-30.45	85	-27.51	130	-48.36	175	-28.66	220	-50.49	265	-24.37	310	-38.35	355	-9.91
41	-33.58	86	-27.53	131	-49.3	176	-26.62	221	-52.11	266	-23.93	311	-34.57	356	-6.57
42	-36.62	87	-27.5	132	-50.67	177	-25.23	222	-51.86	267	-23.58	312	-32.65	357	-4.01
43	-38.27	88	-27.51	133	-52.38	178	-24.48	223	-51.43	268	-23.23	313	-31.78	358	-2.16
44	-36.49	89	-27.7	134	-54.82	179	-24.23	224	-51.24	269	-22.9	314	-31.95	359	-0.93

Frequency: 485 MHz

Gain: 13.3 dBd

Subject to alternation

KATHREIN

Fox AZ / Jim McDermaid ch 16 / 36

4x2 750 10210 BB panel arraykathrein Broadcast USA mj

Date: 2019.05.24

Page: 10

KATHREIN SE Anton-Kathrein-Str. 1-3 P.O. Box 10 04 44 83004 ROSENHEIM Germany Phone +49 8031 184-0 Fax +49 8031-495 www.kathrein.com

UHF Panel

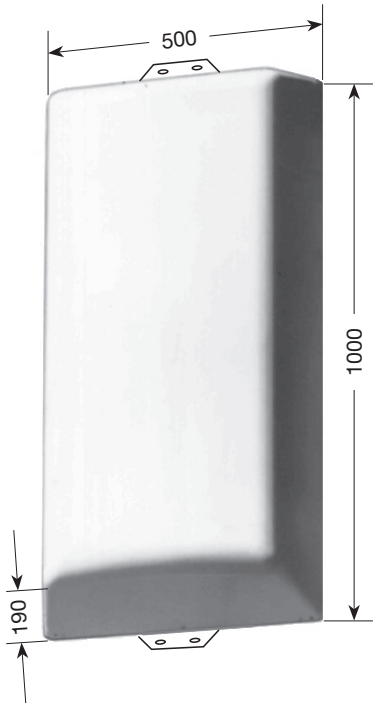
470–862 MHz

Polarization

H

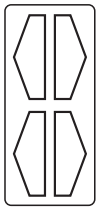
KATHREIN

- All-purpose panel for mounting by fixations or to square steel spines.



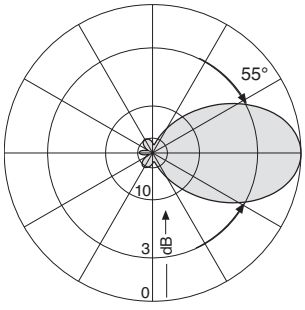
Order No.	75010210
Input	7-16 female straight
Max. power	1.2 kW (at 40 °C ambient temperature)
Frequency range	470 – 862 MHz
VSWR	< 1.1
Gain (at mid-band)	11.5 dBd
Impedance	50 Ω
Polarization	Horizontal
Weight	8 kg
Wind load (at 160 km/h)	Frontal: 565 N Rearside: 815 N Lateral: 250 N
Max. wind velocity	225 km/h
Attachment	Plate

Material:	Reflector screen and dipoles: Weather-resistant aluminum. Protective cover: Fiberglass. Attachment plate: Hot-dip galvanized steel.
Radome color:	RAL 9016 (traffic white), other radome colors on request.
Mounting:	Using M 8 x 35 screws (supplied) to suitable attachment construction. Further mounting accessories upon request (please order separately).
Grounding:	Via mounting parts.
Ice protection:	The dipoles remain fully functioning even in icy conditions as the fiberglass cover protects the whole antenna.

