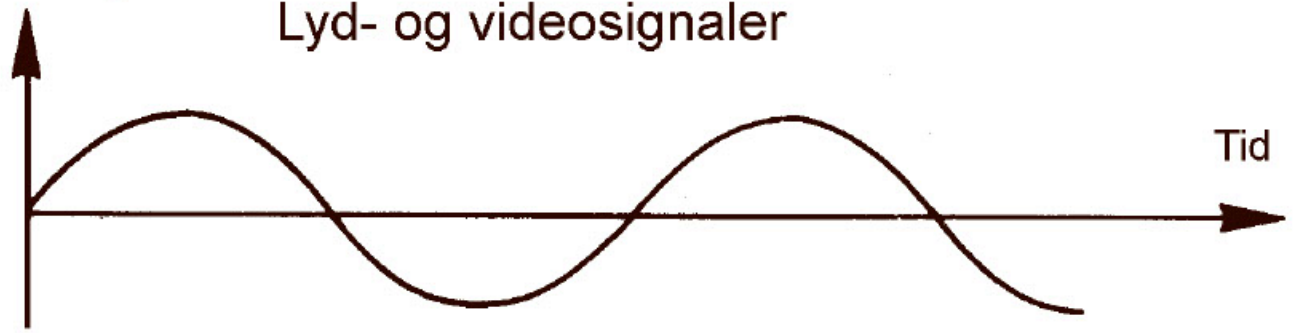
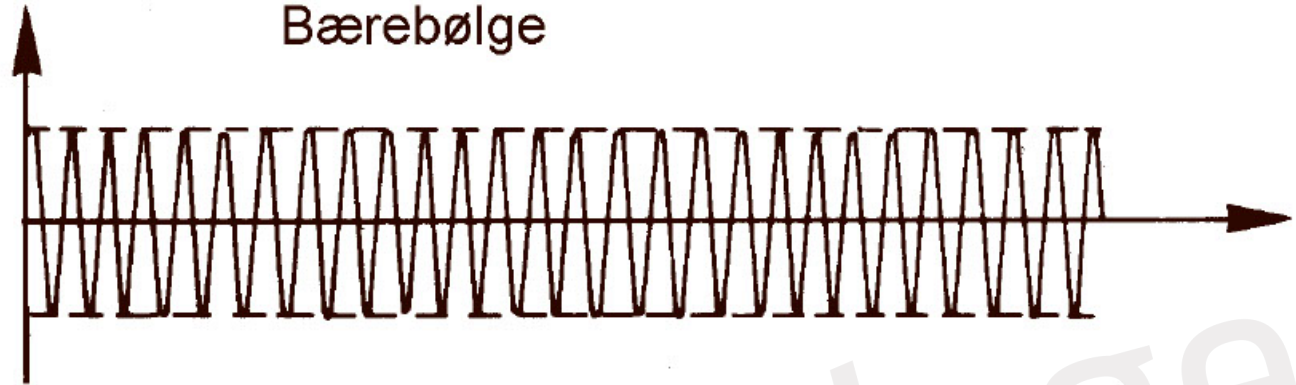


Spenning

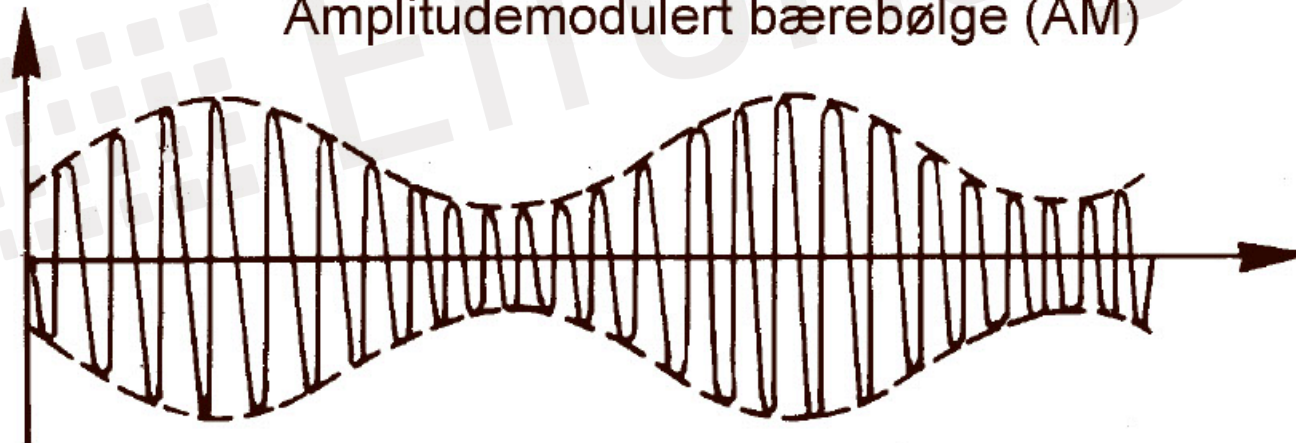
Lyd- og videosignaler



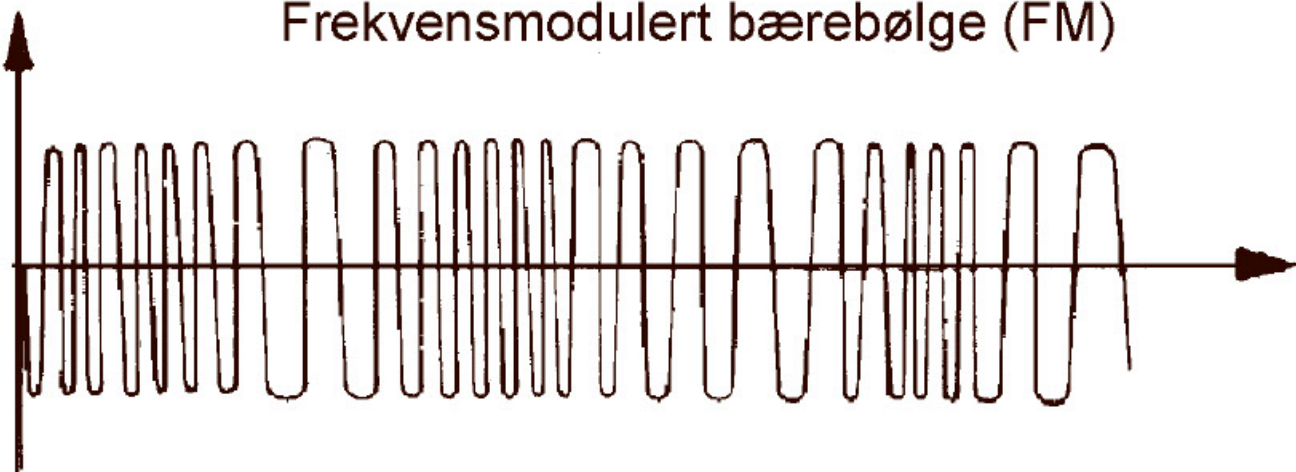
Bærebølge



Amplitudemodulert bærebølge (AM)



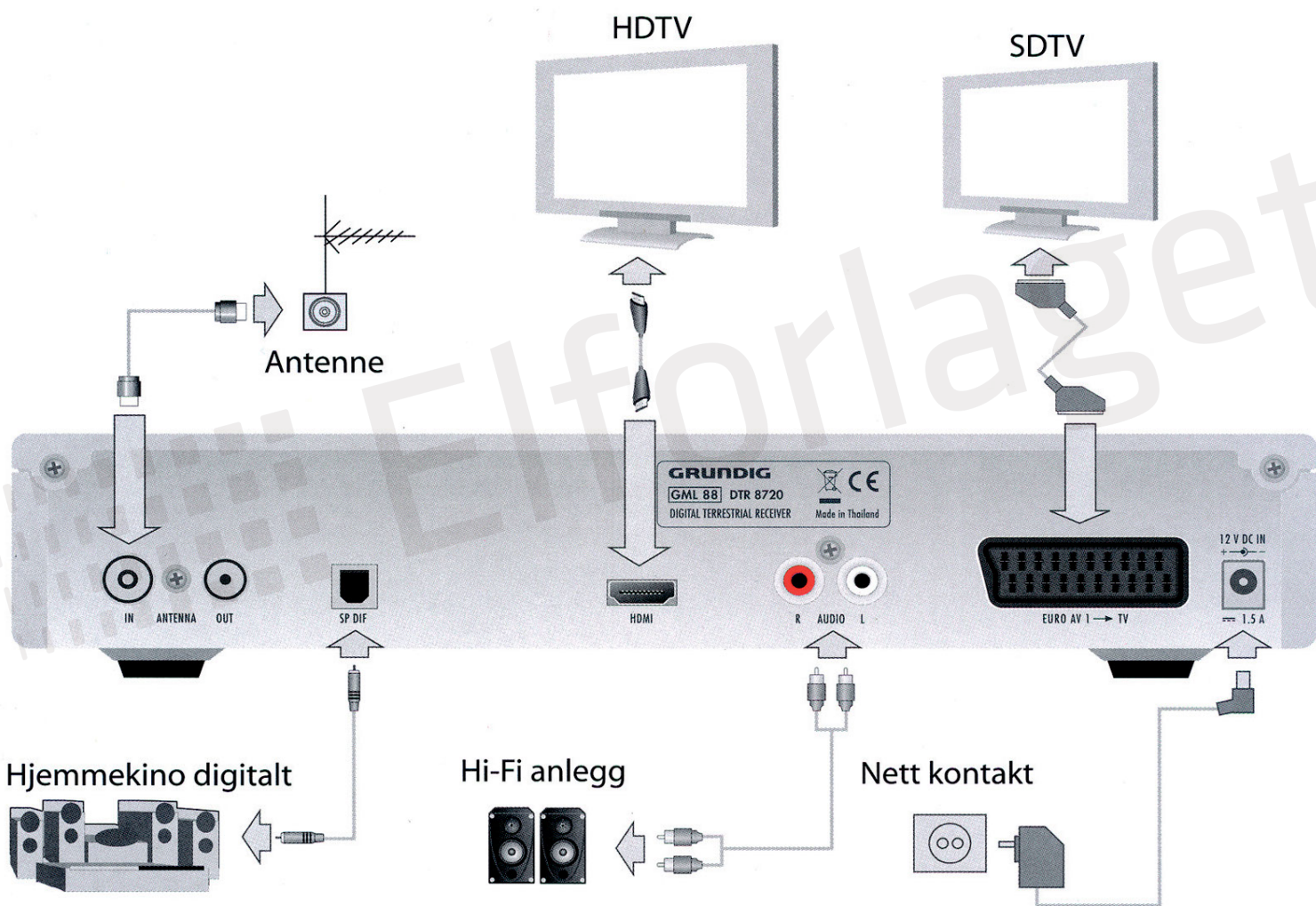
Frekvensmodulert bærebølge (FM)



