KATHREIN
Antennen · Electronic

Auxiliary
DTV Broadcast Antenna

SALT LAKE CITY

Type No. 773 941

Kathrein Werke KG, Postbox 100 444, 83004 Rosenheim, Germany
Tel.: +49 08031 / 184-988 Fax : +49 08031 / 184-495

TECHNICAL DESCRIPTION

Auxiliary DTV Broadcast Antenna SALT LAKE CITY

Antenna Arrangement

The transmitting antenna consists of 8 bays of 3 panels each. It has been designed for a power rating of 58 kW and is planned for the operating channels 34/36/38/40/42/44/46/48. Flexwell cables HF 7/8" Cu2Y lead from the panels to the sub splitters, which are connected to the main splitter via Flexwell cables HF 1 5/8" Cu2Y PTFE.

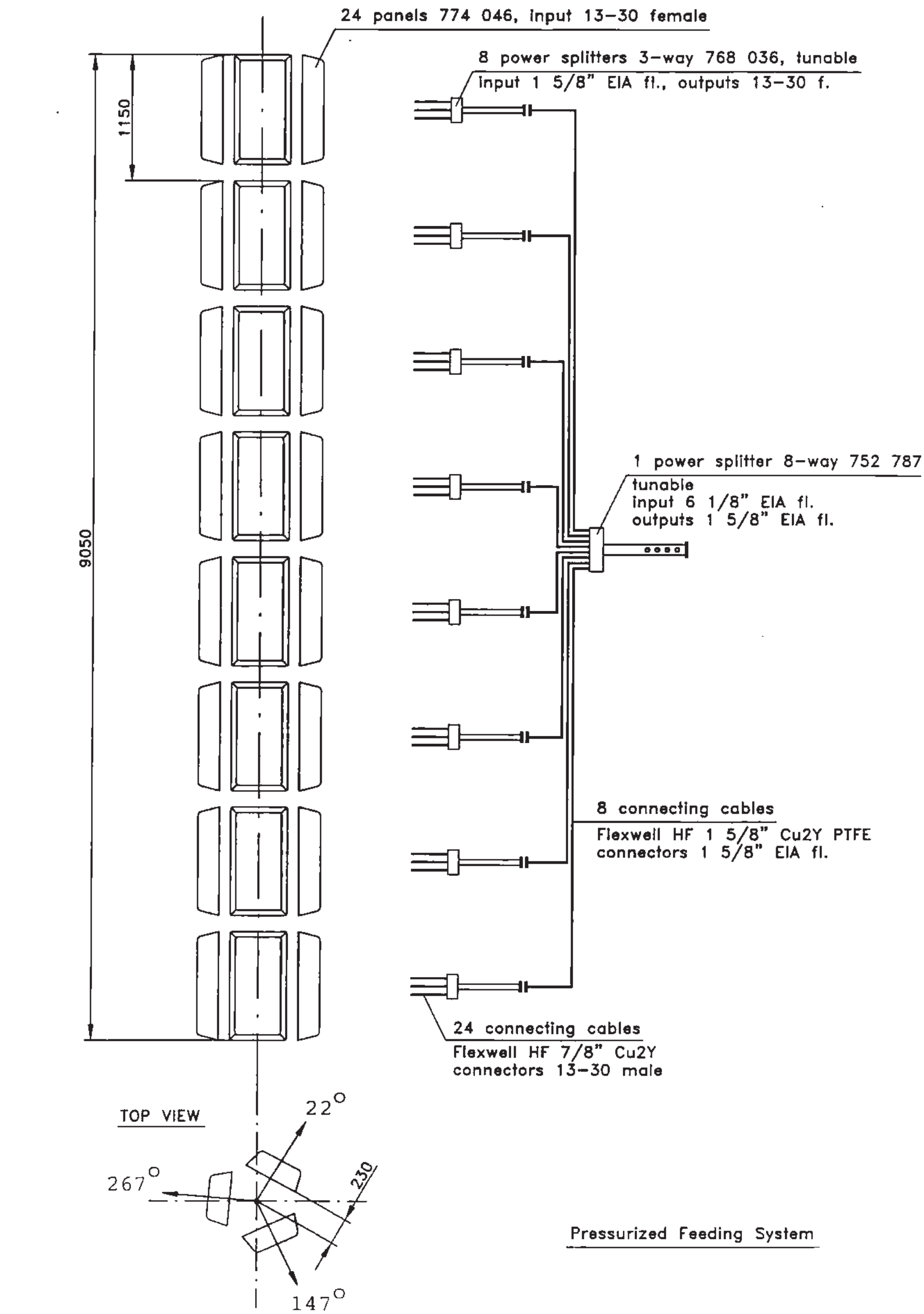
The panels are a special version of our panel K 72 31 47 for high power transmission and especially designed for high wind speed.

Installation and Factory Tests

For factory acceptance tests one bay will be set up at our test range. The horizontal radiation pattern will be measured in all operating channels. Both systems will mostly be premounted at our factory. Only the main splitter and the connecting cables 1 5/8" will be supplied separately and be mounted only after installation of the antennas to the mast. After completion the system will be carefully tested and measured by Kathrein personnel.

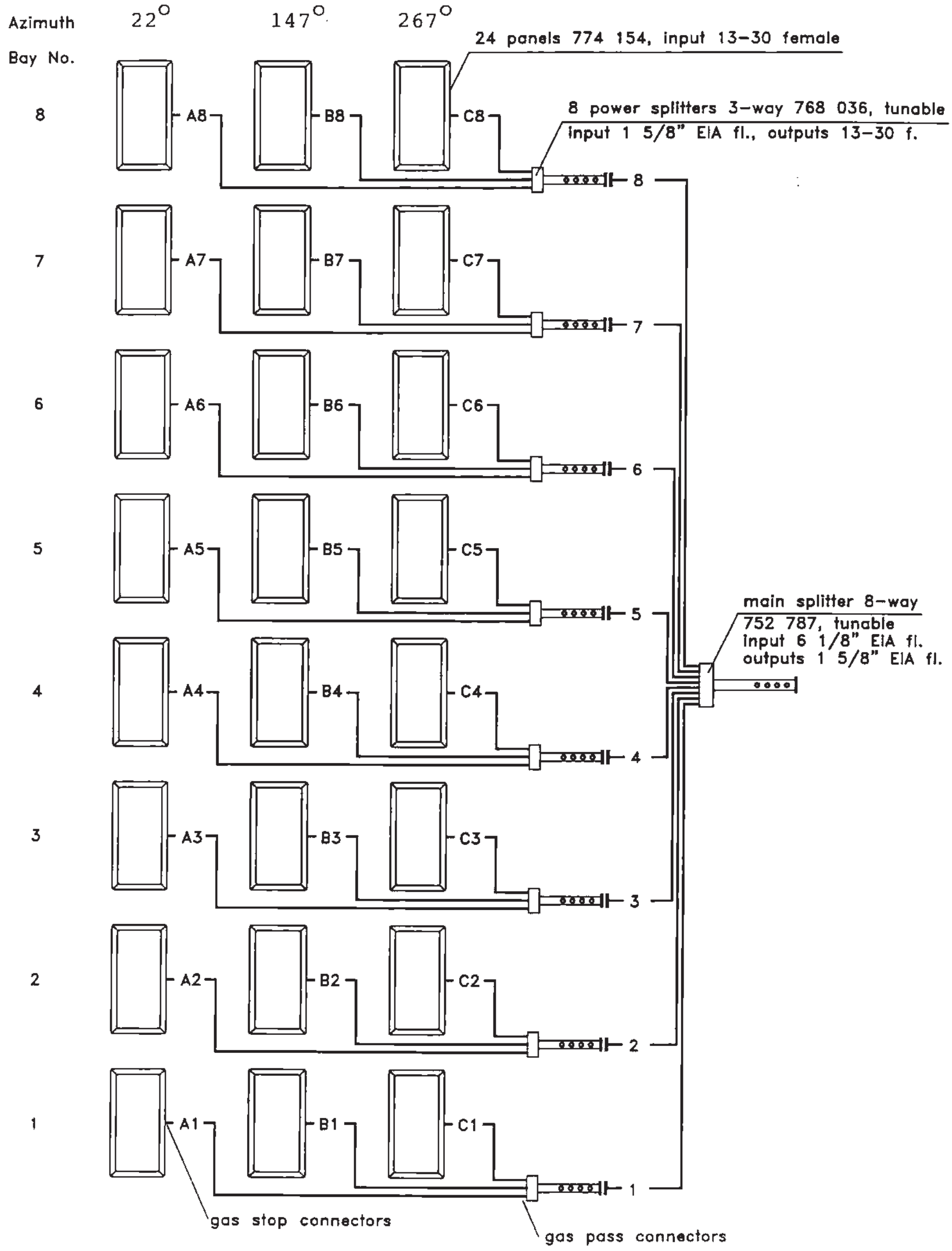
Constructional features	see sheets 1 and 109
Frequency range	470 – 860 MHz
Operating channel	34 / 36 / 38 / 40 / 42 / 44 / 46 / 48
Polarization	horizontal
Impedance	50 Ohms
Gain, reference half wave dipole	14.6 ..... 15.0 dB (at input of main splitters)
VSWR	s ≤ 1.06 across operating channels after tuning
Horizontal radiation pattern	see sheets 101
Vertical radiation pattern	see sheets 102
Max. power rate	58 kW
Input	6 1/8“ EIA flange

KATHREIN Antennen · Electronic	Day: 02.03.99	Auxiliary DTV Broadcast Antenna SALT LAKE CITY	Type No. 773 941
	Name: B/SI		Sheet: 111



Pressurized Feeding System

KATHREIN	Day 27-07-99 Name BCA/SI	Auxiliary DTV Broadcast Antenna SALT LAKE CITY	Type No. 773 941 Sheet: 109



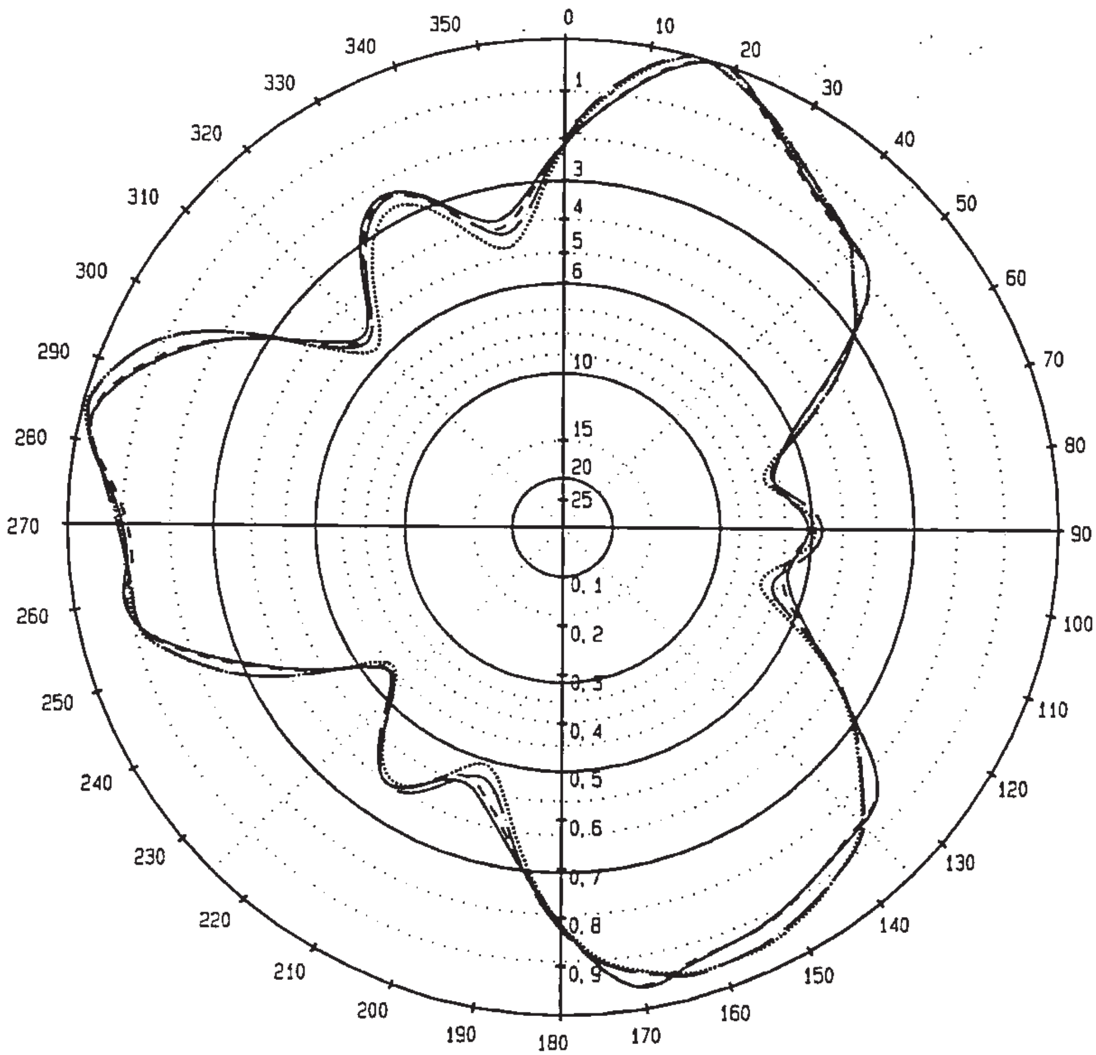
pressurized feeding system !