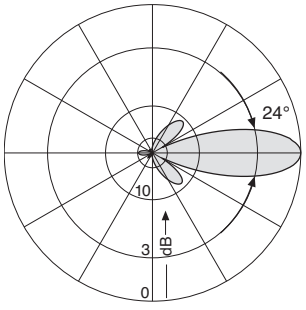


Horizontal polarization

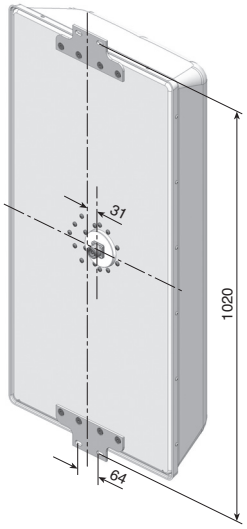
Radiation Patterns (at mid-band)



Horizontal Radiation Pattern



Vertical Radiation Pattern



All dimensions in mm

936.4917/b Subject to alteration.

KATHREIN-Werke KG · Anton-Kathrein-Straße 1-3 · P.O. Box 10 04 44 · 83004 ROSENHEIM · GERMANY · Phone +49 8031 184-0 · Fax +49 8031 184-495

UHF Panel

470–862 MHz

KATHREIN

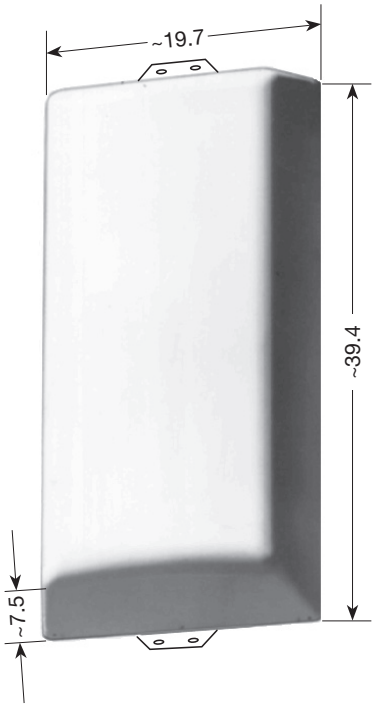
Polarization

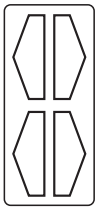
H

- All-purpose panel for mounting by fixations or to square steel spines.

Order No.	75010210
Input	7-16 female straight
Max. power	1.2 kW (at 104 °F ambient temperature)
Frequency range	470 – 862 MHz
VSWR	< 1.1
Gain (at mid-band)	11.5 dBd
Impedance	50 Ω
Polarization	Horizontal
Weight	18 lb
Wind load (at 160 km/h)	Frontal: 127 lbf Rearside: 183 lbf Lateral: 56 lbf
Max. wind velocity	140 mph
Attachment	Plate

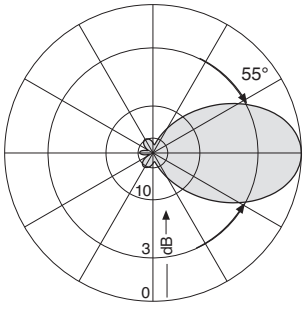
Material:	Reflector screen and dipoles: Weather-resistant aluminum. Protective cover: Fiberglass. Attachment plate: Hot-dip galvanized steel.
Radome color:	RAL 9016 (traffic white), other radome colors on request.
Mounting:	Using M 8 x 35 screws (supplied) to suitable attachment construction. Further mounting accessories upon request (please order separately).
Grounding:	Via mounting parts.
Ice protection:	The dipoles remain fully functioning even in icy conditions as the fiberglass cover protects the whole antenna.



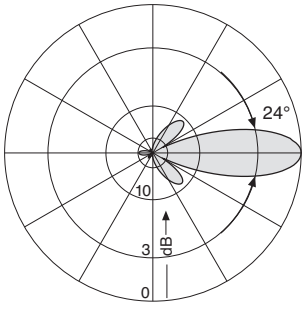


Horizontal polarization

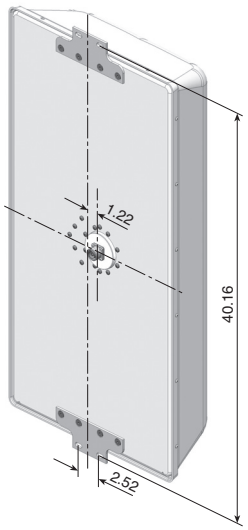
Radiation Patterns (at mid-band)



Horizontal Radiation Pattern



Vertical Radiation Pattern



All dimensions in inches

936.4917/b Subject to alteration.