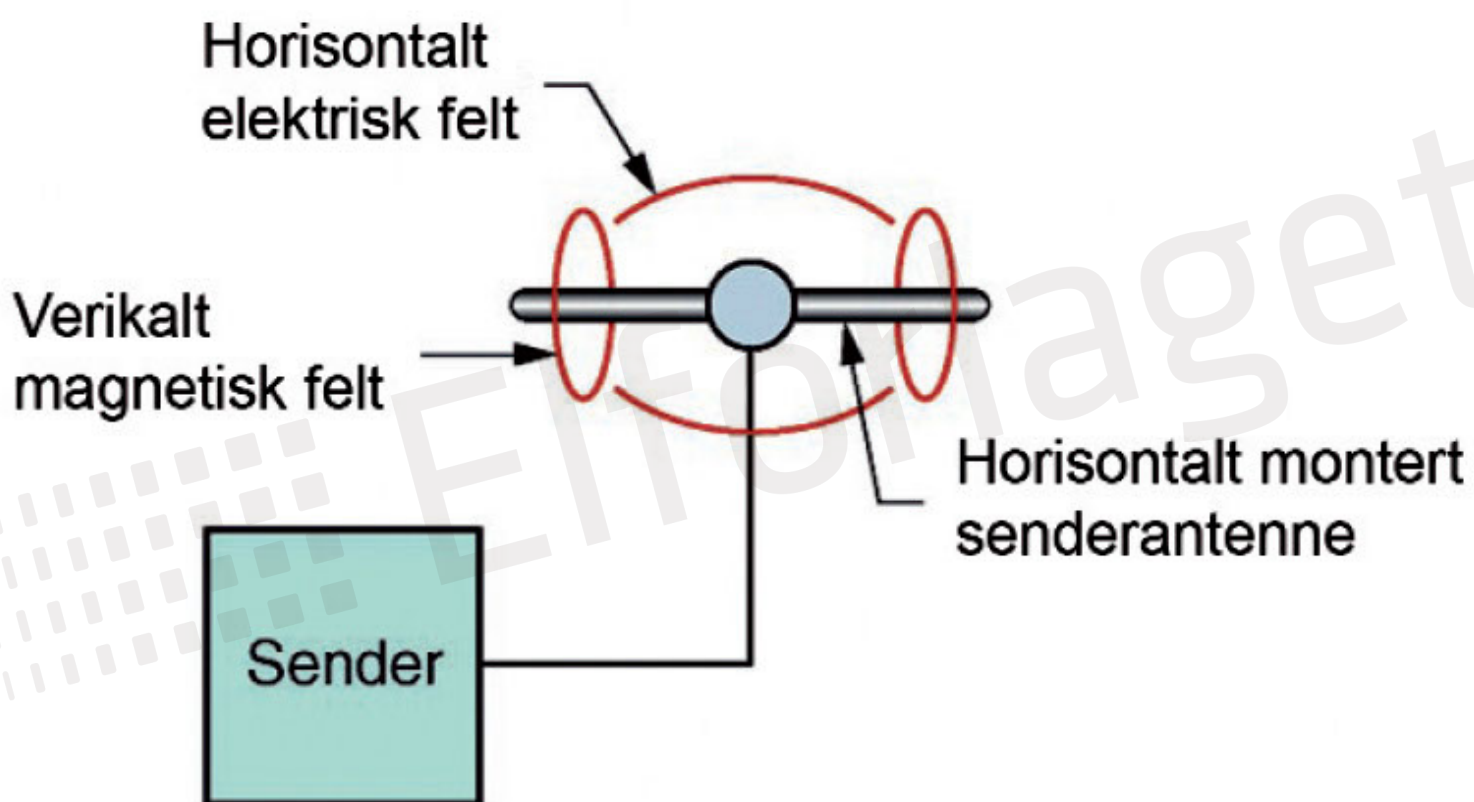


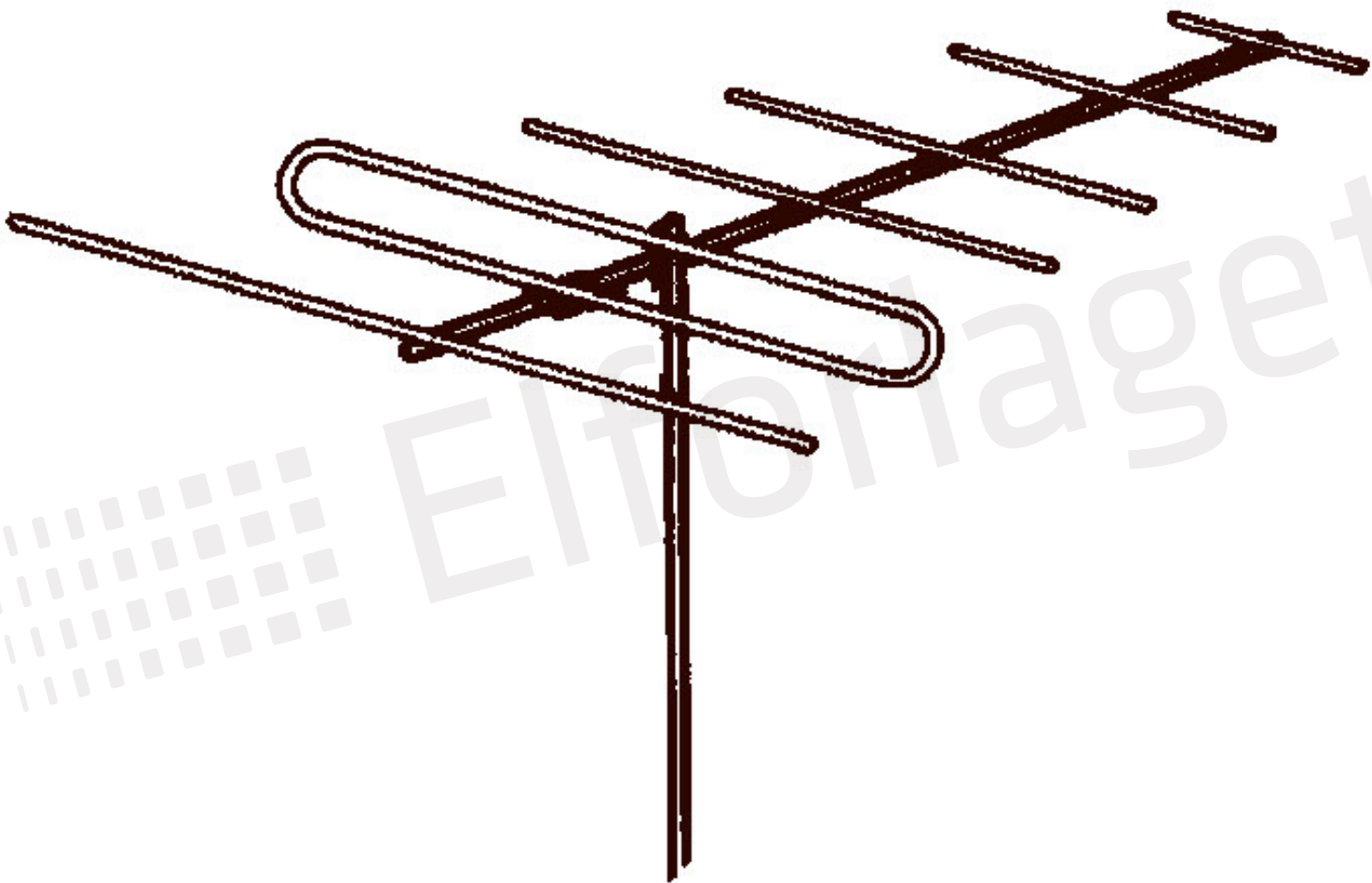


Tilkoblingskjema









Elforlaget

Radiobølgenes frekvensområder og frekvensbetegnelser

Frekvensområde	Bølgelengde	Betegnelse	For-kortelse	Betydning av forkortelsene
10 - 30 kHz	30 - 10 km	Langbølger	VLF	Very low frequencies
30 - 300 kHz	10 - 1 km		LF	Low frequencies
300 - 3000 kHz	1000 - 100 m	Mellombølger	MF	Medium frequencies
3 - 30 Mhz	100 - 10 m	Kortbølger	HF	High frequencies
30 - 300 MHz	10 - 1 m	Ultrakorte bølger	VHF	Very high frequencies
300 - 3000 MHz	100 - 10 cm	Ultrakorte bølger	UHF	Ultra high frequencies
3 - 30 GHz	10 - 1 cm	Ultrakorte bølger	SHF	Super high frequencies

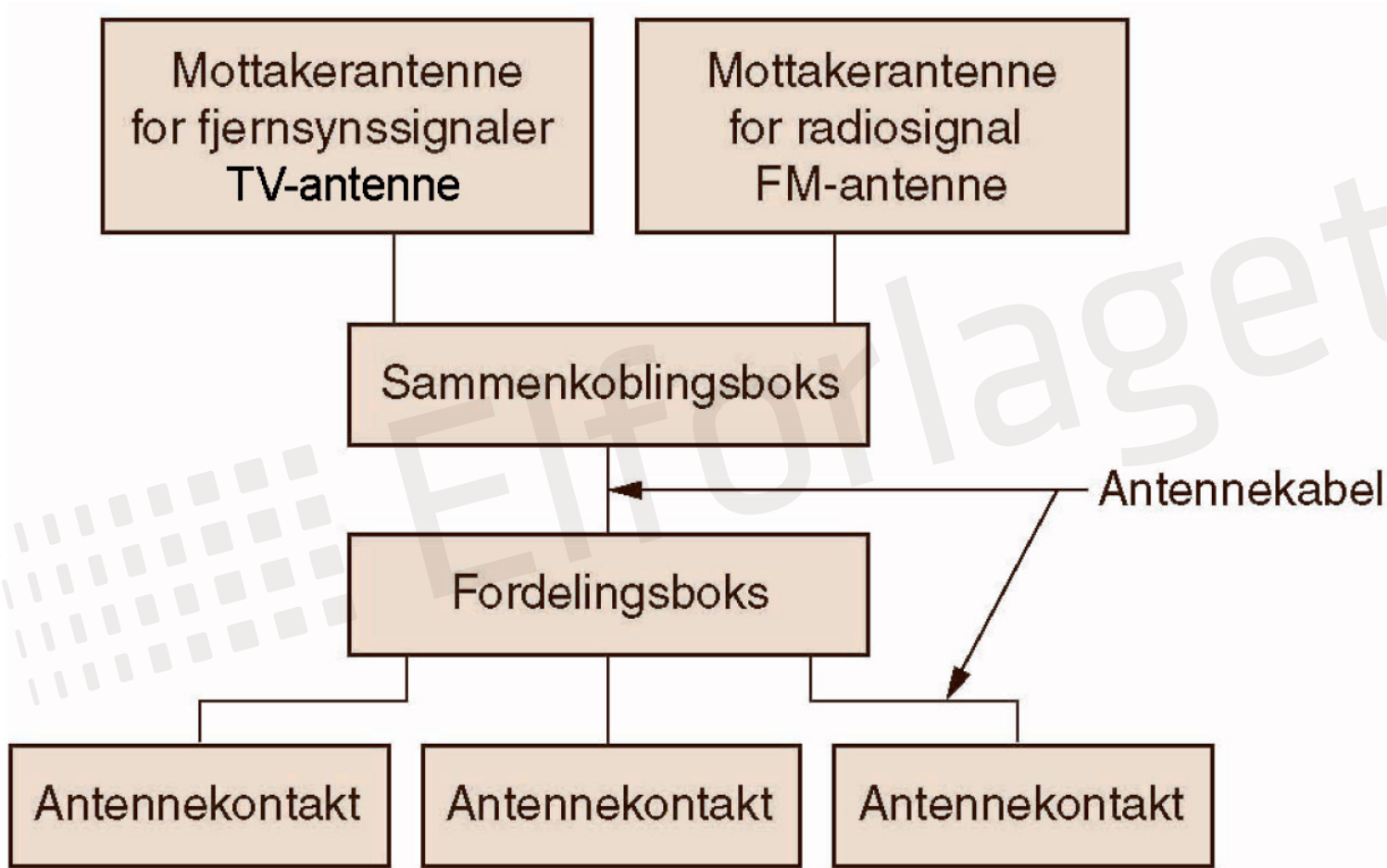
Radiobølgene inndelt i kanaler og kanalbredde

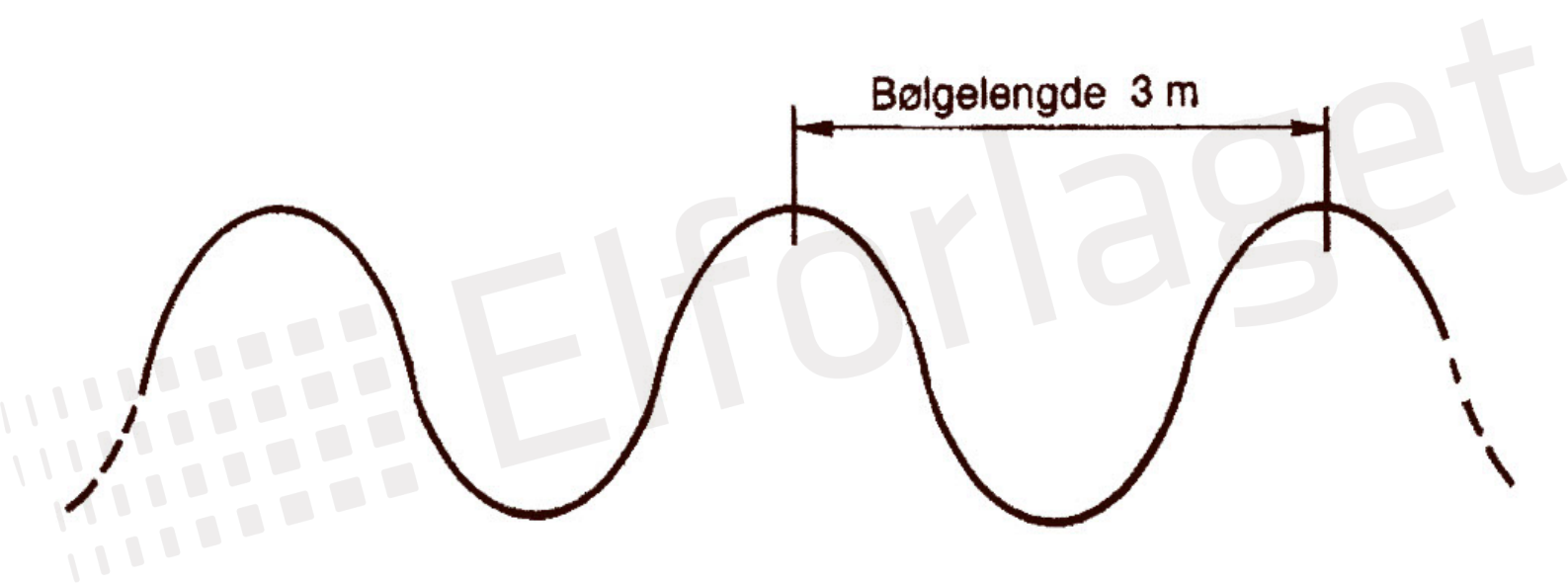
Bånd	Kanal Nr	Kanalbredde (MHz)	Bånd	Kanal Nr	Kanalbredde (MHz)	Bånd	Kanal Nr	Kanalbredde (MHz)
Bånd I (TV)	2	47 - 54	UHF-bånd IV	21	470 - 478	UHF-bånd V	46	670 - 678
	3	54 - 63		22	478 - 486		47	678 - 686
	4			23	486 - 494		48	686 - 694
				24	494 - 502		49	694 - 702
Bånd II	FM-radio	87,5 - 108		25	502 - 510		50	702 - 710
				26	510 - 518		51	710 - 718
Bånd III (TV)	27			27	518 - 526		52	718 - 726
	5	174 - 181		28	526 - 534		53	726 - 734
	6	181 - 188		29	534 - 542		54	734 - 742
	7	188 - 195		30	542 - 550		55	742 - 750
	8	195 - 202	31	550 - 558	56	750 - 758		
	9	202 - 209	32	558 - 566	57	758 - 766		
	10	209 - 216	33	566 - 574	58	766 - 774		
	11	216 - 223	34	574 - 582	59	774 - 782		
	12	223 - 230	35	582 - 590	60	782 - 790		
				36	590 - 598	61	790 - 798	
			37	598 - 606	62	798 - 806		
			UHF-bånd V	38	606 - 614	63	806 - 814	
				39	614 - 622	64	814 - 822	
				40	622 - 630	65	822 - 830	
				41	630 - 638	66	830 - 838	
				42	638 - 646	67	838 - 846	
				43	646 - 654	68	846 - 854	
				44	654 - 662	69	854 - 862	
				45	662 - 670			