KATHREIN	Day	Auxiliary	Type No.
	27-07-99	DTV Broadcast Antenna	773 941
	Name	SAL LAKE	Sheet:
	ECA/S		

Cable No.	Length [mm]	Cable Type	Connectors
1	11 963	Flexwell HF 1 5/8" Cu2Y PTFE	both ends 1 5/8" EIA flange 092 1163, gas pass (drilled)
2	11 925		
3	11 856		
4	11 805		
5	11 799		
6	11 768		
7	11 674		
8	11 730		
A1 – A8 B1 – B8 C1 – C8	1 600	Flexwell HF 7/8" Cu2Y 914 525	both ends 13-30 male, 092 1896 panel end: gas stop splitter end: gas pass (drilled)

f = 630 MHz

KATHREIN Antennen · Electronic	Day: 11.05.99 Name: BCA/SI	Cabling Auxiliary DTV Broadcast Antenna SALT LAKE CITY	Type No. 773 941 Sheet: 115.2



frequency in MHz	591.250	615.250	639.250	663.250
down-tilt in °	.0			
max / mean in dB	2.57	2.60	2.52	2.61

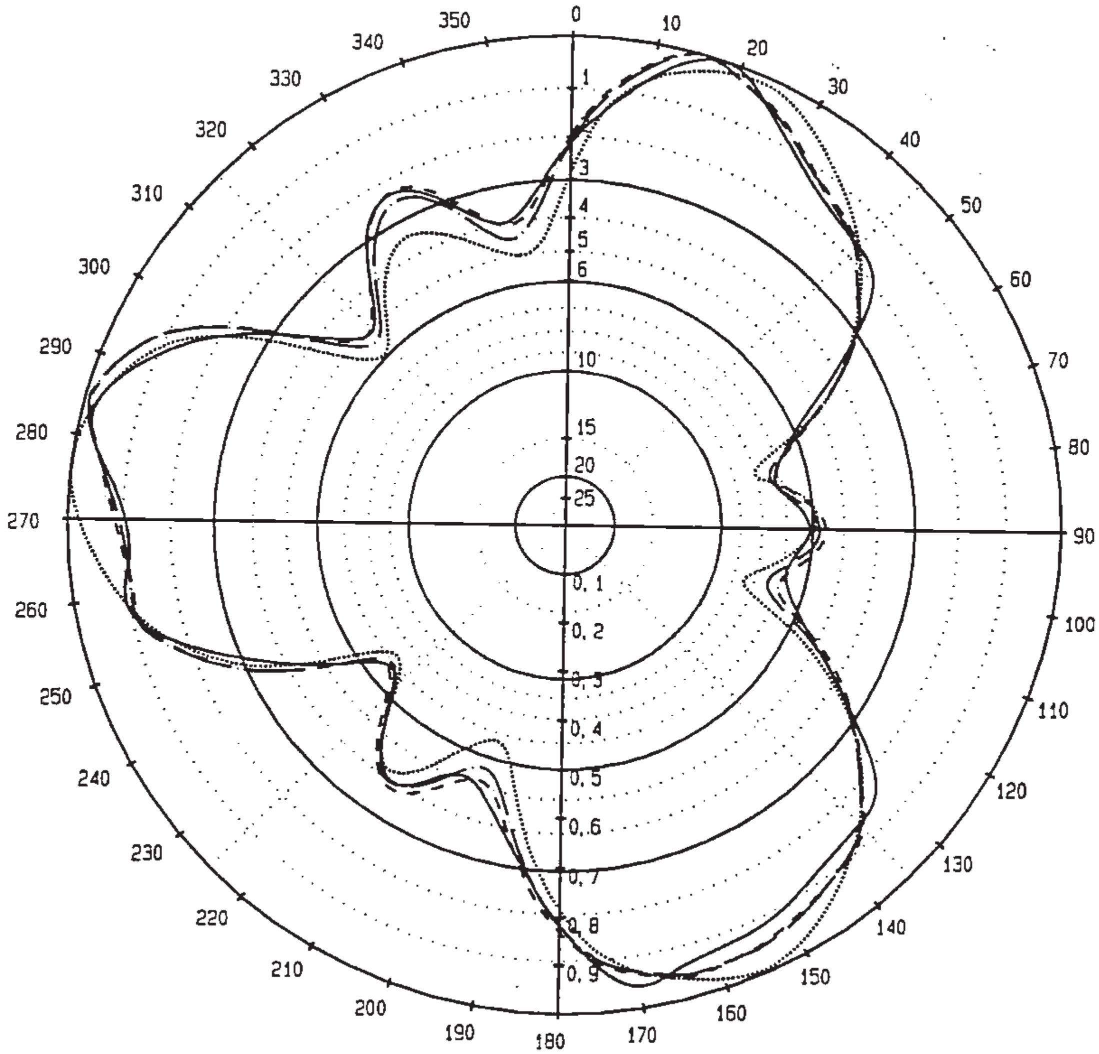
Note:

The HRP is only valid for undisturbed propagation. Due to the side-mounting of the panels on the mast shadowing and reflections from the mast are possible.

calculated pattern ch 34 / 38 / 42 / 46

KATHREIN Rosenheim Germany	horizontal radiation pattern	Typ Nr. 773 941
B/sl 18.12.98 14:41	Auxiliary DTV Antenna SALT LAKE CITY	Bl.: 101.1

simulation with typical exactness of +/- 5% of max. signal



frequency in MHz	603.250	627.250	651.250	675.250
down-tilt in °	.0			
max / mean in dB	2.59	2.47	2.56	2.66

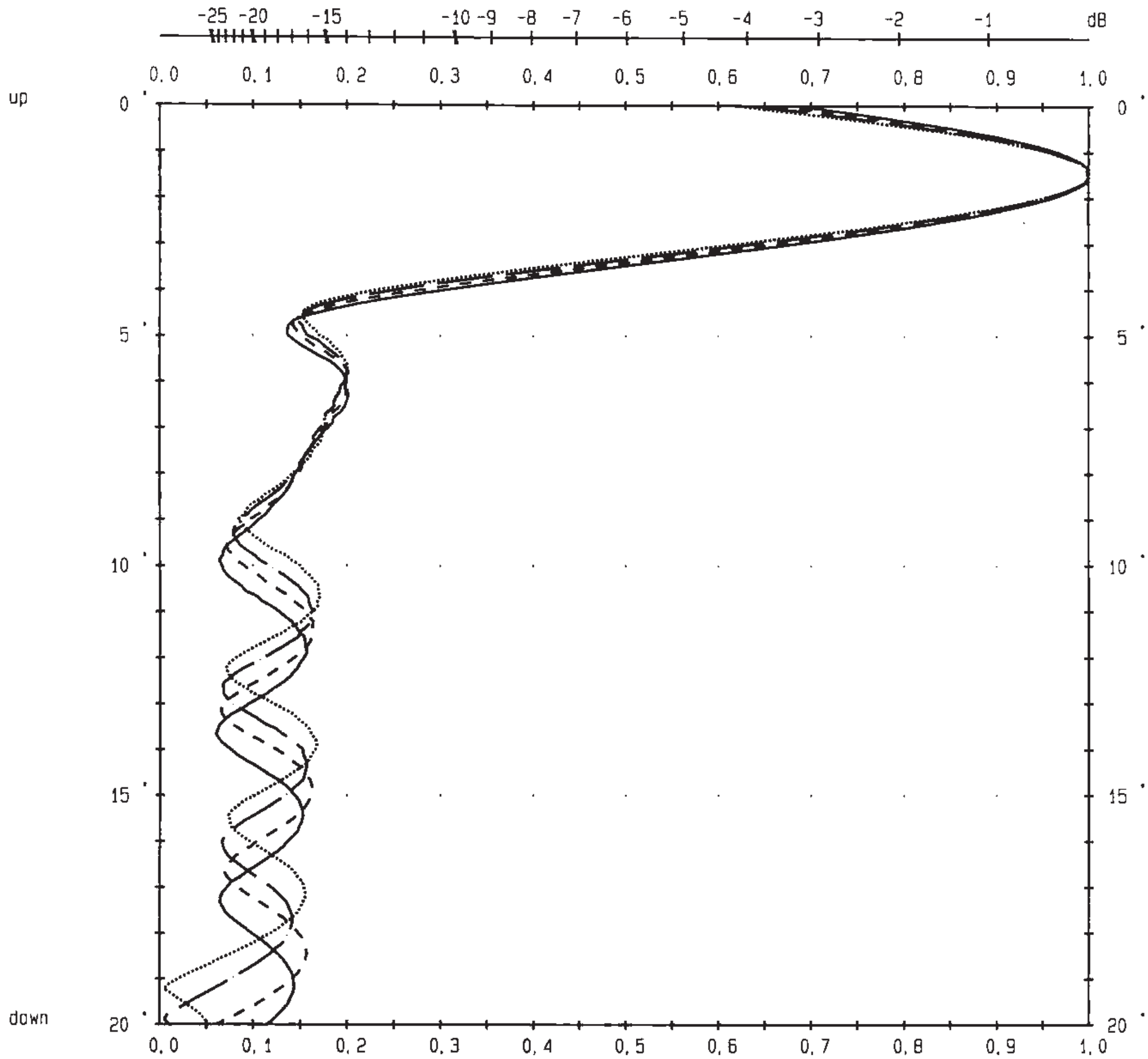
Note:

The HRP is only valid for undisturbed propagation. Due to the side-mounting of the panels on the mast shadowing and reflections from the mast are possible.

calculated pattern ch 36 / 40 / 44 / 48

KATHREIN Rosenheim Germany.	horizontal radiation pattern	Typ Nr. 773 941
B/sl 18.12.98 14:31	Auxiliary DTV Antenna SALT LAKE CITY	Bl.: 101.2

simulation with typical exactness of + - 8% of max. signal



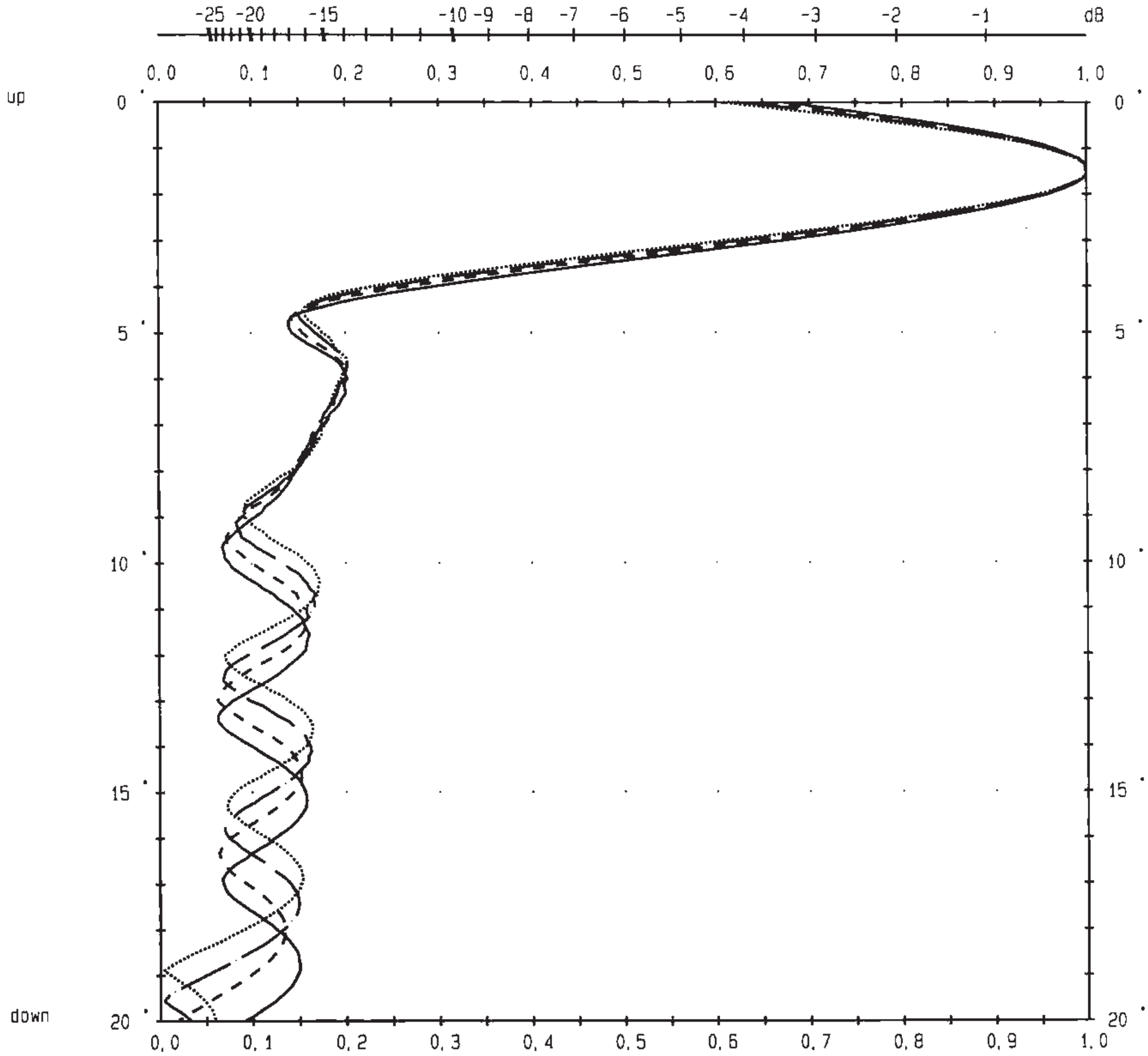
frequency in MHz 591.250 615.250 639.250 663.250

azimut in ° 15.0

omni-dir in dBd

calculated pattern ch 36 /40 /44 /48

KATHREIN Rosenheim Germany	vertical radiation pattern	Typ Nr. 773 941
B/sl 6.7.99 8:18	Auxiliary DTV Antenna SALT LAKE CITY	91 102 3