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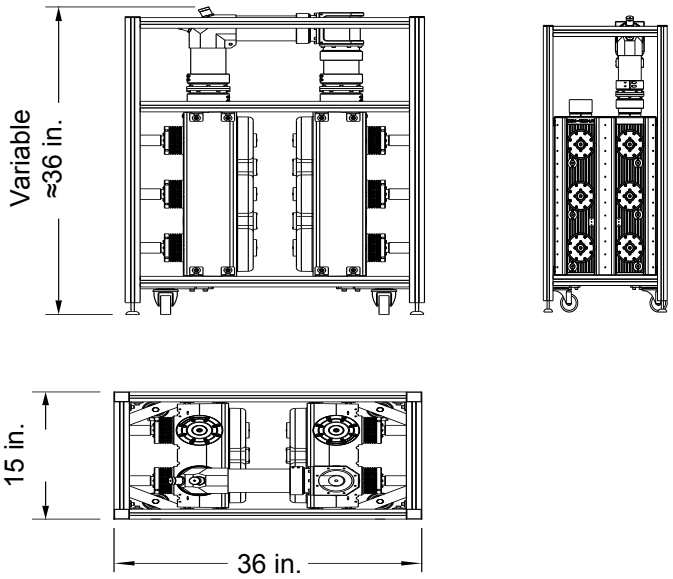
Combiner Specifications

Mechanical Dims



Inputs 7/8 EIA
rated for
1.3 kW per input

Output 1-5/8 EIA
Tuned for " Full Service "
Mask compliance

UHF 6-Pole 120 mm Starpoint Combiner

SF6D120C

FEATURES

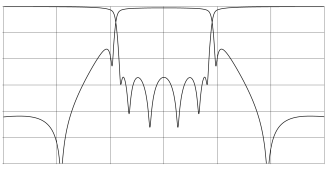
- 6-Pole
- 120 mm Cavity Size
- *DualCross*: Double Cross Coupling
- 1 Guard Channel Minimum Spacing
- Full Band Tunability
- Temperature Stabilization
- DC Short
- Interchangeable Connector System
- Modular Frame System

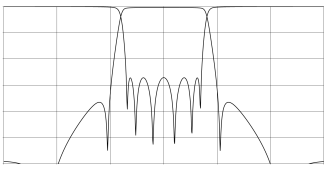
OPTIONS

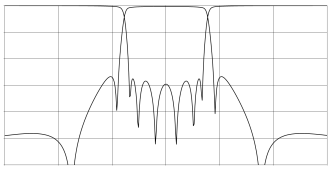
- Heat Sinks
- Forced Air Cooling
- Liquid Cooling

SPECIFICATIONS

Code / Revision		B-SF6D120C / A
Order / Cavity Size		6-Pole *DualCross* / 120 mm
Frequency Range / Bandwidth		470-862 MHz / 6-8 MHz
Temperature Stability		< 2 kHz/K
Max Operating Temperature (Body)		65°C (149°F)
Environmental Conditions		-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight [1]		-
Links		1+5/8" Rigid Line
Connectors [2]	**3x 64 mm**	**Inputs; Output**
	D-PC64J	1+5/8" FastLine Socket (Default)
	D-PC64K	1+5/8" FastLine Flange
	D-PC64M	3+1/8" FastLine Socket
	D-PC64N	3+1/8" FastLine Flange
Options [2]	O-HTF.01	Heat Sinks
	O-FTF.01	Forced Air Cooling
	O-LTF.01	Liquid Cooling
Liquid Cooling Interface [2]		3/8" NPT Male
Coolant / Liquid Flow		Glycol and Water / 6 l/min (1.6 gal/min)