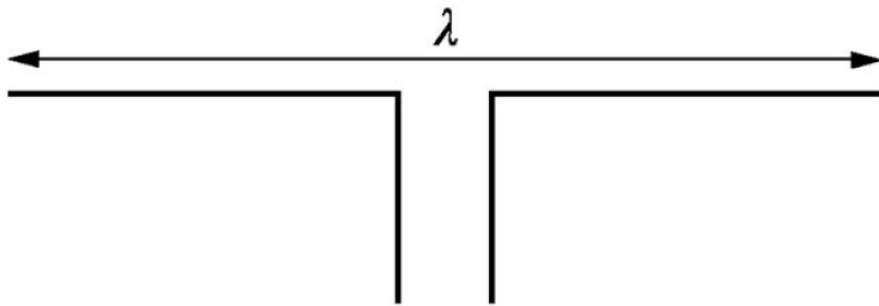
Forsterkning/dempning

U_{ut}/U_{inn} U_{inn}/U_{ut}	L_U (dB)	U_{ut}/U_{inn} U_{inn}/U_{ut}	L_U (dB)
1,00	0,0	7,10	17
1,05	0,5	8,00	18
1,12	1,0	8,90	19
1,19	1,5	10,0	20
1,25	2,0	11,2	21
1,33	2,5	12,5	22
1,41	3,0	14,1	23
1,50	3,5	16,0	24
1,60	4,0	17,8	25
1,67	4,5	20,0	26
1,78	5,0	22,4	27
1,88	5,5	25,0	28
2,00	6,0	28,2	29
2,12	6,5	31,6	30
2,24	7,0	40,0	32
2,37	7,5	45,0	33
2,50	8,0	50,0	34
2,65	8,5	56,0	35
2,82	9,0	63,0	36
3,00	9,5	71,0	37
3,16	10	80,0	38
3,55	11	89,0	39
4,00	12	100	40
4,50	13	178	45
5,00	14	316	50
5,62	15	562	55
6,30	16	1000	60

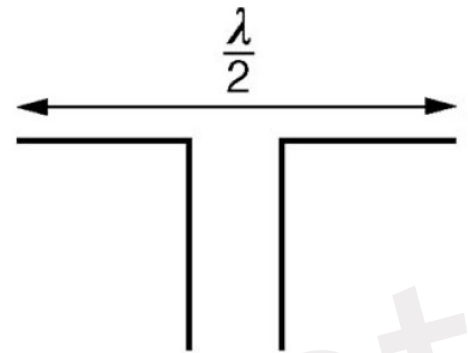
Signalspenning (μV)	Signalnivå ($\text{dB}_{\mu\text{V}}$)	Radio og TV
1,0	0,0	40 $\text{dB}_{\mu\text{V}}$. Minimum for FM monoradio
1,4	3,0	
2,0	6,0	
2,5	8,0	
3,16	10	
4,0	12	
5,0	14	
7,0	17	
10	20	
20	26	
40	32	
50	34	
70	37	
100	40	
200	46	
316	50	50 $\text{dB}_{\mu\text{V}}$. Minimum for FM-stereoradio
400	52	
500	54	
750	57,5	
Signalspenning (mV)		
1,0	60	70 $\text{dB}_{\mu\text{V}}$. Maksimum for FM-radio
1,4	63	
2,0	66	
3,16	70	
5,0	74	77 $\text{dB}_{\mu\text{V}}$. Maksimum for digital-TV (DVB)
10	80	
15,0	84	
20,0	86	
36,6	90	
50,0	94	
70,0	97	
100	100	



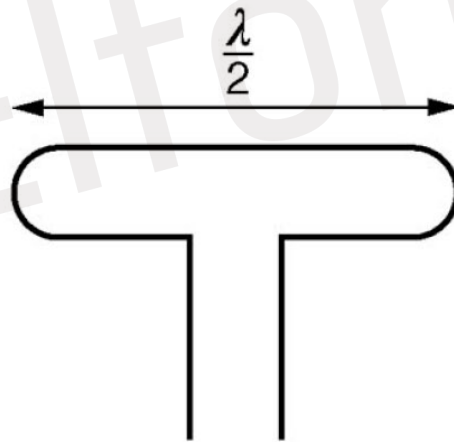




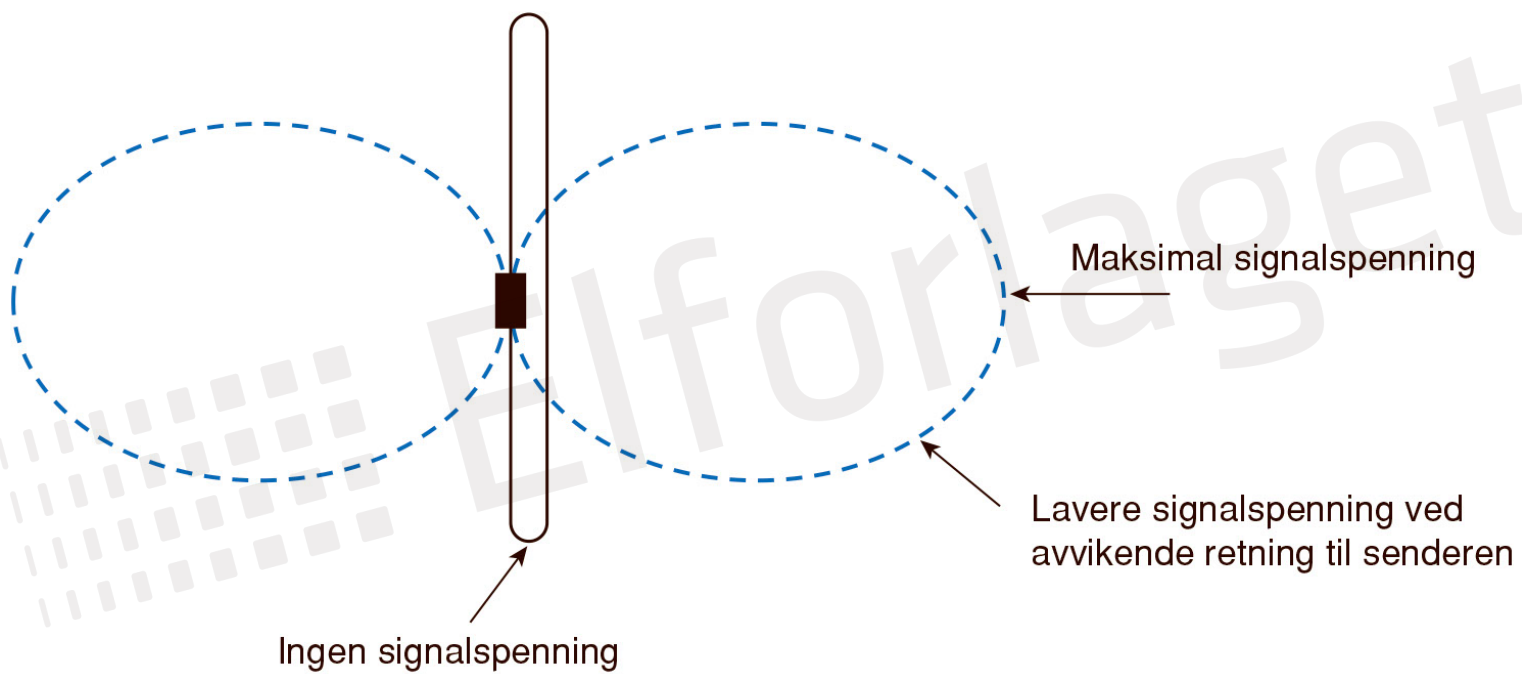
Halvbølge dipolantenne
Impedans 400 – 500 Ω



Halvbølge dipolantenne
Impedans 75 Ω



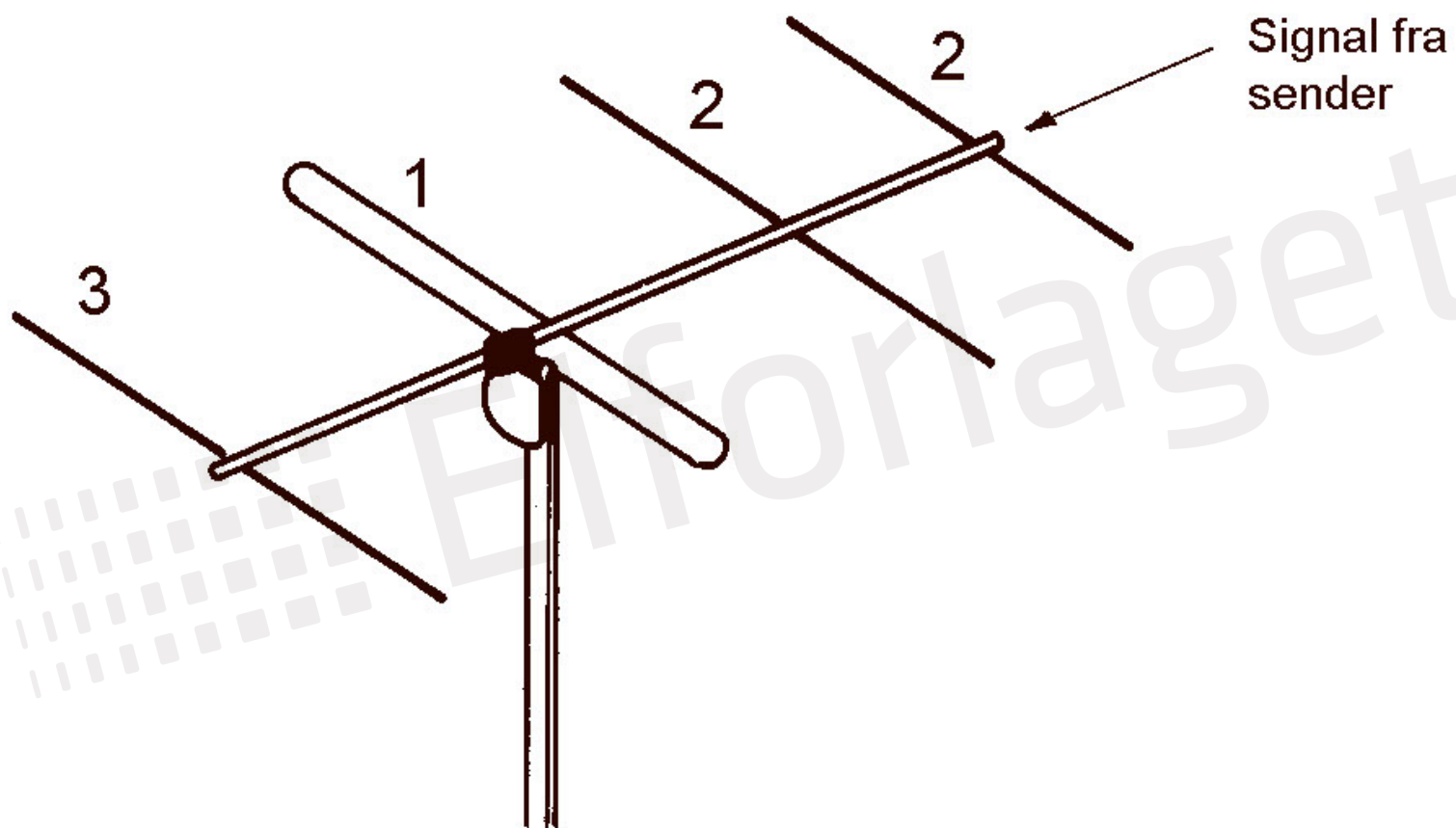
Foldet halvbølge
dipolantenne
Impedans 300 Ω