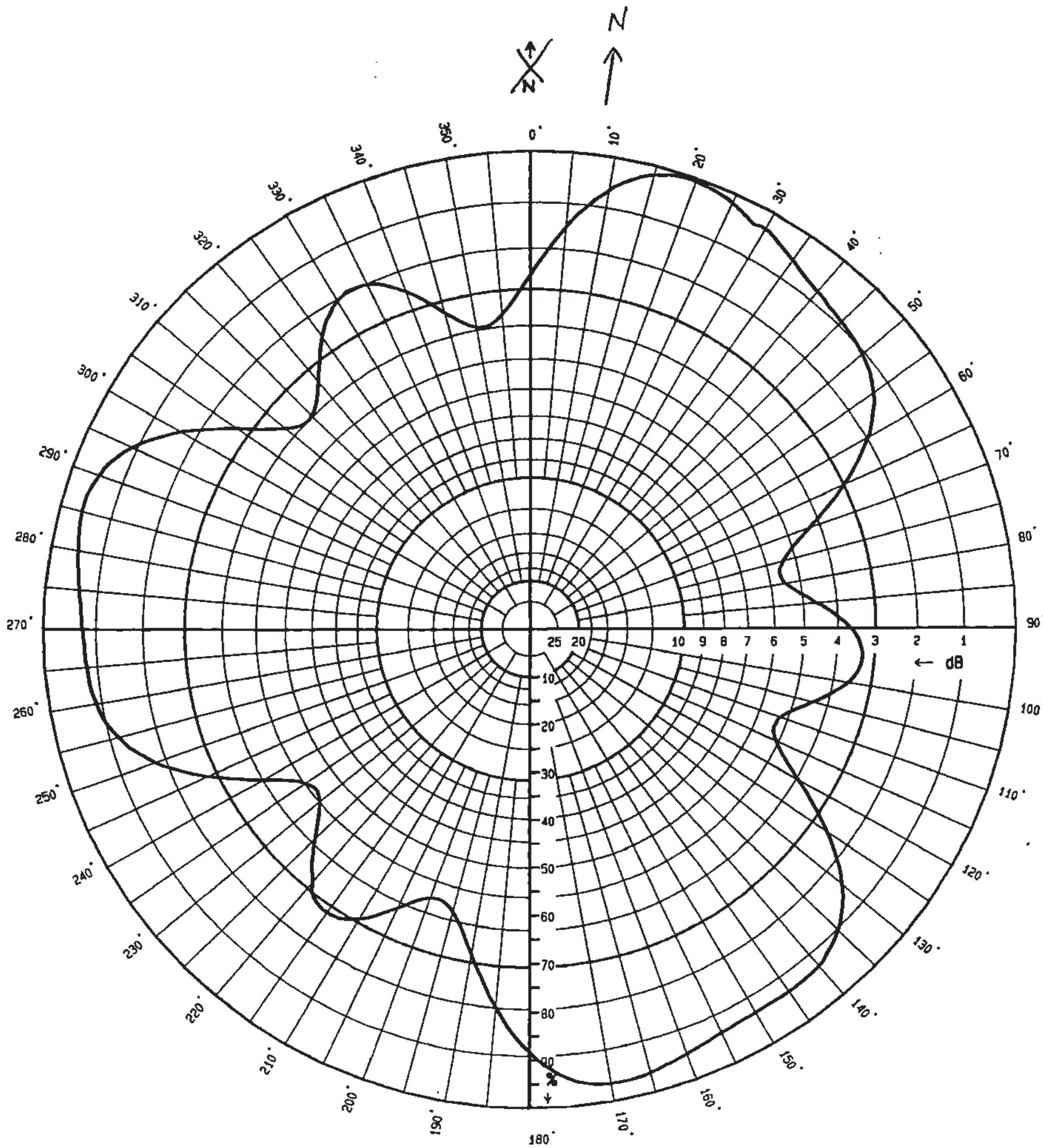
frequency in MHz 603.250 627.250 651.250 675.250

azimut in ° 15.0

omni-dir in dBd

calculated pattern ch 36 /40 /44 /48

KATHREIN Rosenheim Germany	vertical radiation pattern	Typ Nr 773 941
B/si 8.7.99 8 10	Auxiliary DTV Antenna SALT LAKE CITY	Bl 102 4

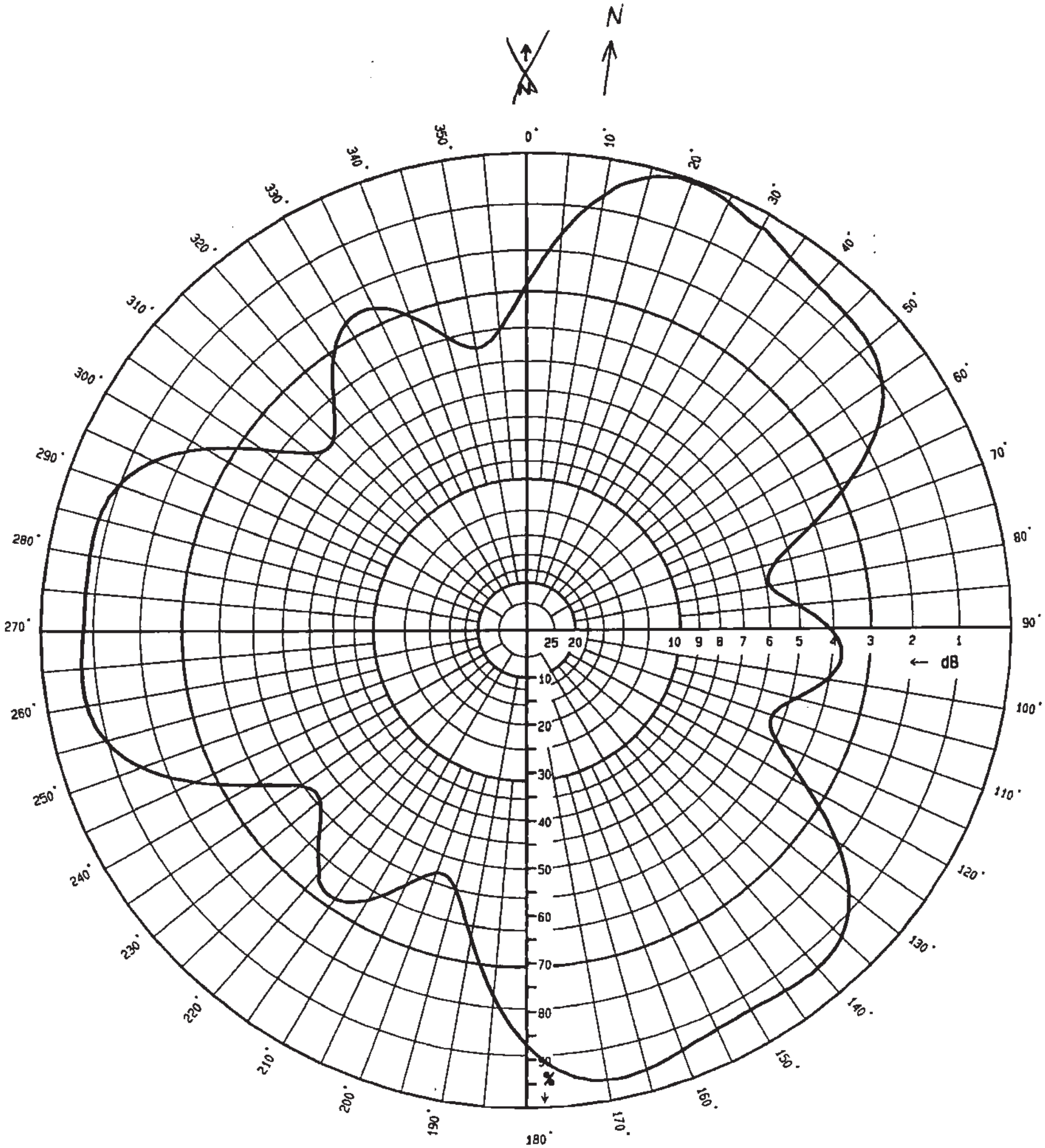


Factory test

Horizontal pattern

——— 593.00 MHz EMax/EMean: 1.99 dB

KATHREIN	12:54	Salt lake City	Typ Nr:
	28-Jun-99	DTV Broadcast Antenna	773 941
	Name		Blatt Nr:

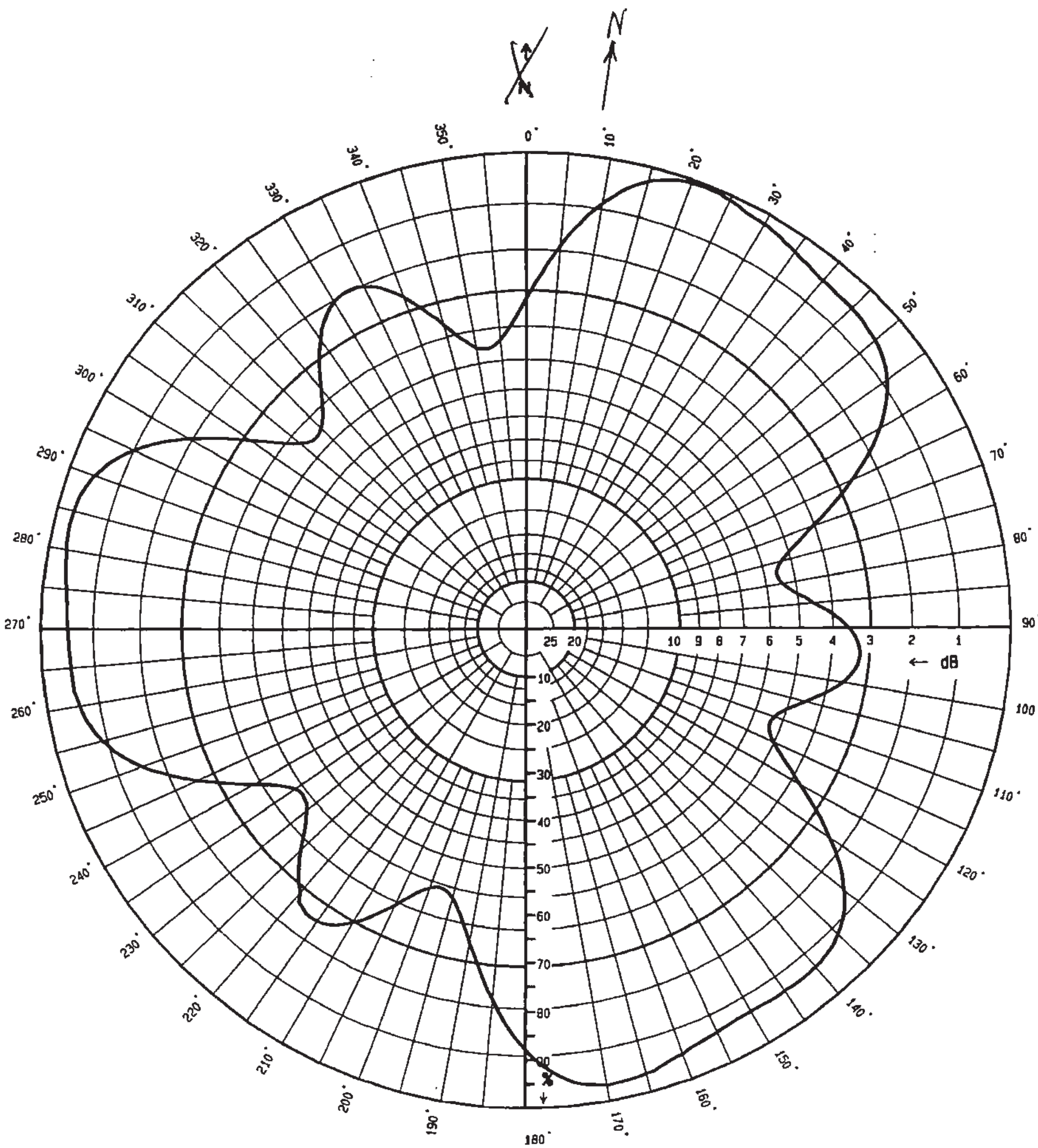


Factory test

Horizontal pattern

——— 605.00 MHz EMax/EMean: 2.13 dB

KATHREIN	12:54	Salt lake City	Typ Nr:
	28-Jun-99		773 941
	Name	DTV Broadcast Antenna	Blatt Nr:

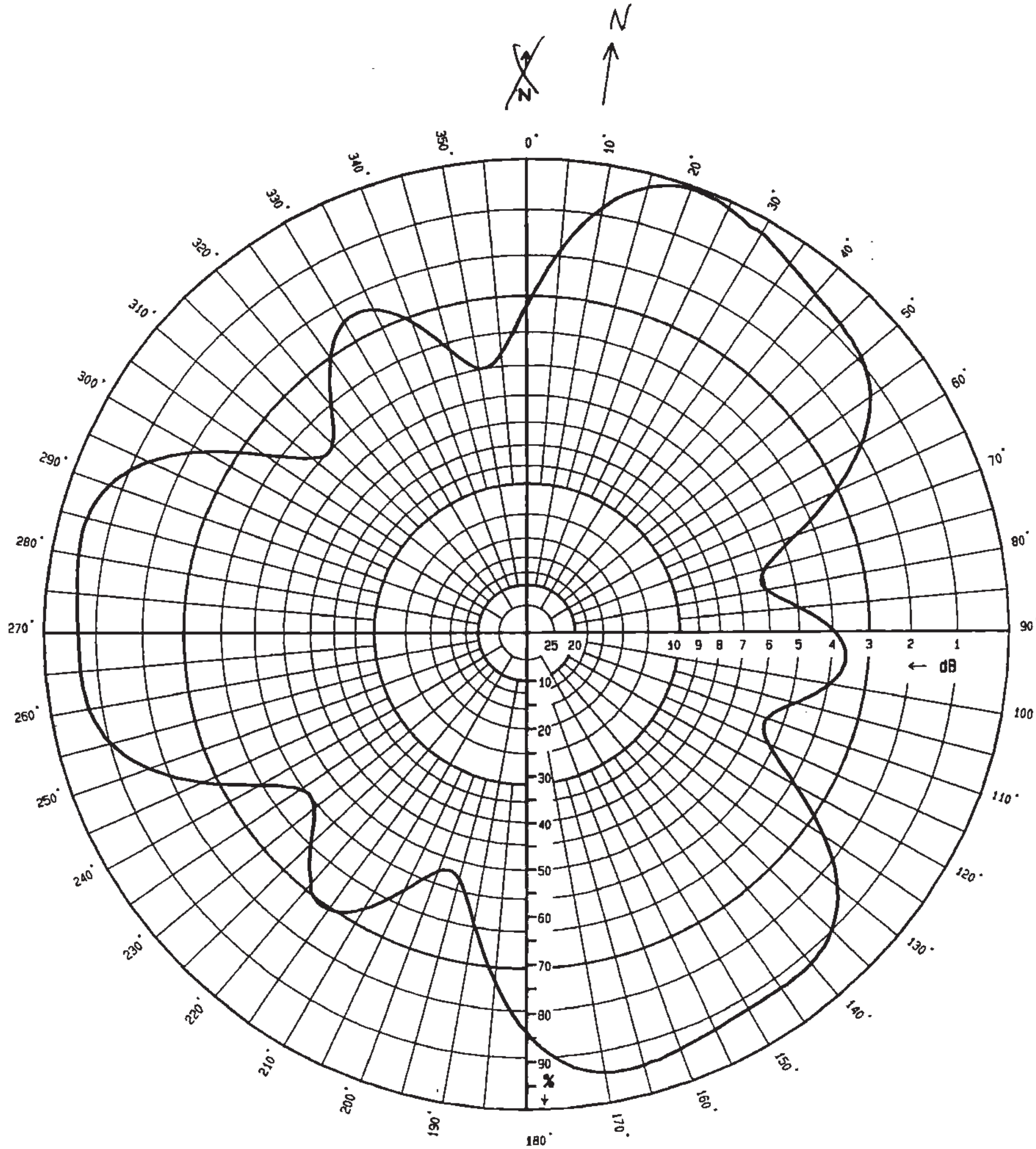


Factory test

Horizontal pattern

——— 617.00 MHz EMax/EMean: 1.94 dB

KATHREIN	12:54	Salt lake City	Typ Nr:
	28-Jun-99		773 941
	Name	DTV Broadcast Antenna	Blatt Nr:

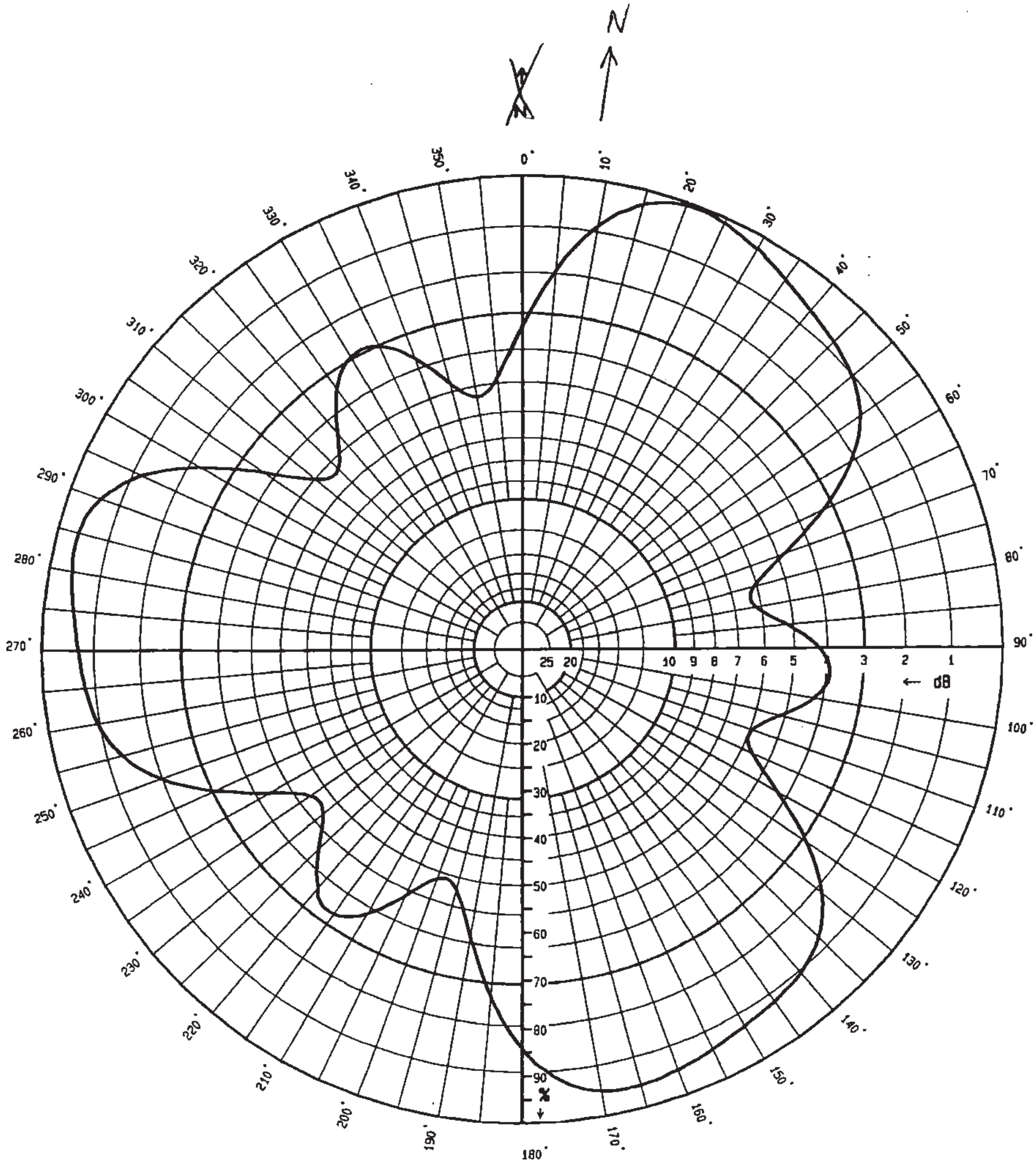


Factory test

Horizontal pattern

——— 629.00 MHz EMax/EMean: 2.19 dB

KATHREIN	12:54	Salt lake City	Typ Nr:
	28-Jun-99		773 941
	Name	DTV Broadcast Antenna	Blatt Nr:

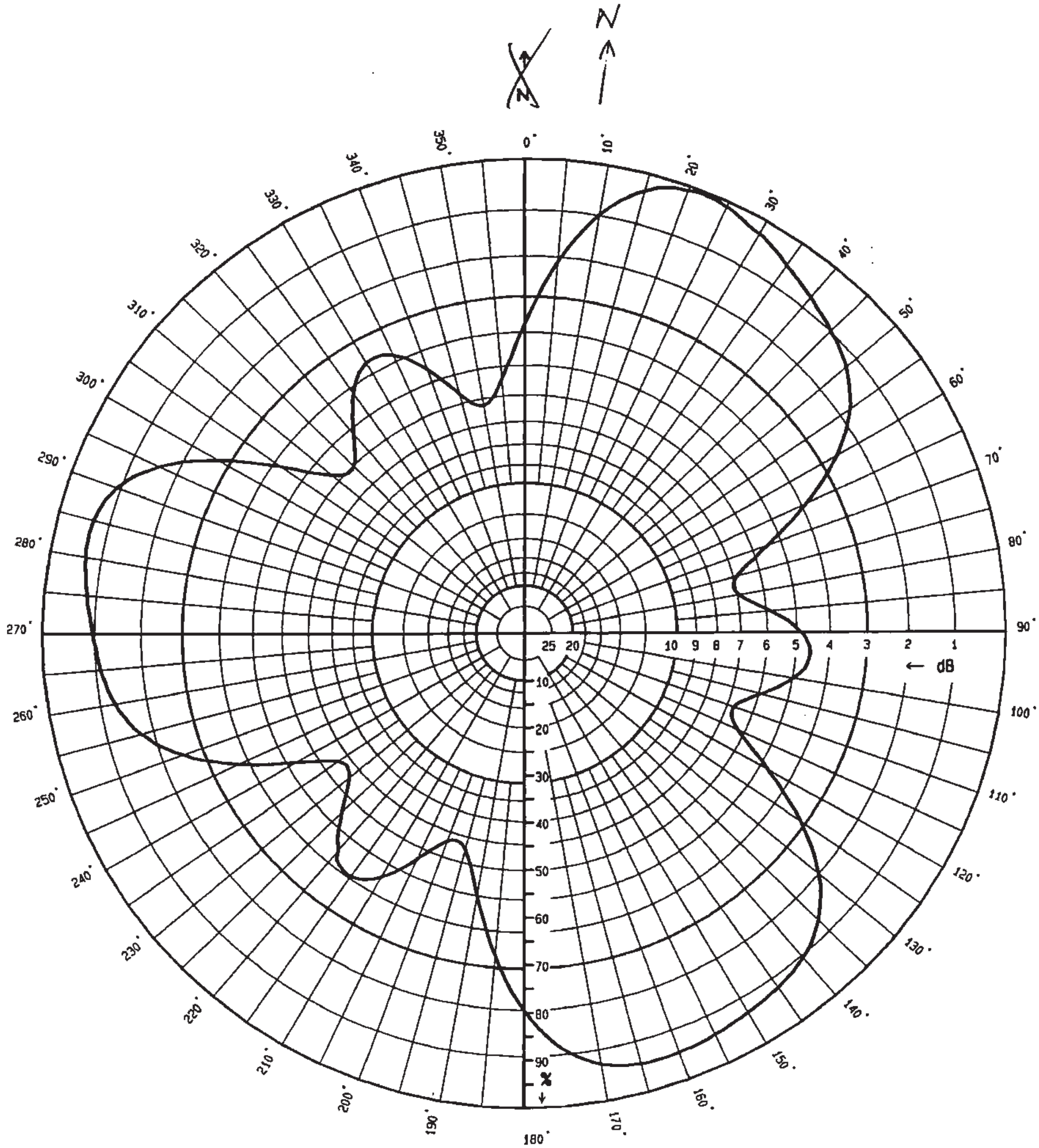


Factory test

Horizontal pattern

——— 641.00 MHz EMax/EMean: 2.33 dB

KATHREIN	12:54 28-Jun-99 Name	Salt lake City DTV Broadcast Antenna	Typ Nr: 773 941 Blatt Nr:

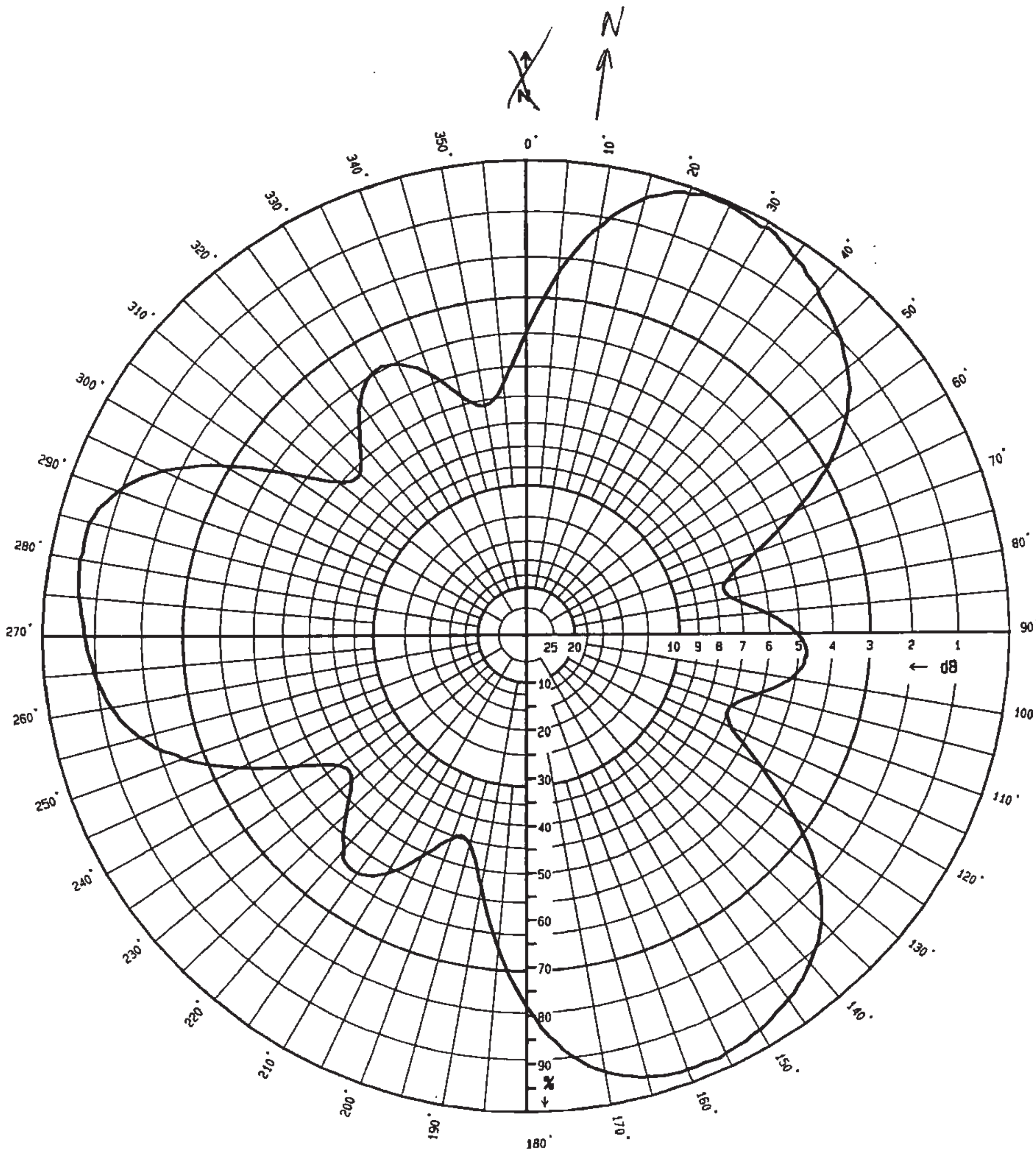


Factory test

Horizontal pattern

——— 653.00 MHz EMax/EMean: 2.68 dB

KATHREIN	12:54 / 28-Jun-99 / Name	Salt lake City DTV Broadcast Antenna	Typ Nr: 773 941 Blatt Nr:

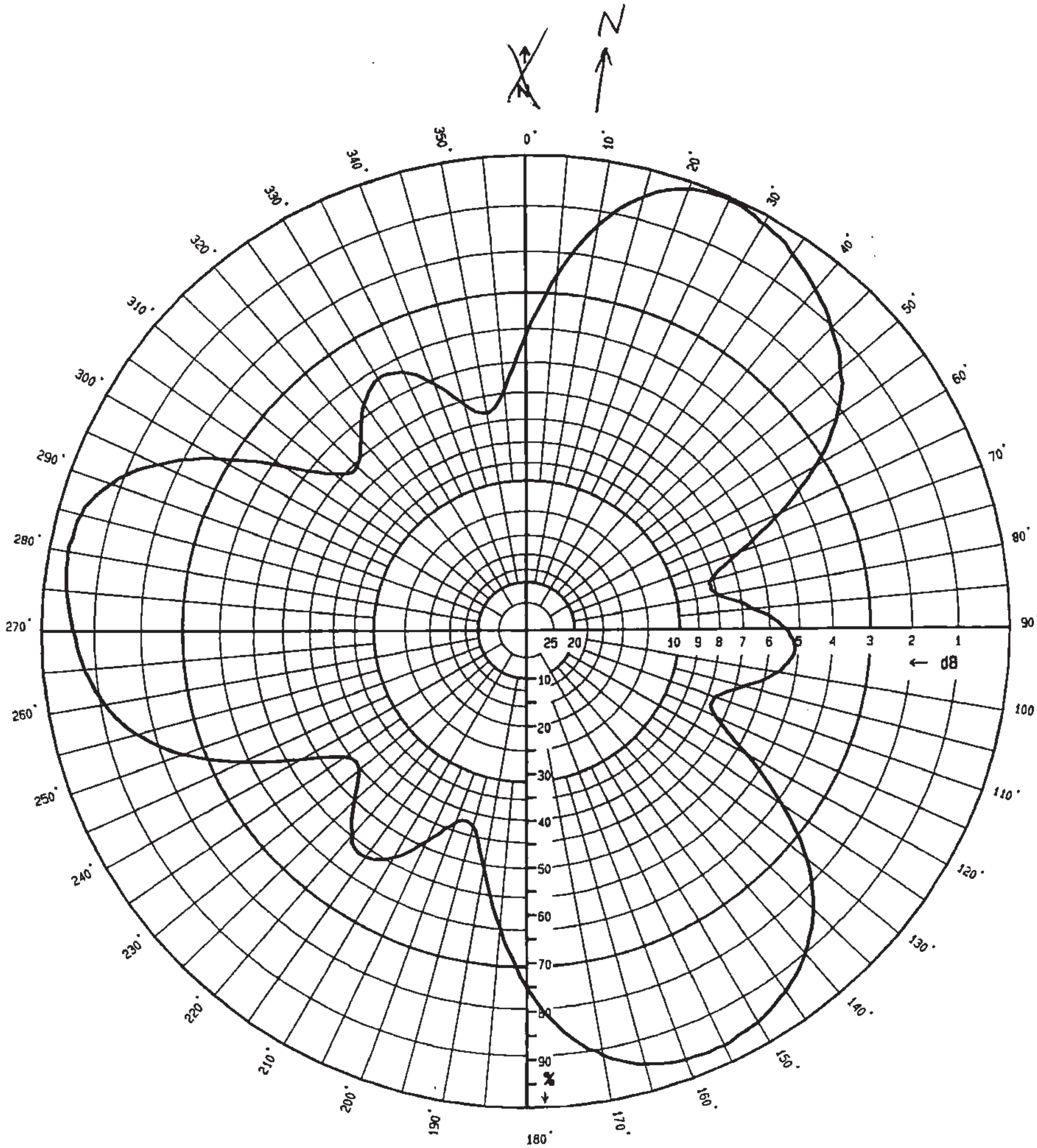


Factory test

Horizontal pattern

——— 665.00 MHz EMax/EMean: 2.71 dB

KATHREIN	12:54	Salt lake City	Typ Nr:
	28-Jun-99		773 941
	Name	DTV Broadcast Antenna	Blatt Nr:

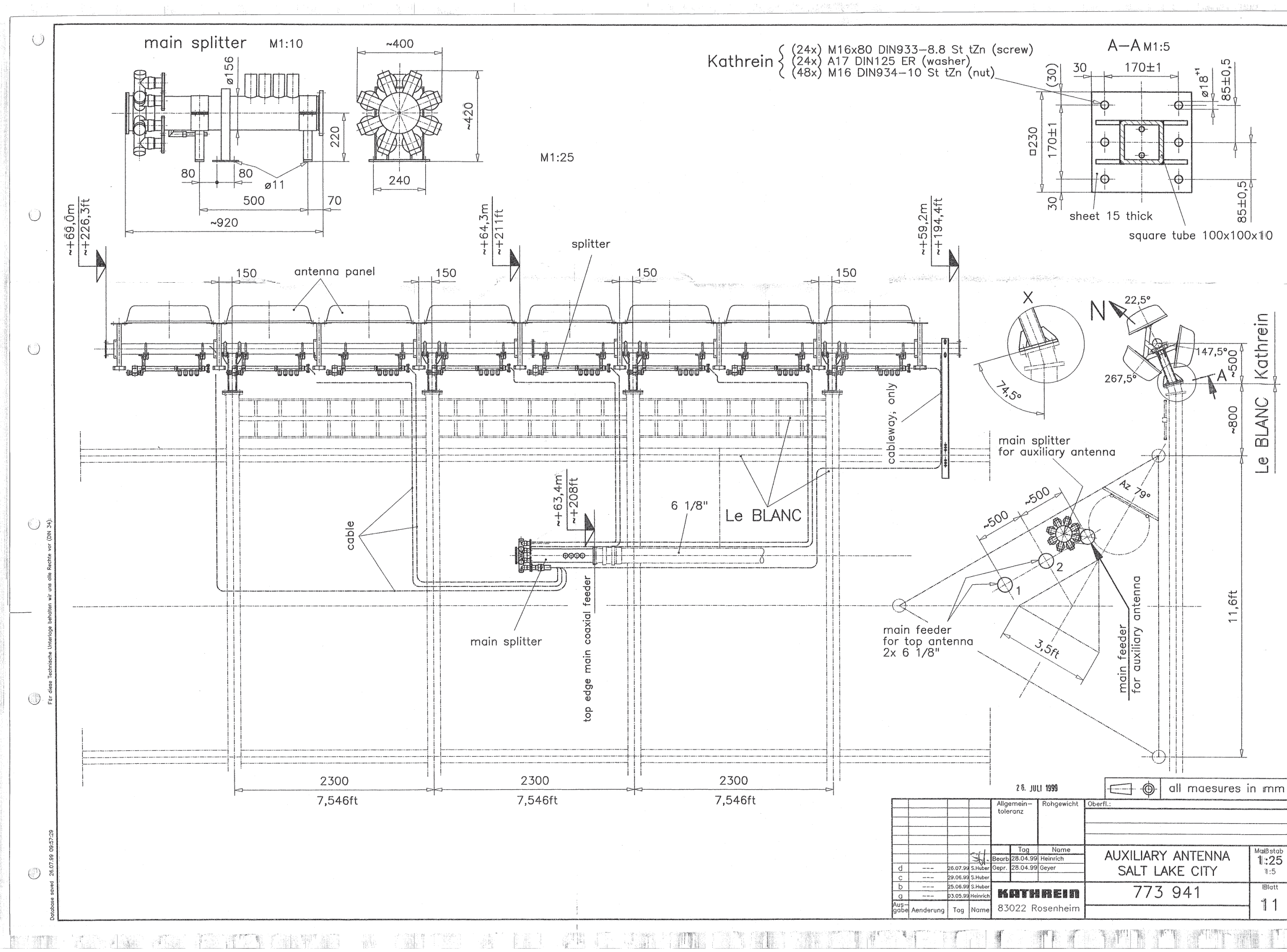


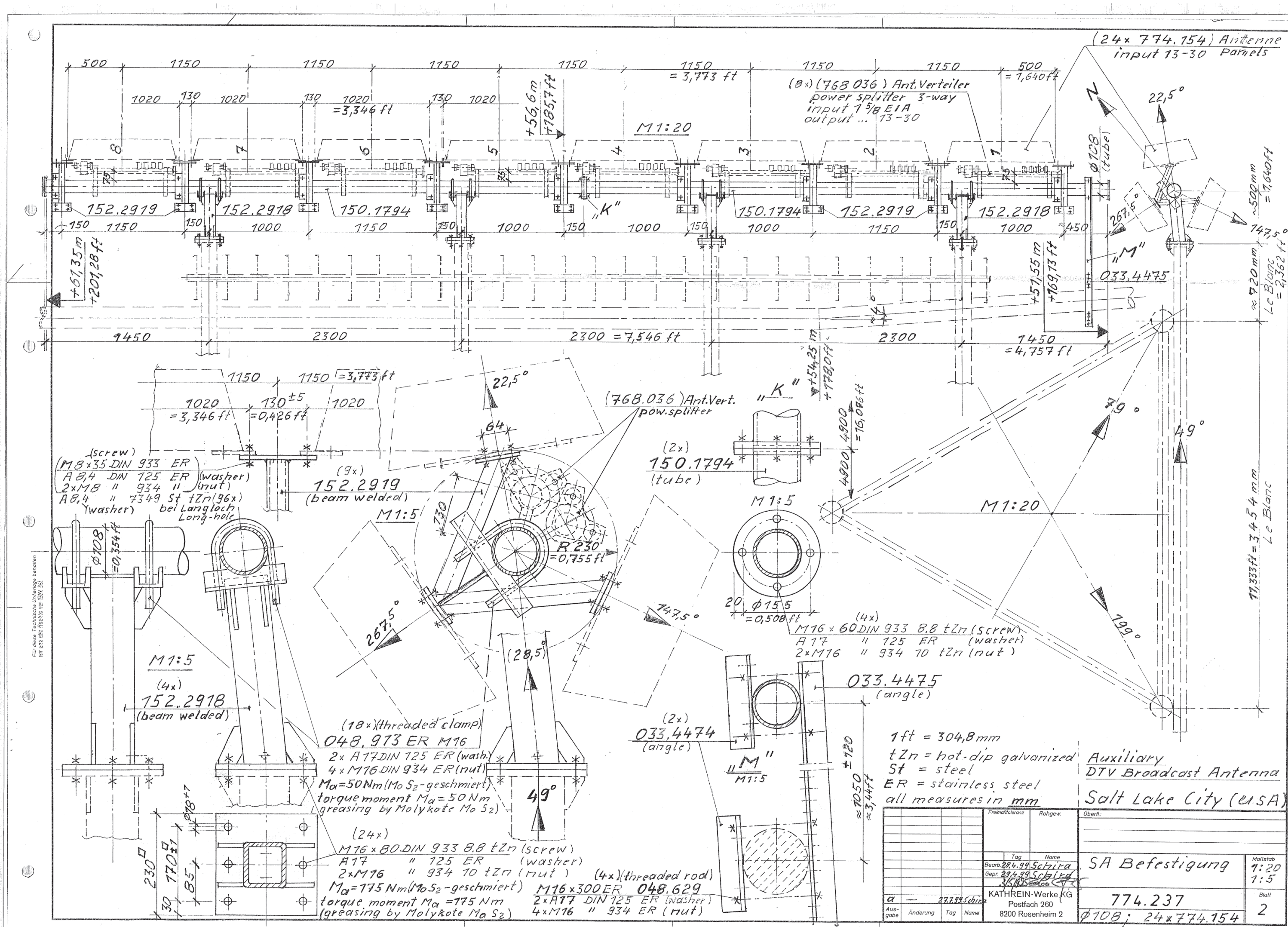
Factory test

Horizontal pattern

———— 677.00 MHz EMax/EMean: 2.85 dB

KATHREIN	12:54 28-Jun-99 Name	Salt lake City DTV Broadcast Antenna	Typ Nr: 773 941 Blatt Nr:


main splitter M1:10
~400
ø156
~420
220
80
80
ø11
240
500
70
~920
M1:25
Kathrein
(24x) M16x80 DIN933-8.8 St tZn (screw)
(24x) A17 DIN125 ER (washer)
(48x) M16 DIN934-10 St tZn (nut)
A-A M1:5
30
170±1
(30)
ø18
85±0,5
□230
170±1
30
sheet 15 thick
square tube 100x100x10
~+69,0m
~+226,3ft
~+64,3m
~+211ft
~+59,2m
~+194,4ft
splitter
antenna panel
150
X
74,5°
N
22,5°
147,5°
267,5°
A
~500
~800
Le BLANC
Kathrein
cableway, only
main splitter
for auxiliary antenna
Az 79°
~500
~500
2
1
~+63,4m
~+208ft
6 1/8"
Le BLANC
cable
main splitter
top edge main coaxial feeder
main feeder
for top antenna
2x 6 1/8"
3,5ft
main feeder
for auxiliary antenna
11,6ft
2300
7,546ft
26. JULI 1999
all maesures in mm
Allgemein-toleranz
Rohgewicht
Oberfl.:
Tag
Name
Bearb. 28.04.99 Heinrich
Gepr. 28.04.99 Geyer
d --- 26.07.99 S.Huber
c --- 29.06.99 S.Huber
b --- 25.06.99 S.Huber
a --- 03.05.99 Heinrich
Aus-gabe Aenderung Tag Name
AUXILIARY ANTENNA
SALT LAKE CITY
Maßstab
1:25
1:5
KATHREIN
83022 Rosenheim
773 941
Blatt
11


(24x 774.154) Antenne
input 13-30 Panels
(8x) (768 036) Ant.Verteiler
power splitter 3-way
input 1 5/8 EIA
output ... 13-30
M1:20
500
1150
= 3,773 ft
= 1,640 ft
1020
130
= 3,346 ft
+56,6 m
+185,7 ft
Ø108 (tube)
152.2919
152.2918
150.1794
„K"
„M"
033.4475
22,5°
267,5°
147,5°
≈ 500 mm = 1,640 ft
≈ 720 mm = 2,362 ft
Le Blanc
+61,35 m
+201,28 ft
+51,55 m
+169,13 ft
+54,25 m
+178,01 ft
1450
2300
2300 = 7,546 ft
= 4,757 ft
1000
150
450
130±5
= 0,426 ft
(768.036) Ant.Vert.
pow.splitter
(screw)
M 8x35 DIN 933 ER
A 8,4 DIN 125 ER (washer)
2xM8 " 934 " (nut)
A8,4 " 7349 St tZn (96x)
(washer)
bei Langloch
Long-hole
(9x)
152.2919
(beam welded)
64
730
R 230
= 0,755 ft
M1:5
(28,5)
49°
4800
= 16,076 ft
(2x)
150.1794
(tube)
Ø155
= 0,508 ft
20
(4x)
M16 x 60 DIN 933 8.8 tZn (screw)
A17 " 125 ER (washer)
2xM16 " 934 10 tZn (nut)
79°
199°
11,333 ft = 3454 mm
Ø108
= 0,354 ft
(4x)
152.2918
(beam welded)
(18x) (threaded clamp)
048.973 ER M16
2x A17 DIN 125 ER (wash.)
4x M16 DIN 934 ER (nut)
M_α = 50 Nm (Mo S_2-geschmiert)
torque moment M_α = 50 Nm
greasing by Molykote Mo S_2)
(24x)
M16 x 80 DIN 933 8.8 tZn (screw)
A17 " 125 ER (washer)
2xM16 " 934 10 tZn (nut)
M_α = 175 Nm (Mo S_2-geschmiert)
torque moment M_α = 175 Nm
(greasing by Molykote Mo S_2)
(4x) (threaded rod)
M16 x 300 ER 048.629
2x A17 DIN 125 ER (washer)
4x M16 " 934 ER (nut)
230
170
85
30
033.4475
(angle)
(2x)
033.4474
(angle)
„M"
M1:5
±120
≈1050
≈3,44 ft
1 ft = 304,8 mm
tZn = hot-dip galvanized
St = steel
ER = stainless steel
all measures in mm
Auxiliary
DTV Broadcast Antenna
Salt Lake City (USA)
Freimaßtoleranz
Rohgew.
Oberfl.
Tag
Name
Bearb. 28.4.99 Schira
Gepr. 29.4.99 Schira
SA Befestigung
Maßstab
1:20
1:5
KATHREIN-Werke KG
Postfach 260
8200 Rosenheim 2
774.237
Blatt
2
a
27.7.99 Schira
Aus-gabe
Änderung
Tag
Name
Ø108 ; 24x774.154
Für diese Technische Unterlage behalten wir uns alle Rechte vor (DIN 34)

Directional Antenna
470 – 860 MHz
774 040, 774 041, 774 046, 774 047

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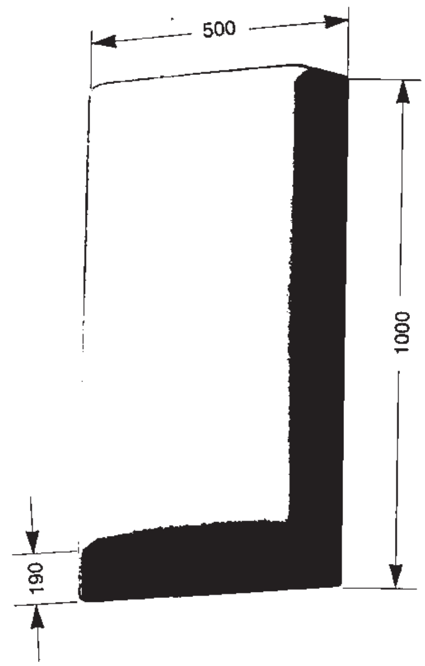
- Horizontally polarized broadband directional antenna made of aluminum and protected by a fiberglass cover.



Type No. white / orange	774 040 / 774 041	774 046 / 774 047
Input (from below)	7-16 female	13-30 female
Frequency range	470 – 860 MHz	
VSWR	s < 1.1	
Gain (ref. λ/2-dipole)	11 dB at mid-band	
Impedance	50 Ω	
Polarization	Horizontal	
Max. power	1 kW	2 kW
Weight	12 kg	
Wind load (at 160 km/h)	Frontal: 815 N Lateral: 260 N	
Max. wind velocity	225 km/h	
Packing size	1062 x 562 x 294 mm	
Height/width/depth	1000 x 500 x 190 mm	

Material: Reflector screen and dipoles: Weather-resistant aluminum.
Protective cover: Fiberglass.
Attachment plate: Hot-dip galvanized steel.

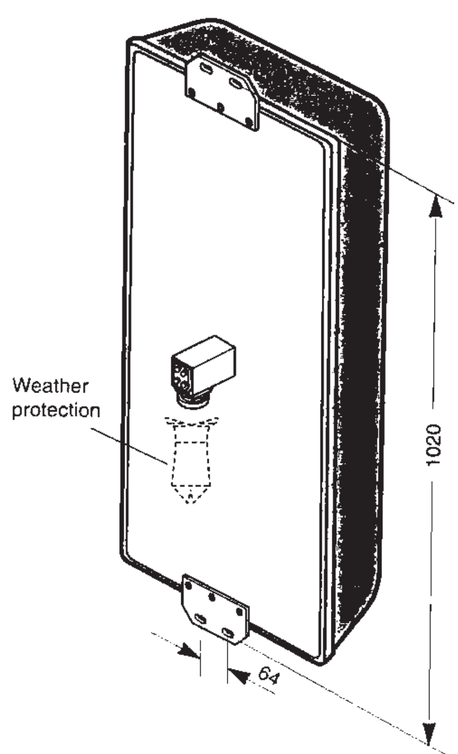
Attachment: Using M 8 x 35 screws (supplied) to suitable attachment construction.
Mounting dimensions upon request.

Grounding: Via mounting parts.

Ice protection: The dipoles remain fully functioning even in icy conditions as the fiberglass cover protects the whole antenna and also the antenna is of a very robust design.

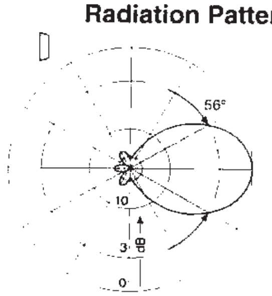
Combinations: The antenna is particularly suitable for use in combinations in order to achieve various radiation patterns.

Scope of supply: The 7-16 female connectors are supplied with one weather protection unit.