TUNING DATA [2]	**DVB-T/T2**			**ATSC 1.0/3.0**			**ISDB-T**		
Tuning Code / Bandwidth	T-6D.13 / 8 MHz			T-6D.05 / 6 MHz			T-6D.14 / 6 MHz		
Max RMS Input Power [3]	700 MHz			700 MHz			700 MHz		
Default	1.50 kW			1.30 kW			1.20 kW		
with Heat Sinks	2.10 kW			1.80 kW			1.65 kW		
with Forced Air Cooling	4.05 kW			3.50 kW			3.20 kW		
with Liquid Cooling	5.05 kW			4.35 kW			4.00 kW		
Insertion Loss		470 MHz	700 MHz		470 MHz	700 MHz		470 MHz	700 MHz
	C.F.	< 0.30 dB	< 0.36 dB	C.F.	< 0.40 dB	< 0.47 dB	C.F.	< 0.41 dB	< 0.49 dB
	±3.8 MHz	< 0.87 dB	< 1.03 dB	±2.7 MHz	< 0.54 dB	< 0.64 dB	±2.79 MHz	< 1.93 dB	< 1.10 dB
	±3.9 MHz	< 1.05 dB	< 1.25 dB	±2.93 MHz	< 0.69 dB	< 0.82 dB		(+ 0.10 dB)	
		(+ 0.10 dB)			(+ 0.10 dB)				
Selectivity	C.F. ± 4.2 MHz	> 4 dB		C.F. ± 3.5 MHz	> 10 dB		C.F. ± 3.15 MHz	> 7 dB	
	C.F. ± 6.0 MHz	> 20 dB		C.F. ± 6.0 MHz	> 29 dB		C.F. ± 4.5 MHz	> 22 dB	
	C.F. ± 12.0 MHz	> 41 dB		C.F. ± 9.0 MHz	> 63 dB		C.F. ± 9.0 MHz	> 47 dB	
Return Loss / VSWR	> 23 dB / < 1.15			> 26 dB / < 1.11			> 25 dB / < 1.12		
Isolation	> 30 dB			> 30 dB			> 30 dB		
Group Delay Variation	< 400 ns			< 250 ns			< 450 ns		

[1] Default configuration [2] Other Connectors/Options/Tunings available [3] Altitude < 1500 m (4.900 ft.), free air, standard environmental conditions, non-adjacent channels

Please note:

As a result of more stringent legal regulations and judgements regarding product liability, we are obliged to point out certain risks that may arise when products are used under extraordinary operating conditions.

The mechanical design is based on the environmental conditions as stipulated in ETS 300 019-1-4 and thereby respects the static mechanical load imposed on an antenna by wind at maximum velocity.

Extraordinary operating conditions, such as heavy icing or exceptional dynamic stress (e.g. strain caused by oscillating support structures), may result in the breakage of an antenna or even cause it to fall to the ground.

Cylindrical bodies can show crosswind response, which can cause the supporting structure to oscillate and to be damaged. Prismatic bodies, even with non-circular cross-section can show crosswind response, which can cause the supporting structure to oscillate (see EN 1991-1-4 or EN 1993-3-1).

These facts must be considered during the site planning process.

The maximum wind velocities listed should be understood in the sense of working values according to DIN and EN standards. These values include a safety factor (1.5) below the ultimate limit state (elastic limit or permanent deformation). For these wind velocities we guarantee the mechanical safety and the electrical integrity of our antennas.

The installation team must be properly qualified and also be familiar with the relevant national safety regulations.
The details given in our data sheets have to be followed carefully when installing the antennas and accessories.
The limits for the coupling torque of RF-connectors, recommended by the connector manufacturers must be obeyed.

Any previous datasheet issues have now become invalid.

Our quality assurance system and our environmental management system apply to the entire company and are certified by TÜV according to EN ISO 9001 and EN ISO 14001.

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