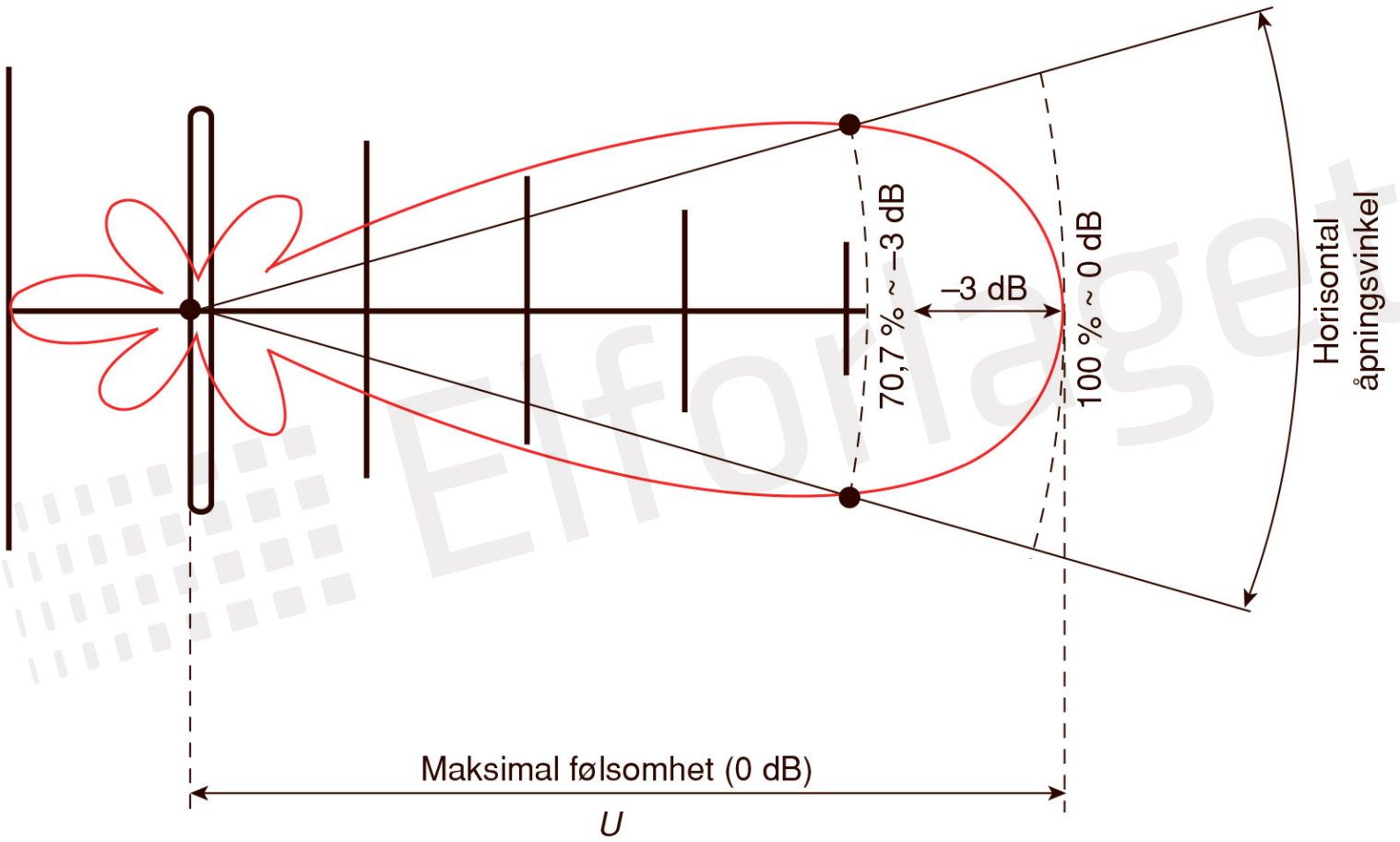


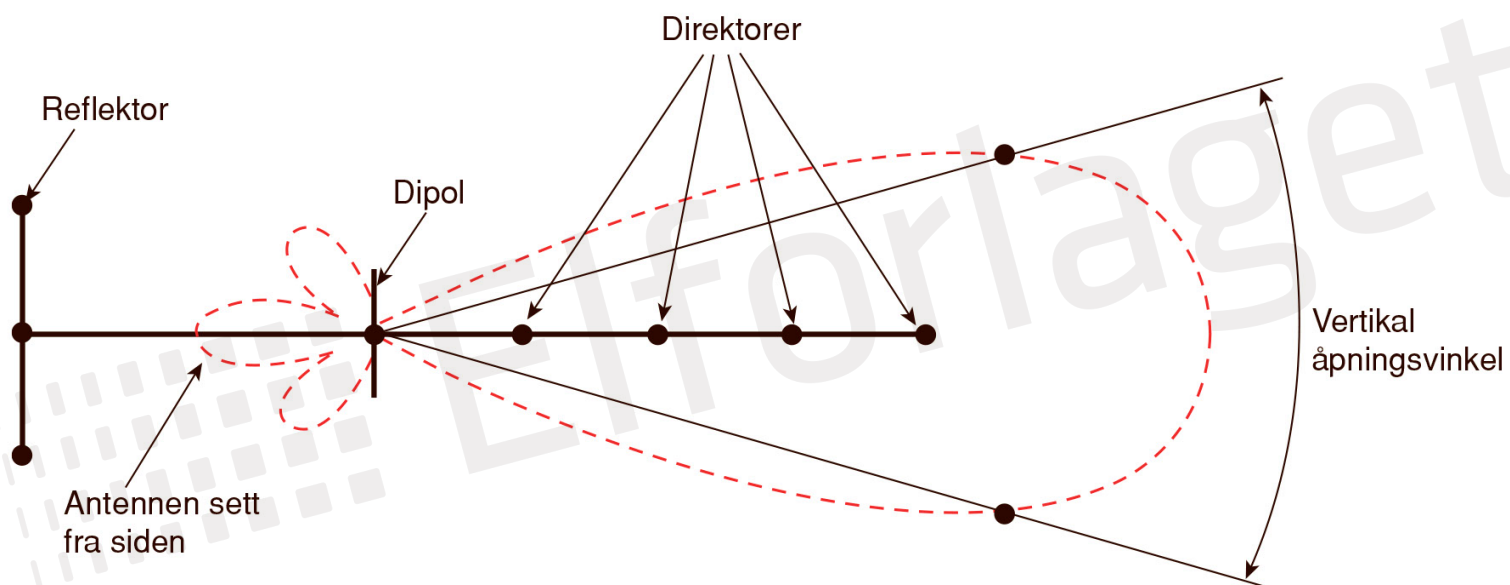
Ingen signalspenning

Maksimal signalspenning

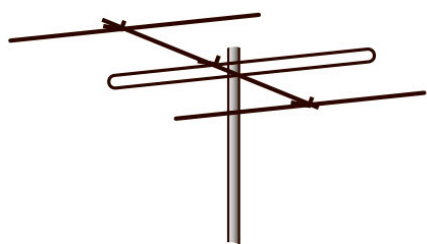
Lavere signalspenning ved avvikende retning til senderen





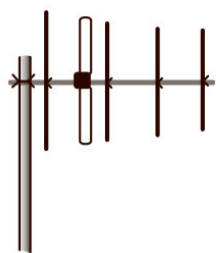


FM-antenne



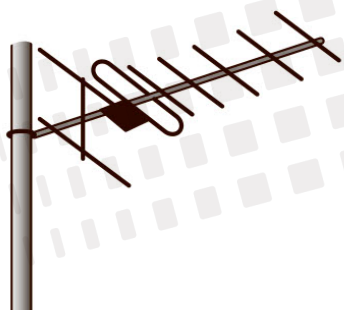
Type antenne:	Elementantenne
Utførelse:	3 elementer antenne for FM
Frekvens MHz:	87,5 - 108
Forsterkning, dB:	5,5
Front-backforhold, dB:	16
Åpningsvinkel horisontalt:	70°
Mast rør Ø, mm:	38 - 60

DAB-antenne

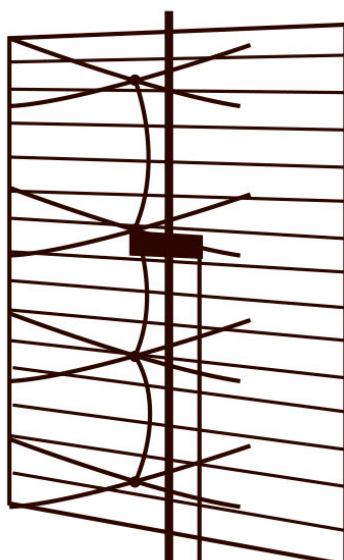


Type antenne:	Elementantenne
Utførelse:	5 elementer antenne for DAB
Frekvens MHz:	200 - 240
Forsterkning, dB:	8
Front-backforhold, dB:	27
Åpningsvinkel horisontalt:	33 - 40°
Lengde mm:	1095

TV-antenn



Type antenne:	Elementantenne
Utførelse:	8 elementer antenne for B IV/V
Kanal:	21 - 69
Forsterkning, dB:	11
Front-backforhold, dB:	20
Åpningsvinkel horisontalt:	50°
Mål mm (L x B):	710 x 200



Type antenne:	Gitterantenne for B IV/V
Kanal:	21 - 69
Forsterkning, dB:	13
Front-backforhold, dB:	20 - 23
Åpningsvinkel horisontalt:	37 - 50°
Mål mm (L x B):	800 x 500