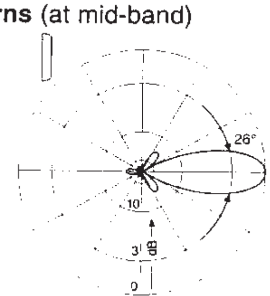


All dimensions in mm

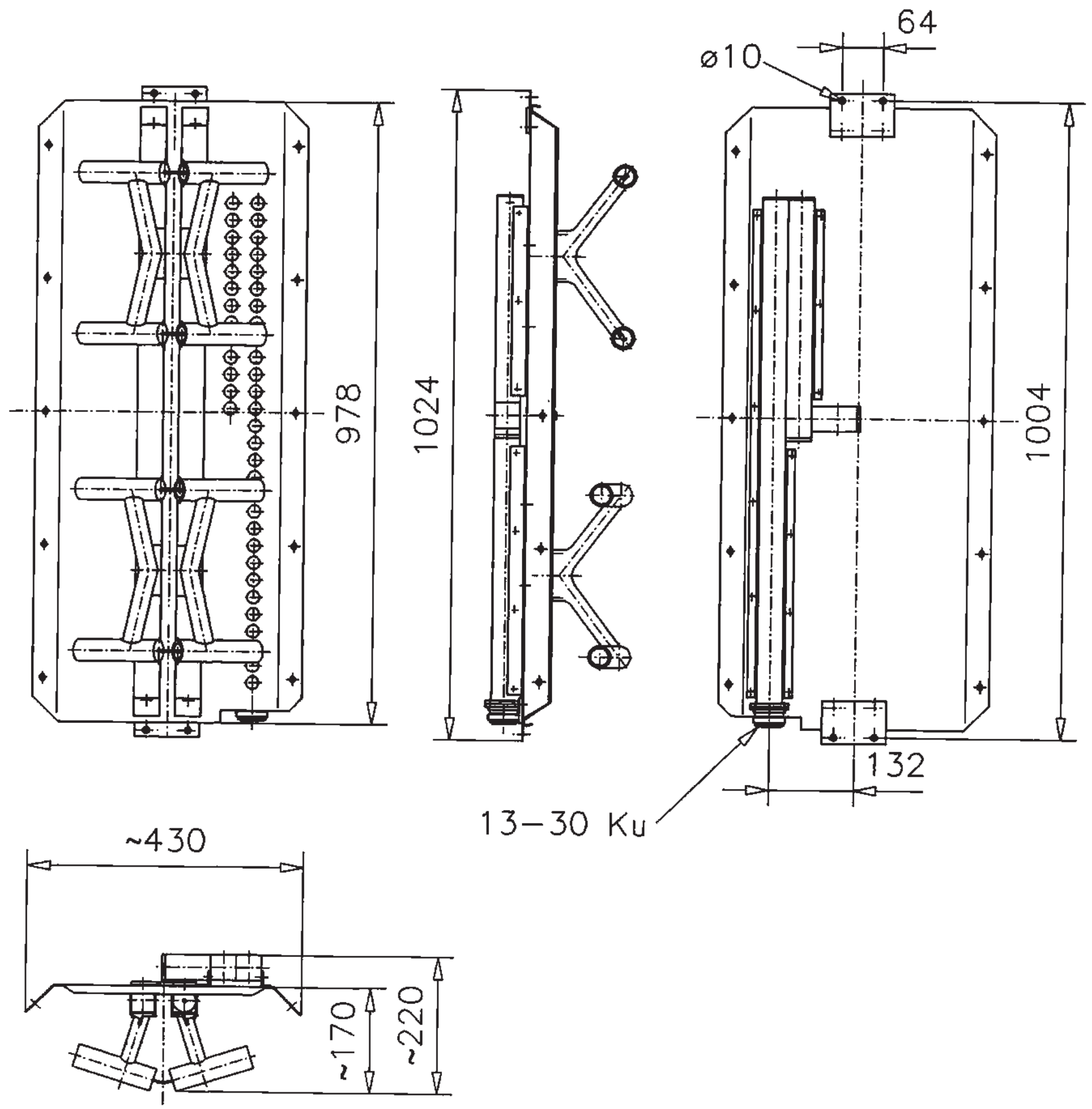
Radiation Patterns (at mid-band)



in E-plane
Horizontal Pattern



in H-plane
Vertical Pattern



IS 30. JUNI 1999

Allgemein-toleranz	Rohgewicht	Oberfl.:	
	Tag	Name	
Bearb.	17.09.96	S.Huber	
Gepr.	24.9.96	Geyer	
	26.9.96		
KATHREIN		Richtantenne Directional Antenna	Maßstab 1:10
83022 Rosenheim		771 014	Blatt 1
		f/MHz470–860	

Aus-gabe	Aenderung	Tag	Name

Database saved 17.09.96 14:47:38

CAD generated

High Power Splitters
47 ... 88 MHz, 87.5 – 108 MHz, 174 – 230 MHz, 470 – 860 MHz

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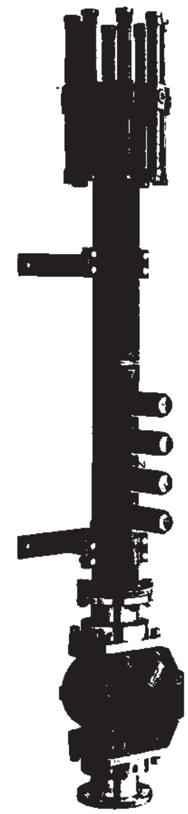
- All power splitters are matched in the whole frequency range with VSWR < 1.05.
- The additional tuning unit can be used to optimize the input impedance of the antenna system on site.
- Special versions with unequal power splitting, alternative connectors or up to 16 outputs are available on request.



Example:
Tunable 16-way splitter with different power splitting and with a measuring link.

Frequency range	**47 ... 88 MHz**	**87.5 – 108 MHz**	**174 – 230 MHz**	**470 – 860 MHz**
Length approx.	2400 mm	1700 mm	850 mm	700 mm
with tuning unit approx.	2600 mm	–	1500 mm	1000 mm
Input power	1 – 200 kW	1 – 200 kW	1 – 150 kW	1 – 70 kW
Connectors	7-16, 13-30, 7/8″, 1 5/8″, 3 1/8″, 4 1/2″, 6 1/8″ EIA flange (or other connectors upon request)			
Impedance	50 Ω			
VSWR	< 1.05 in each frequency range			
Insertion loss	< 0.05 dB			

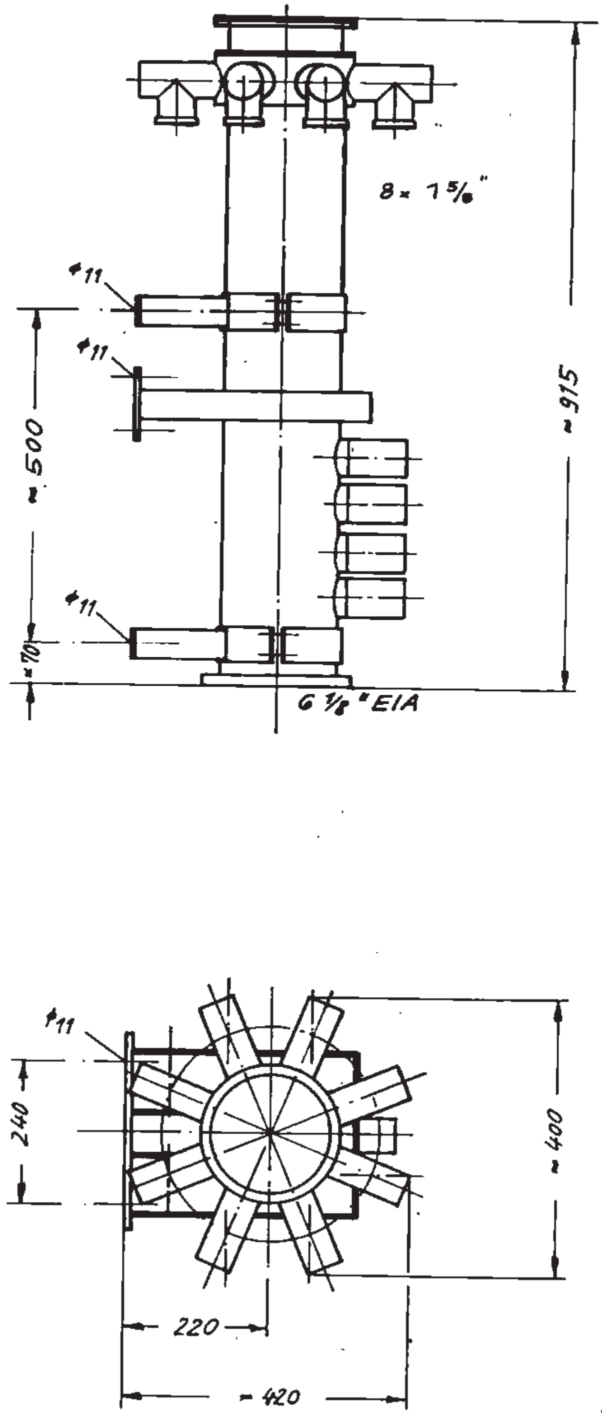
Material: Outer conductor: Brass with protective grey paint.
Inner conductor: Brass or aluminum.

Mounting: On flat surfaces using the standard mounting equipment consisting of 2 bracket arms (supplied) or steel frame (order separately).

Pressurization: The pressurization-tight transformer casing has an opening to balance out excess pressure.
For pressurized operation (typically at 300 mbar) this opening must be closed with the supplied sealing screw.

Weather protection: The RF connectors can be additionally protected with the sealing tape (please order separately).

Example:
4-way splitter with standard-attachment.



IS 30. JUNI 1999

				Freimaßtoleranz	Rohgew. %	Oberfl.:
				85	Tag	Name
				Bearb.	18.9.	
				Gepr.	25.9.	
b	6504/6272	8.2.90	v.			
a	3: neu erstellt	18.9.85		KATHREIN-Werke KG 82 Rosenheim 2		
Aus-gabe	Änderung	Tag	Name			

Ant. Vert.

Maßstab 1:10

752 787

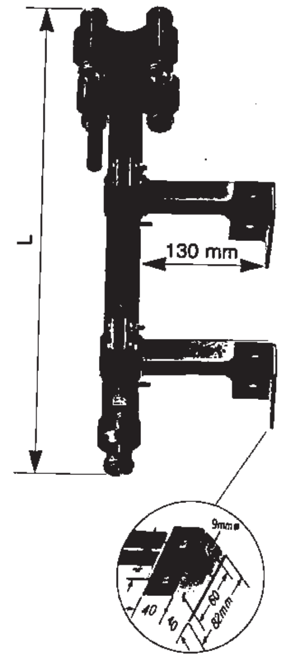
Blatt 1

f/MHz: 470 - 860

Medium Power Splitters
47 ... 88 MHz, 87.5 – 108 MHz, 174 – 230 MHz, 470 – 860 MHz

KATHREIN
Antennen · Electronic

- All power splitters are matched in the whole frequency range with VSWR < 1.05.
- The additional tuning unit can be used to optimize the input impedance of the antenna system on site.
- Special versions with unequal power splitting, alternative connectors or up to 12 outputs are available on request.
- Power splitters for 66 – 72 MHz, 76 – 82 MHz, 82 – 88 MHz are available on request.

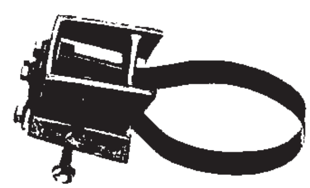


Frequency range	47 ... 88 MHz	87.5 – 108 MHz	174 – 230 MHz	470 – 860 MHz
Length approx.	2400 mm	1650 mm	845 mm	560 mm
with tuning unit approx.	2600 mm	–	1500 mm	860 mm
Input power	3 kW	2.5 kW	2 kW	1 kW
Connectors	7-16 female (other connectors upon request)			
Impedance	50 Ω			
VSWR	< 1.05			
Insertion loss	< 0.05 dB			

Material: Outer conductor: Brass with protective grey paint.
Inner conductor: Brass or aluminum.

Mounting: On flat surfaces using the standard mounting equipment supplied (Bracket arm, 130 mm). To tubes of 30 – 340 mm diameter by means of 2 tension band clamps Type No. 759 044 (please order separately).