Elforlaget

HORIZONTAL

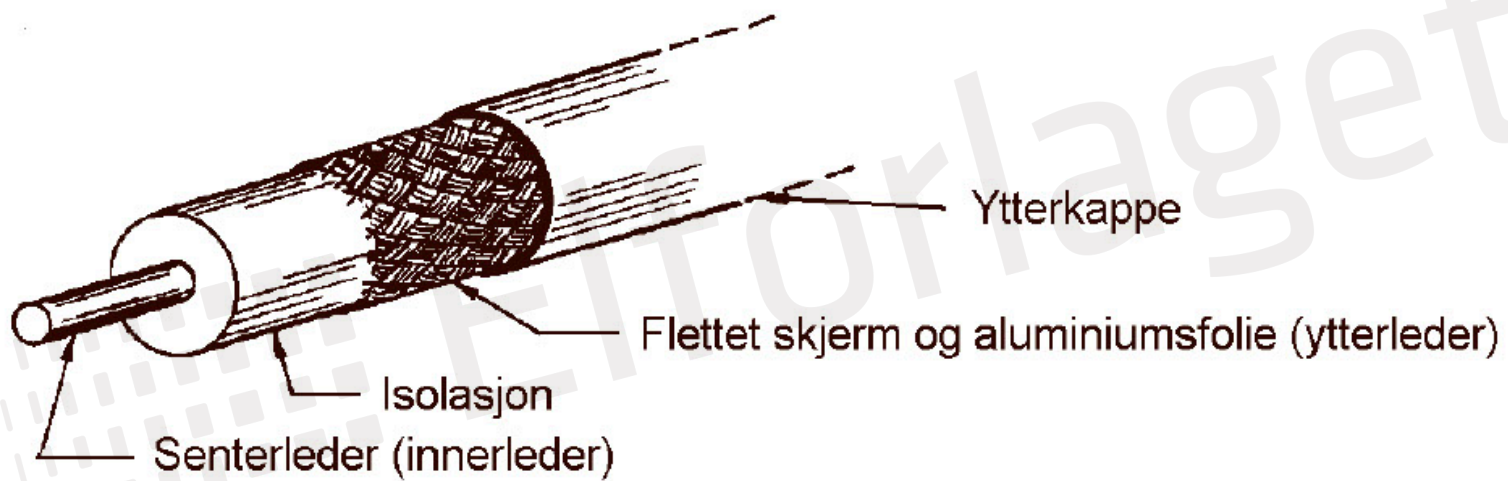
VERTICAL

DIGIALITY



Elforlaget

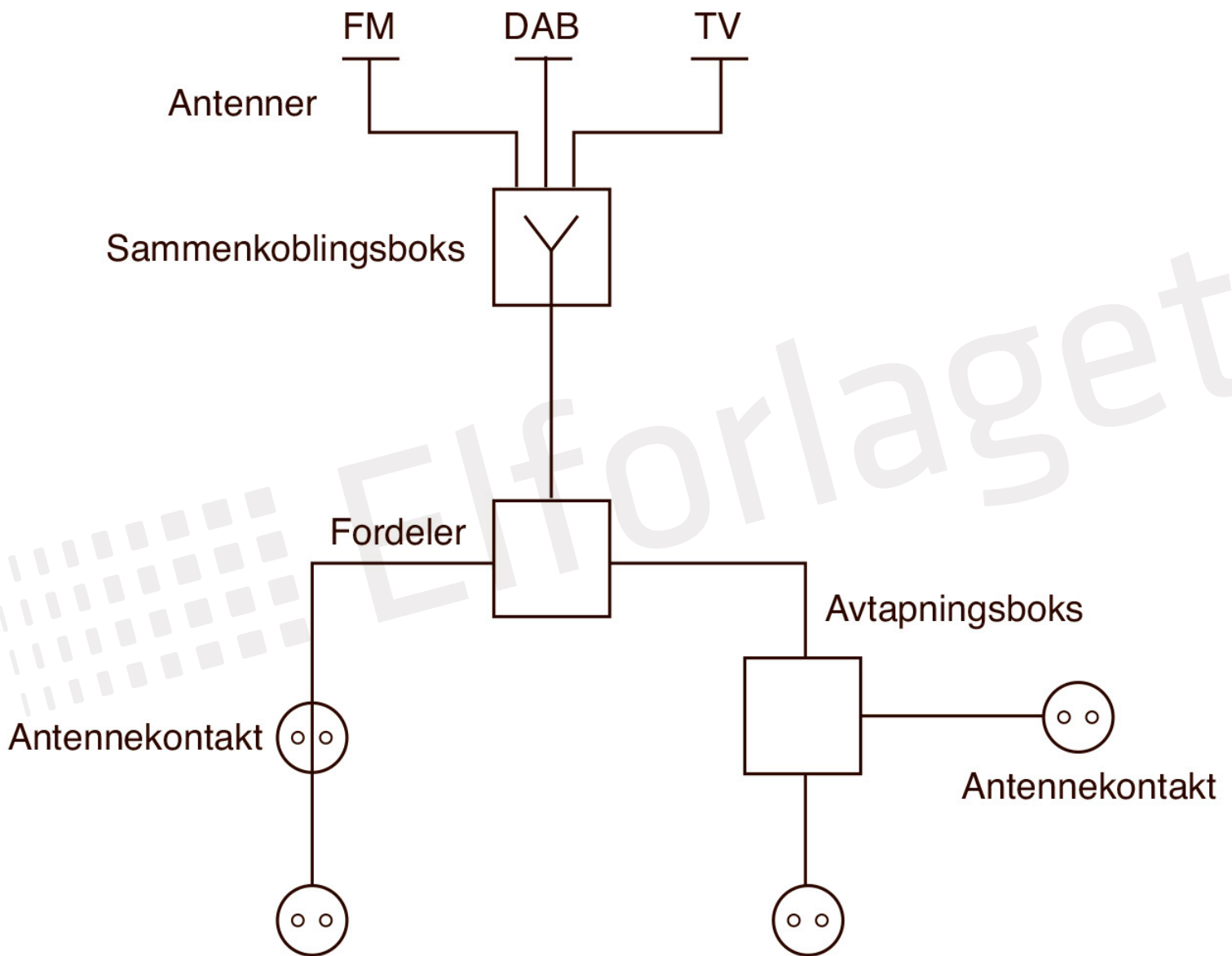


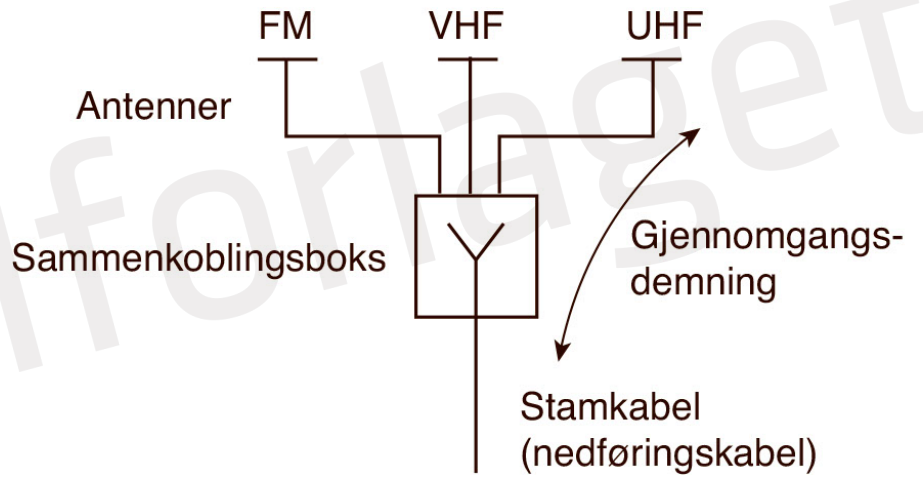


Sp = plasticsnelle
 St = tresnelle
 T = trommel
 B = boks

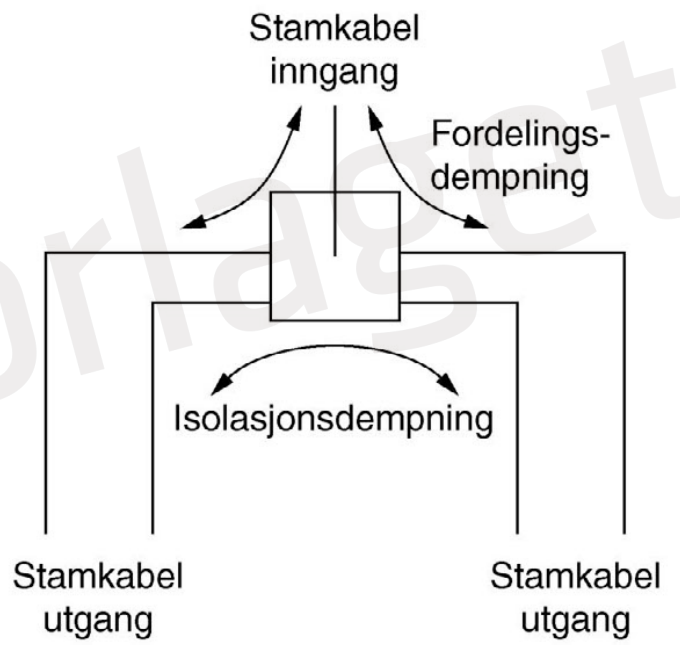
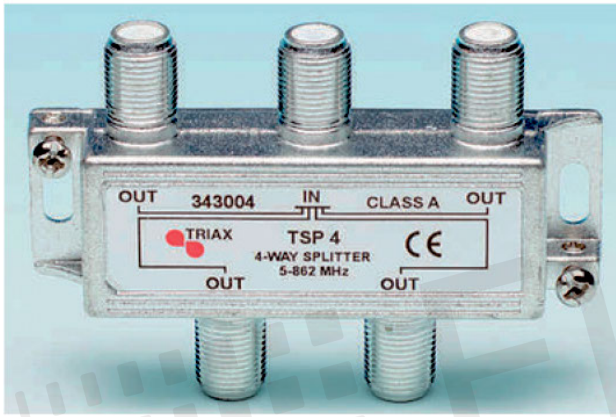


Type	59 - serien	6 - serien	6 - serien
Impedans, ohm:	75 ± 3	75 ± 3	75 ± 3
Skjermeffektivitet, dB:	65	75	110
Miljø:	Innendørs	Innendørs	Utendørs
Elektriske data ved 20°C			
Dempning pr. 100 m kabel			
5 MHz, dB:	2,53	1,87	1,87
55 MHz, dB:	6,18	4,94	4,94
210 MHz, dB:	11,79	9,43	9,43
300 MHz, dB:	14,01	11,25	11,25
450 MHz, dB:	17,39	14,04	14,04
600 MHz, dB:	20,28	16,34	16,34
870 MHz, dB:	24,75	19,99	19,99
1000 MHz, dB:	26,54	21,46	21,46
DC- Resistans			
Innerleder, ohm/km:	158	22	22
Ytterleder, ohm/km:	38	30	18
Hastighetsfaktor:	0,85	0,85	0,85
Kabelkonstruksjon			
Innerleder, mm Ø:	0,81 KStH	1,02 KG	1,02 KG
Dielektrikum, mm Ø:	3,66 PE-skum	4,57 PE-skum	4,57 PE-skum
Skjerm 1:	Folie AL/PP/AL	Folie AL/PP/AL	Folie AL/PP/AL
Skjerm 2:	Flettet	Flettet	Flettet
Utvendig kappe:	UV-bestendig hvit PVC	Hvit PVC	Sort PE
Utvendig, Ø mm:	6,1	6,93	6,93
Vekt, kg/km:	34	42	46

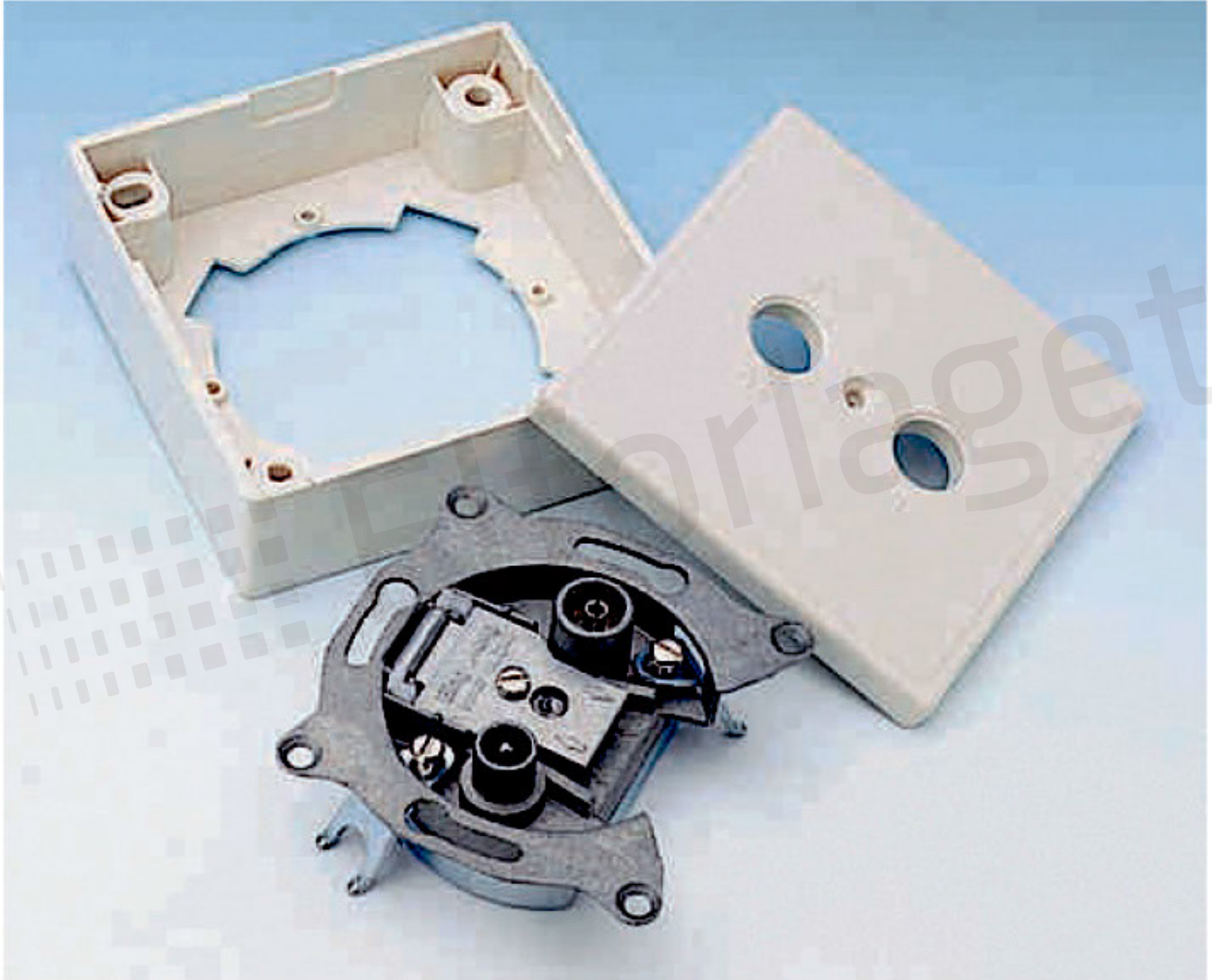


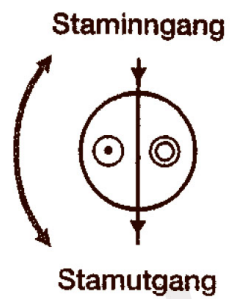


Inngang	Frekvensområde (MHz)	Gjennomgangsdempning (dB)
FM-antenne	87 - 108	1,5
VHF-antenne (DAB-antenne)	174 - 240	2,0
UHF-antenne (TV-antenne)	470 - 862	2,0



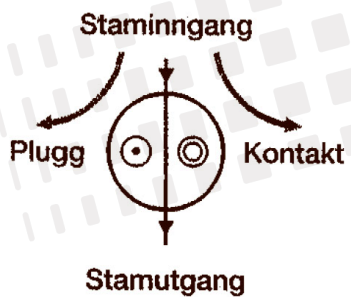
Frekvensområde	5–1000 MHz
Antall utganger	4
Fordelingsdempning	6,7–7,9 dB
Isolasjonsdempning	20 dB
Returdempning	16–20 dB





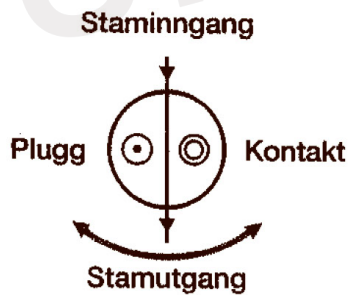
Gjennomgangsdempning

Dempning mellom staminngang og stamutgang



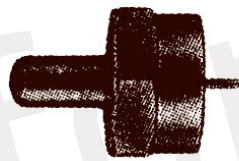
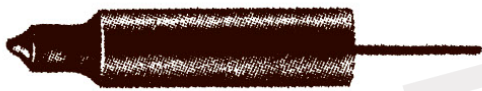
Tilkoblingsdempning

Dempning fra inngang til radio- eller TV-uttak

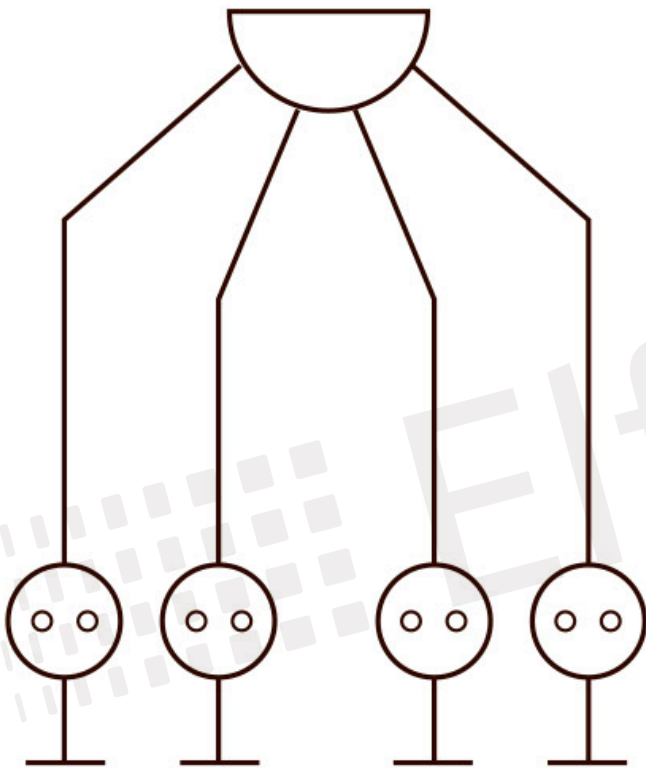


Isolasjonsdempning (intern)

Dempning mellom radio- og TV-uttak i samme kontakt



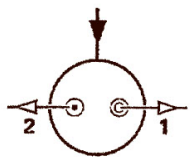
Symbol



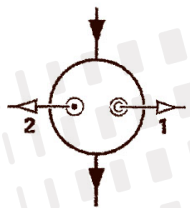
Stjernenett



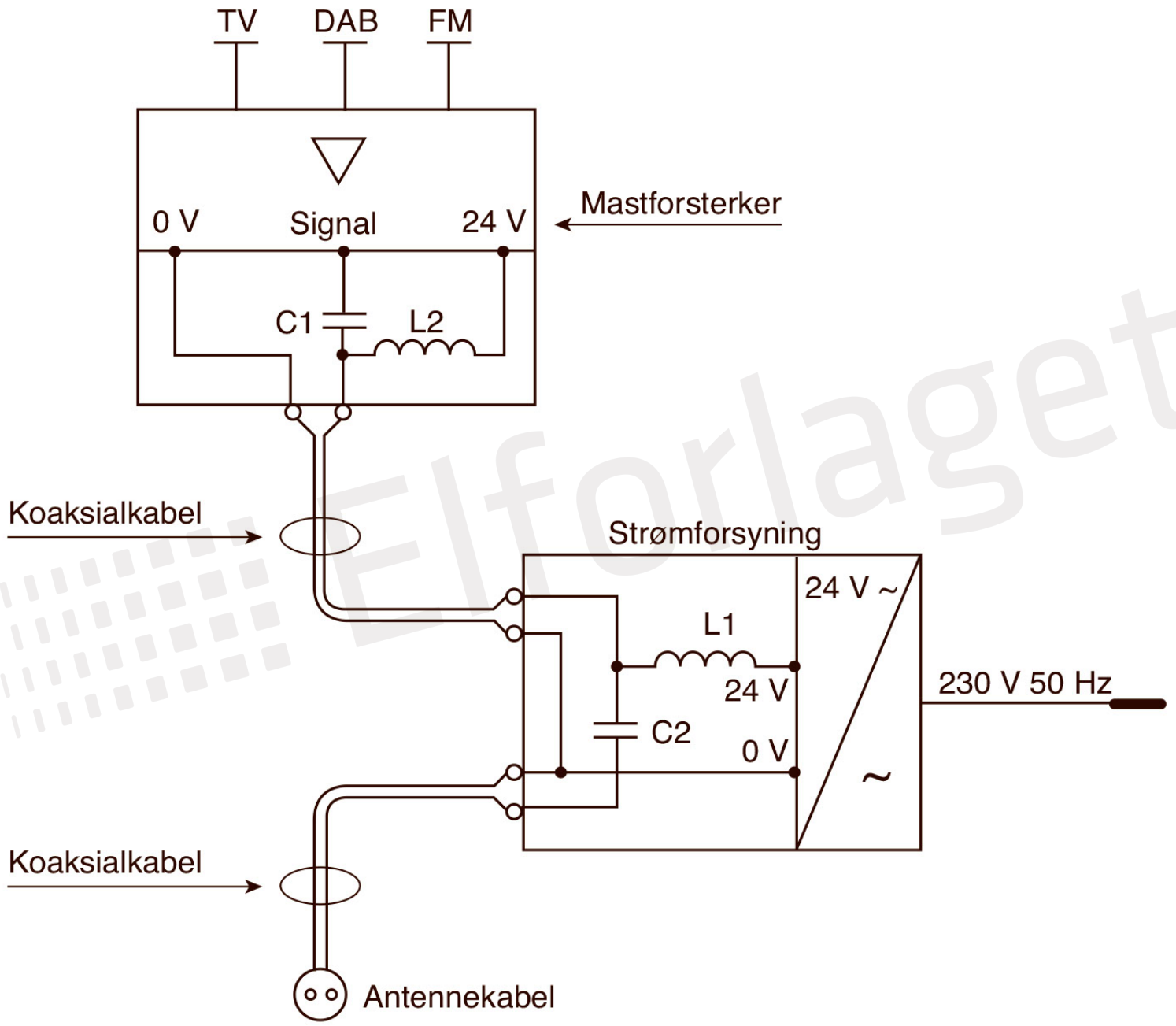
Serienett







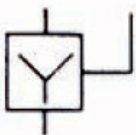
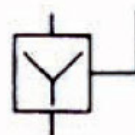

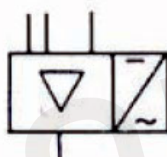


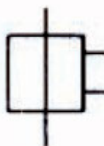


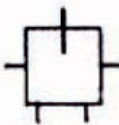





Endekontakt Kontakt egnet for stjerne-nett	FM 87,5–108 MHz	B III 125–470 MHz	B IV/V 470–1000 MHz
Gjennomgangsdempning	2,8 dB	2,8 dB	3,3 dB
Tilkoblingsdempning 1 (R)	8 dB	26 dB	30–20 dB
Tilkoblingsdempning 2 (TV)	18 dB	7 dB	8 dB
Isolasjonsdempning R/TV int.	15 dB	30 dB	30 dB

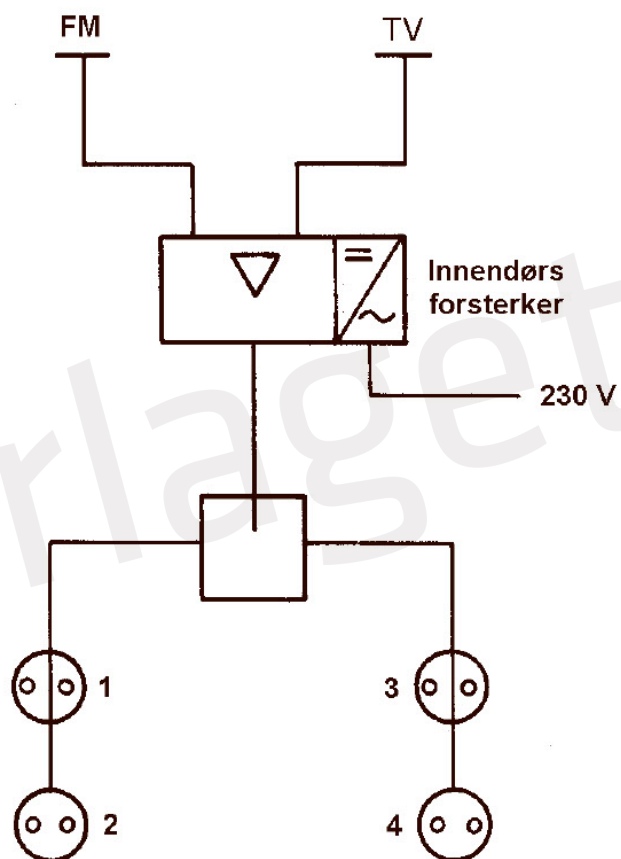
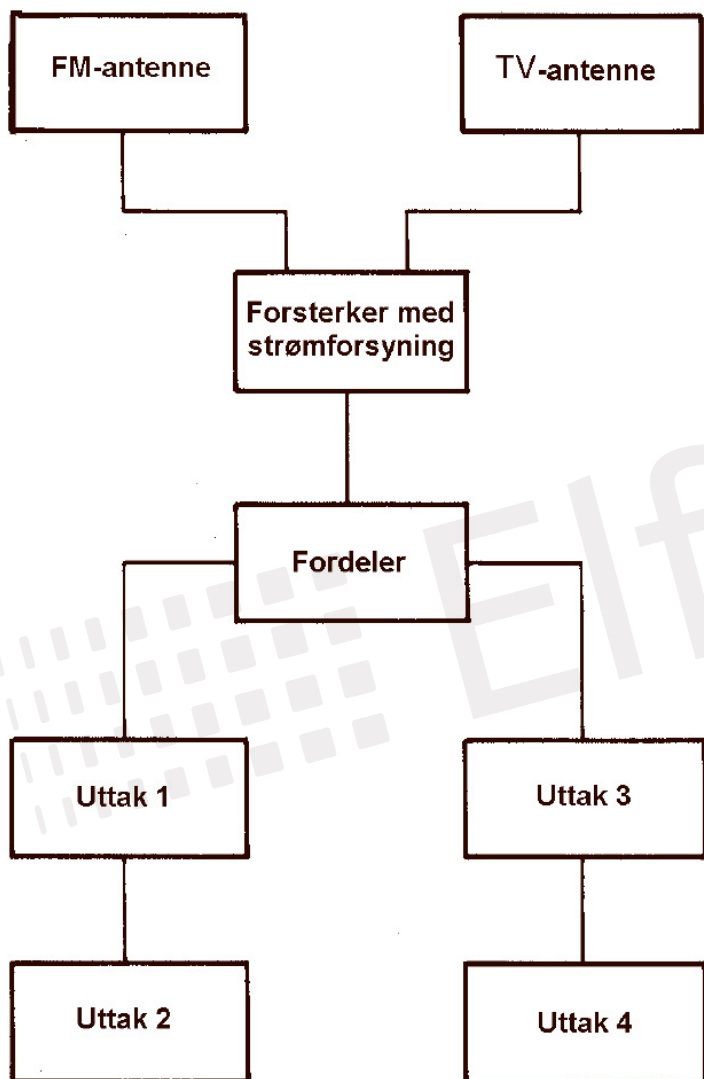