759 044

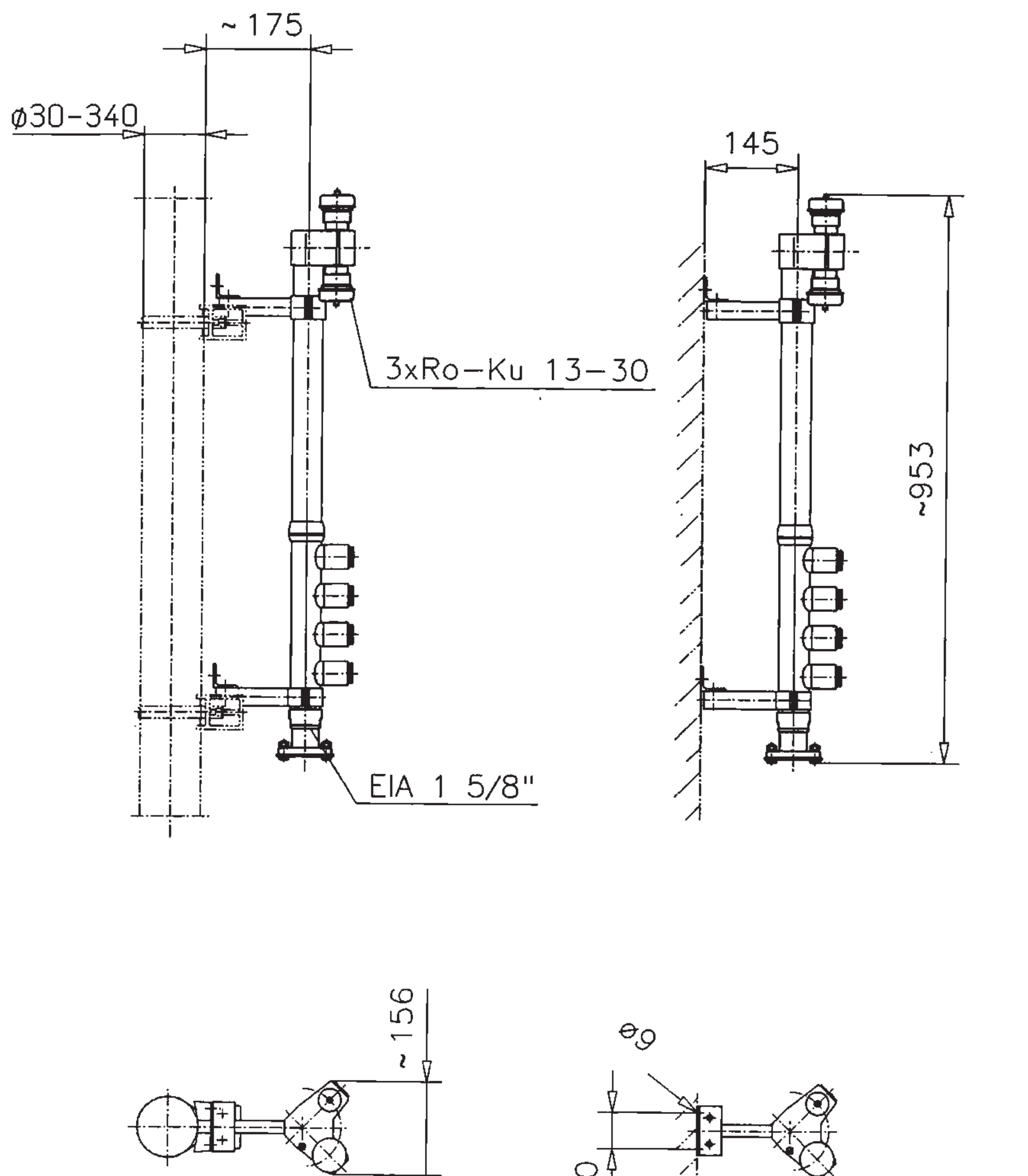


Pressurization: The pressurization-tight transformer casing has an opening to balance out excess pressure.
For pressurized operation (typically at 300 mbar) this opening must be closed with the supplied sealing screw.

Weather protection: The RF connectors can be additionally protected with the sealing tape (please order separately).

Number of outputs	Type Numbers of available power splitters – without tuning unit						– with tuning unit	
	47 – 54 MHz	54 – 61 MHz	60 – 68 MHz	87.5 – 108 MHz	174 – 230 MHz	470 – 860 MHz	174 – 230 MHz	470 – 860 MHz
2	765 814	765 814	765 814	770 144	770 510	764 485	770 516	764 493
3	765 815	765 820	765 825	770 145	770 511	764 486	770 517	764 494
4	765 816	765 821	765 826	770 146	770 512	764 487	770 518	764 495
5	765 817	765 822	765 827	770 147	770 513	764 488	770 519	764 496
6	765 818	765 823	765 828	770 148	770 514	764 489	770 520	764 497
8	765 819	765 824	765 829	770 149	770 515	764 491	770 521	764 499

Further



IS 30.JUNI 1999

				Allgemein-toleranz	Rohgewicht	Oberfl.:	
					Tag	Name	Maßstab
				Bearb.	18.08.93	VAN TRAN	1:10
				Gepr.	19.08.93	Sagberger	
					19.08.93	Schuster	
a	n.e.ÄM 51129	24.03.95	van Tran	KATHREIN		768 036	Blatt
Aus-gabe	Aenderung	Tag	Name	83022 Rosenheim		f/MHz:470-860 P=1; 3x	1

Ant. Vert.

Database saved 24.03.95 08:27:30

Datenblatt / Data Sheet

HF 1 5/8" CuY - 50 Ohm (PTFE)

HTT 51.018-03

FLEXWELL®-Kabel / FLEXWELL® Cable

Aufbau / Structure

Innenleiter:	Kupferwellrohr	18.6	mm	Inner conductor:	corrugated copper tube
Isolierung:	PTFE Wendel	39.7	mm	Dielectric:	PTFE helix
Außenleiter:	Kupferwellrohr	46.5	mm	Outer conductor:	corrugated copper tube
Mantel:	Polyvinylchlorid	50.7	mm	Jacket:	Polyvinylchlorid

Mechanische Eigenschaften / Mechanical Properties

Gewicht, ca.	1.4	kg/m	Weight, approx.
Min. Biegeradius, einmalige Biegung	180	mm	Min. bending radius, single bending
Min. Biegeradius, wiederholte Biegung	550	mm	Min. bending radius, repeated bending
Min. Biegeradius, mobiler Einsatz	900	mm	Min. bending radius, mobile application
Zulässiger Betriebs-(Prüf) überdruck	0.5(1)	bar	Max. operating pressure (test pressure)
Max. Zugkraft	1500	N	Max. tensile force
Empfohlener Schellenabstand normal	1.2	m	Recommended clamp spacing normal
an kritischen Stellen und Bögen	0.8	m	at critical areas and bends
Temperaturbereich bei der Montage	-25°C - +60°C		Recommended temperature range during installation

Lieferlängen auf Anfrage / Factory lengths on request

Elektrische Eigenschaften / Electrical Properties

Wellenwiderstand	50 ± 0.5	Ohms	Characteristic impedance
relative Ausbreitungsgeschwindigkeit	95	%	Relative propagation velocity
Kapazität	71	pF/m	Capacity
maximale Betriebsfrequenz	3000	MHz	Max. operating frequency
Grenzfrequenz	3100	MHz	Cut-off frequency
maximale Spitzenleistung	270	kW	Peak power rating
max. HF-Betriebsspannung, Scheitelwert	5.2	kV	Peak RF voltage rating
Gleichstromwiderstand, Innenleiter	1.1	Ohms/km	DC-resistance inner conductor
Gleichstromwiderstand, Außenleiter	0.31	Ohms/km	DC-resistance outer conductor

Dämpfung in dB/100m bei 20°C Kabeltemperatur / Attenuation dB/100m at 20°C cable temperature

0.5	MHz	0.044	20	MHz	0.284	300	MHz	1.16	1500	MHz	2.8
1.0	MHz	0.063	30	MHz	0.35	400	MHz	1.35	2000	MHz	3.3
1.6	MHz	0.079	50	MHz	0.45	450	MHz	1.44	3000	MHz	4.2
3.0	MHz	0.109	100	MHz	0.65	500	MHz	1.52			
6.0	MHz	0.154	150	MHz	0.80	800	MHz	1.97			
10.0	MHz	0.200	200	MHz	0.93	1000	MHz	2.23			

Zulässige mittlere Leistung in kW bei 40°C Umgebungstemperatur / Mean Power rating in kW at 40°C ambient temperature

0.5	MHz	270	20	MHz	62	300	MHz	15.4	1500	MHz	6.5
1.0	MHz	270	30	MHz	50	400	MHz	13.3	2000	MHz	5.6
1.6	MHz	220	50	MHz	39	450	MHz	12.5	3000	MHz	4.4
3.0	MHz	161	100	MHz	27.2	500	MHz	11.8			
6.0	MHz	113	150	MHz	22.1	800	MHz	9.2			
10.0	MHz	88	200	MHz	19.0	1000	MHz	8.1			

HF 7/8" Cu2Y - 50 Ohm
HF 7/8" CuH - 50 Ohm

HTT 51.006-04

FLEXWELL®-Kabel / FLEXWELL® Cable

Aufbau / Structure

Innenleiter:	Cu-Rohr	9.1	mm	Inner conductor:	copper tube
Isolierung:	Wendel aus Niederdruck-Polyäthylen	20.1	mm	Dielectric:	high density polyethylene helix
Außenleiter:	Kupferwellrohr	25.4	mm	Outer conductor:	corrugated copper tube
Mantel:	Polyäthylen, schwarz	28.8	mm	Jacket:	polyethylene, black

Mantelausführungen / Jacketing options

erfüllt / meets:	IEC 754 - 1 / -2	IEC 1034	IEC 332 - 1	IEC 332 - 3/C
	Rauchgase: halogenfrei, nicht korrosiv smoke emission: halogen free, not corrosive	geringe Rauchentwicklung low smoke emission	flammwidrig flame retardant	feuerhemmend fire retardant
Suffix				
Cu2Y	+	-	-	-
CuH	+	+	+	+

Mechanische Eigenschaften / Mechanical Properties

Gewicht, ca.	0.87	kg/m	Weight, approx.
Min. Biegeradius, einmalige Biegung	100	mm	Min. bending radius, single bending
Min. Biegeradius, wiederholte Biegung	250	mm	Min. bending radius, repeated bending
Min. Biegeradius, mobiler Einsatz	600	mm	Min. bending radius, mobile application
Zulässiger Betriebs-(Prüf) überdruck	0.5(1)	bar	Max. operating pressure (test pressure)
Max. Zugkraft	2000	N	Max. tensile force
Empfohlene max. Ziehlänge pro Ziehstrumpf bei Montage	70	m	Recommended pulling length per hoisting stocking during installation
Empfohlener Schellenabstand normal	0.9	m	Recommended clamp spacing normal
an kritischen Stellen und Bögen	0.5	m	at critical areas and bends
Temperaturbereich bei der Montage für Mantelausführung Cu2Y	-40°C - +60°C		Recommended temperature range during installation for jacketing option Cu2Y
CuH	-25°C - +60°C		CuH

Elektrische Eigenschaften / Electrical Properties

Wellenwiderstand	50 ± 0.5	Ohms	Characteristic impedance
relative Ausbreitungsgeschwindigkeit	93	%	Relative propagation velocity
Kapazität	71	pF/m	Capacity
maximale Betriebsfrequenz	3000	MHz	Max. operating frequency
Grenzfrequenz	6000	MHz	Cut-off frequency
maximale Spitzenleistung	73	kW	Peak power rating
max. HF-Betriebsspannung, Scheitelwert	2.7	kV	Peak RF voltage rating
Gleichstromwiderstand, Innenleiter	0.77	Ohms/km	DC-resistance inner conductor
Gleichstromwiderstand, Außenleiter	0.60	Ohms/km	DC-resistance outer conductor

Dämpfung in dB/100m bei 20°C Kabeltemperatur / Attenuation dB/100m at 20°C cable temperature

0.5 MHz	0.081	20 MHz	0.52	300 MHz	2.08	1500 MHz	4.9
1.0 MHz	0.115	30 MHz	0.64	400 MHz	2.42	2000 MHz	5.8
1.6 MHz	0.146	50 MHz	0.83	450 MHz	2.58	3000 MHz	7.2
3.0 MHz	0.200	100 MHz	1.18	500 MHz	2.72		
6.0 MHz	0.283	150 MHz	1.45	800 MHz	3.50		
10.0 MHz	0.370	200 MHz	1.69	1000 MHz	3.90		

Zulässige mittlere Leistung in kW bei 40°C Umgebungstemperatur / Mean Power rating in kW at 40°C ambient temperature

0.5 MHz	73	20 MHz	19.2	300 MHz	4.8	1500 MHz	2.08
1.0 MHz	73	30 MHz	15.7	400 MHz	4.2	2000 MHz	1.79
1.6 MHz	68	50 MHz	12.1	450 MHz	3.9	3000 MHz	1.43
3.0 MHz	50	100 MHz	8.5	500 MHz	3.7		
6.0 MHz	35	150 MHz	6.9	800 MHz	2.91		
10.0 MHz	27.2	200 MHz	6.0	1000 MHz	2.59		