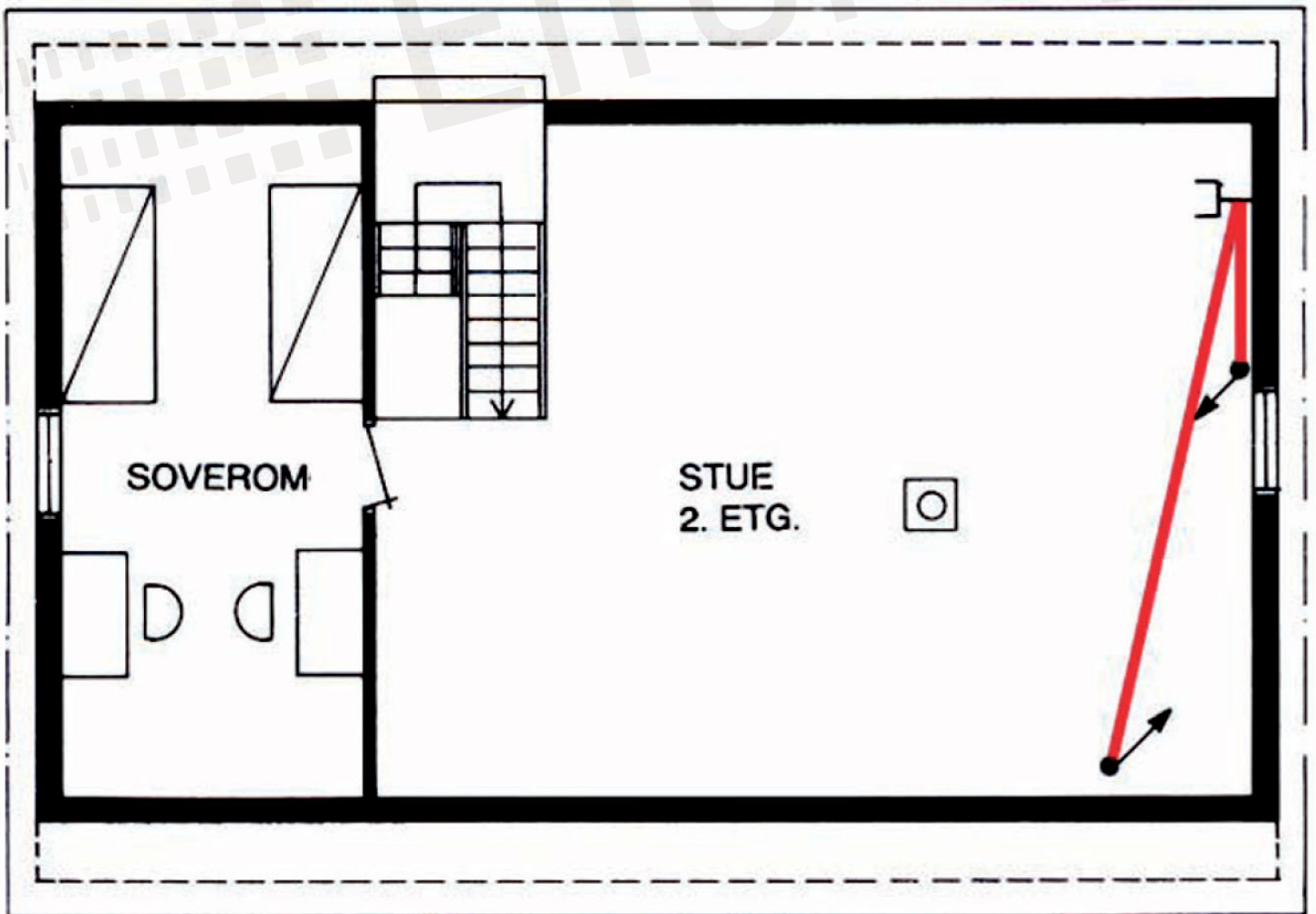
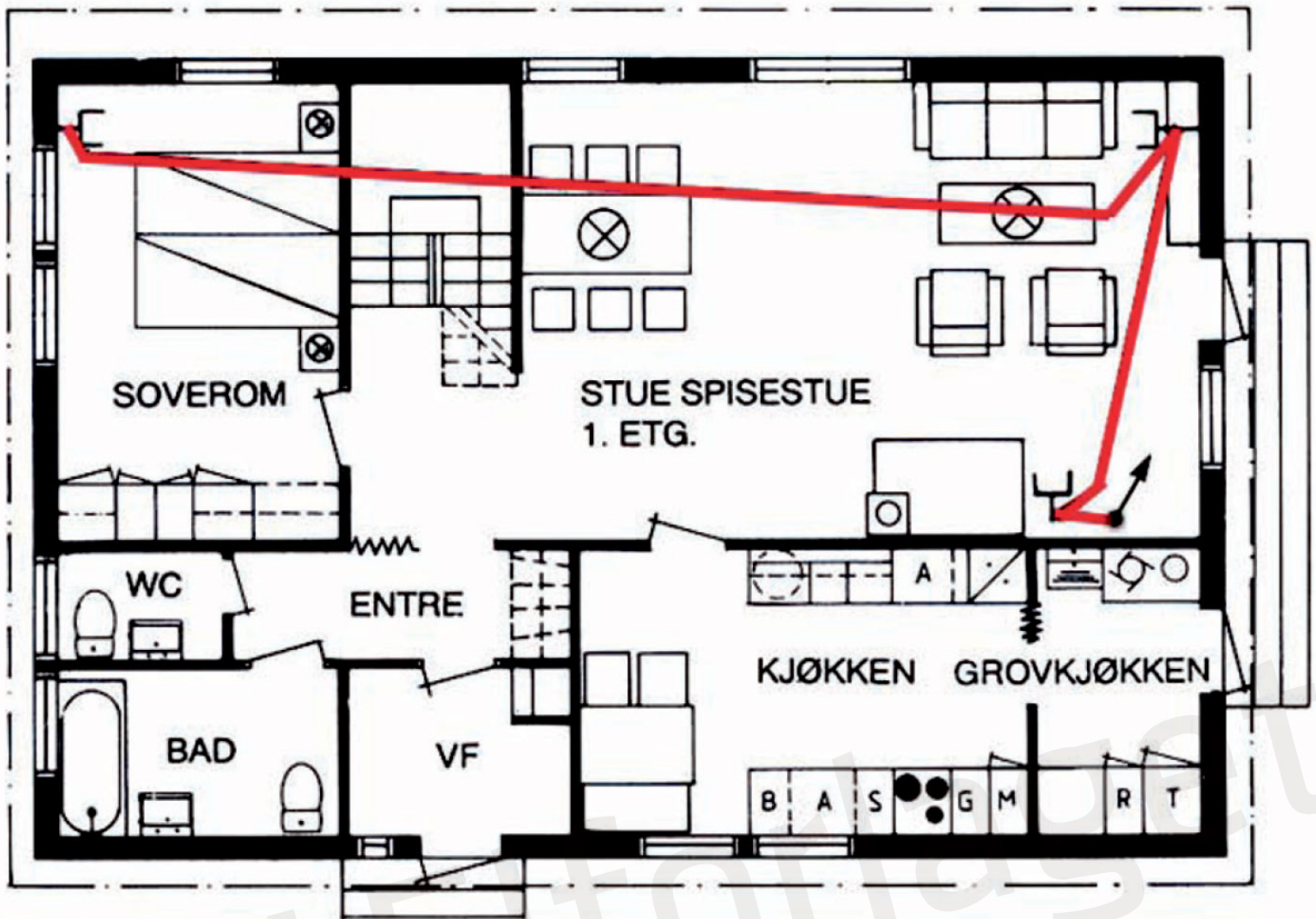
Gjennomgangskontakt Kontakt egnet for serie-nett	FM 87,5–108 MHz	B III 125–470 MHz	B IV/V 470–1000 MHz
Gjennomgangsdempning	0,8 dB	0,8 dB	0,8 dB
Tilkoblingsdempning 1 (R)	12 dB	36 dB	36 dB
Tilkoblingsdempning 2 (TV)	22 dB	11 dB	11 dB
Isolasjonsdempning R/TV int.	12 dB	26 dB	26 dB

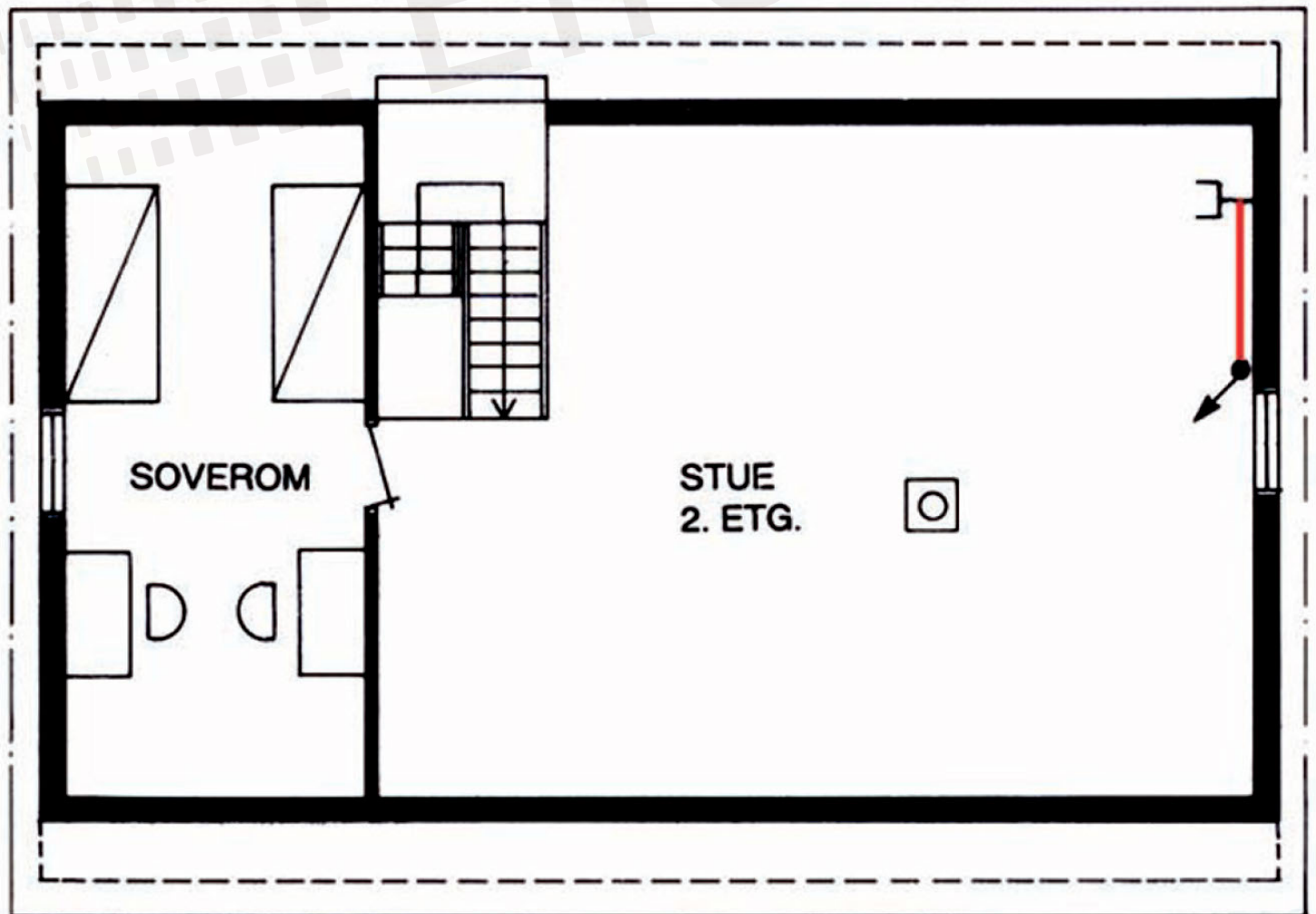
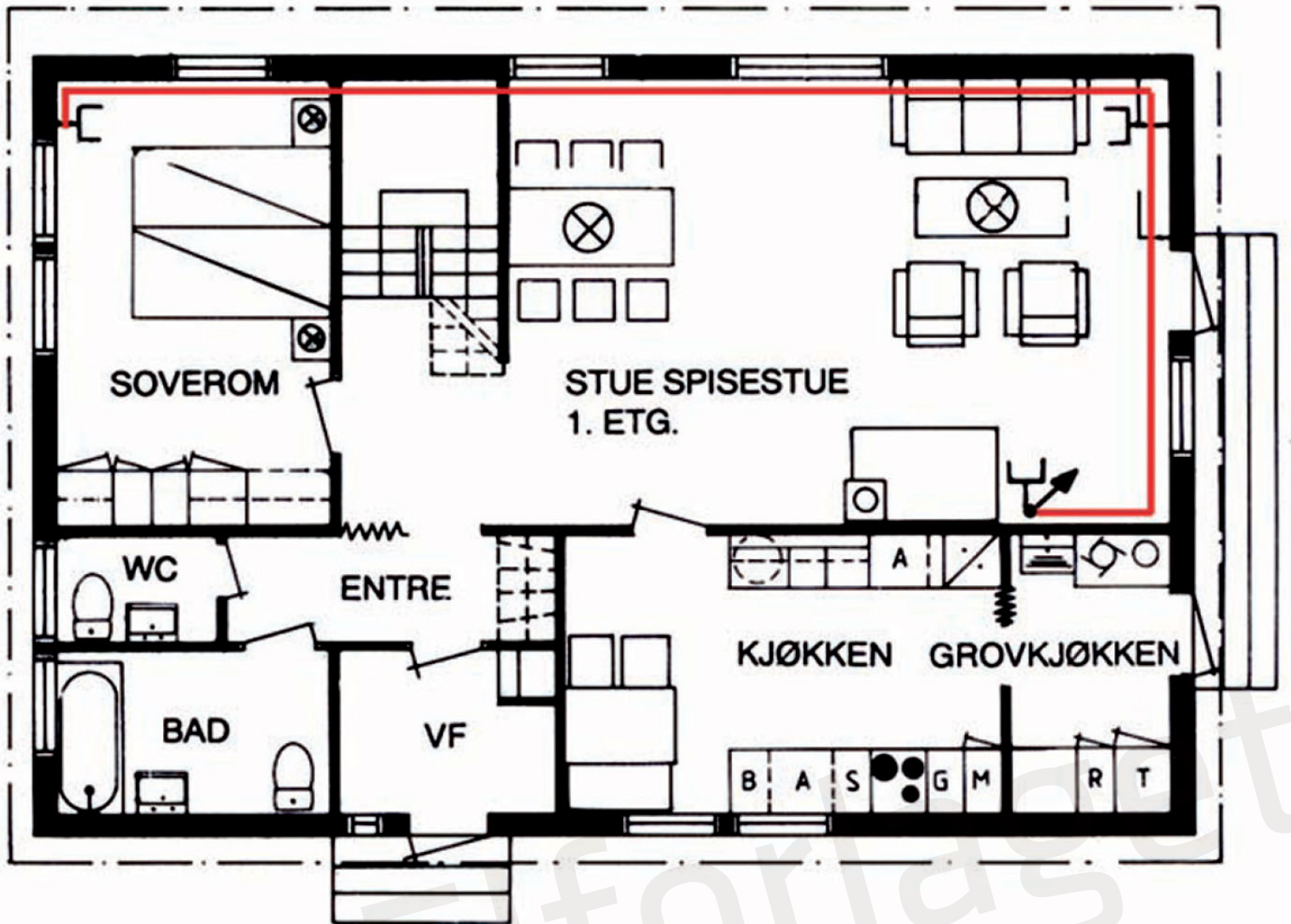


Frekvensområde	47–860 MHz
Forsterkning	24 dB
Maksimalt utgangsnivå	105 dB _{μV}
Egenstøy	2,7 dB
Strømforbruk	ca. 30 mA
Driftsspenning	12–24 V DC

Utstyr Komponent	Skjemasympol	Installasjons- symbol IEC-normert	Symbolnavn
			Antenne
			Sammen- koblings- filter
			Forsterker
			Avgrener
			Fordeler
	 		Antenne- kontakt

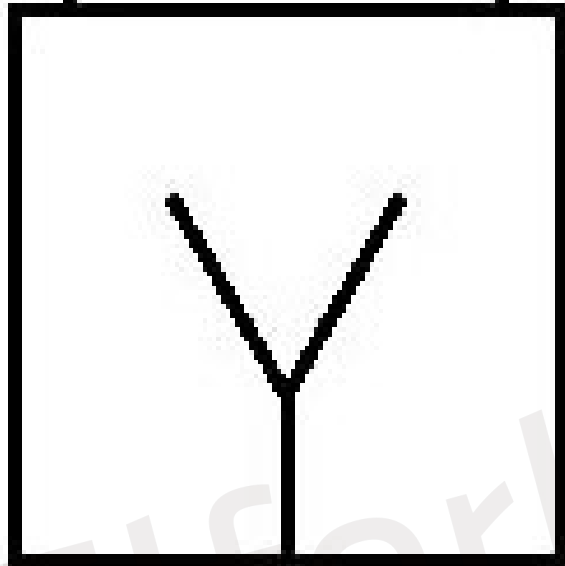




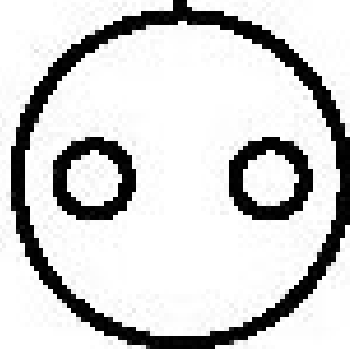


FM

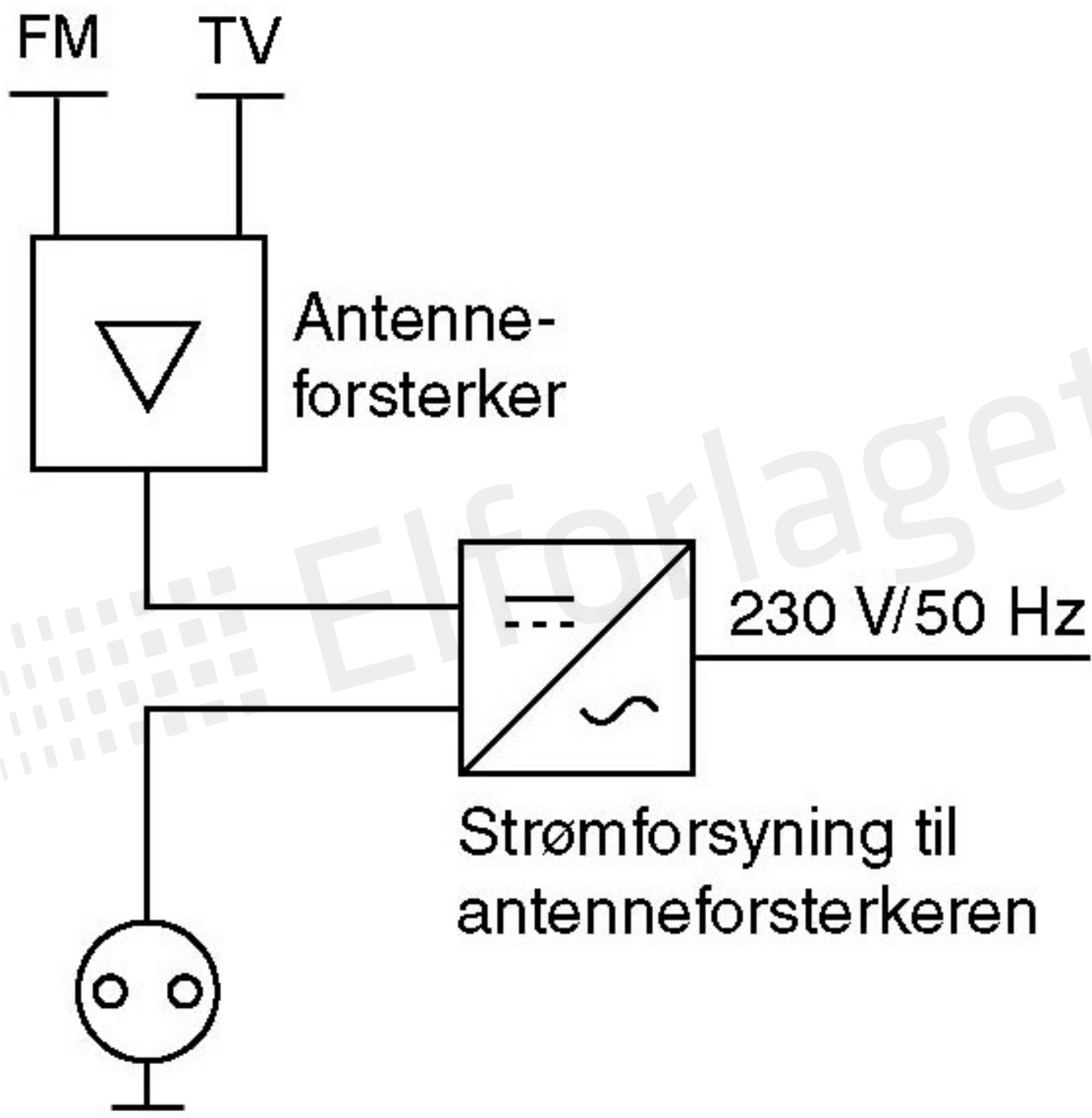
TV



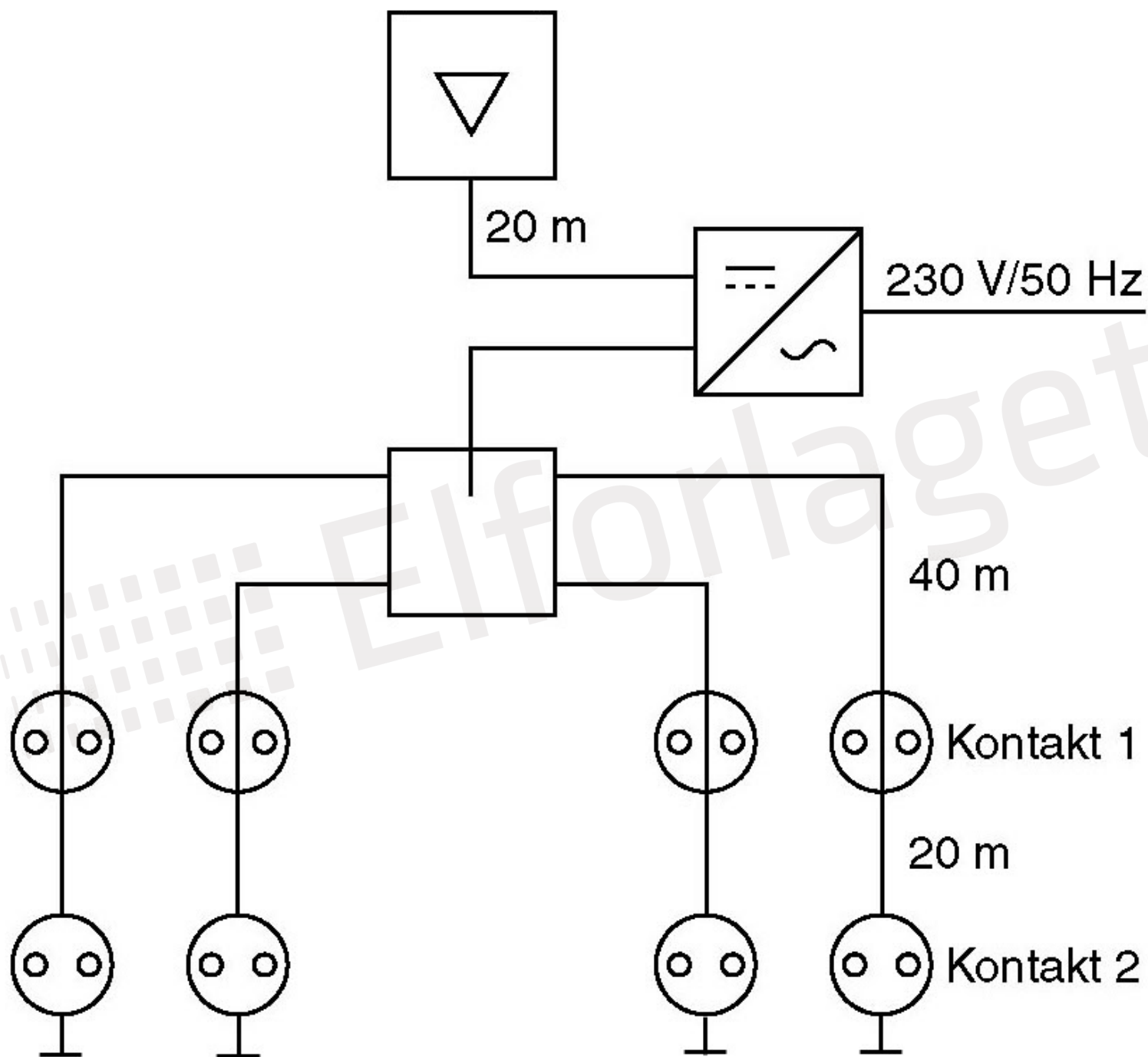
20 m



Elforlaget

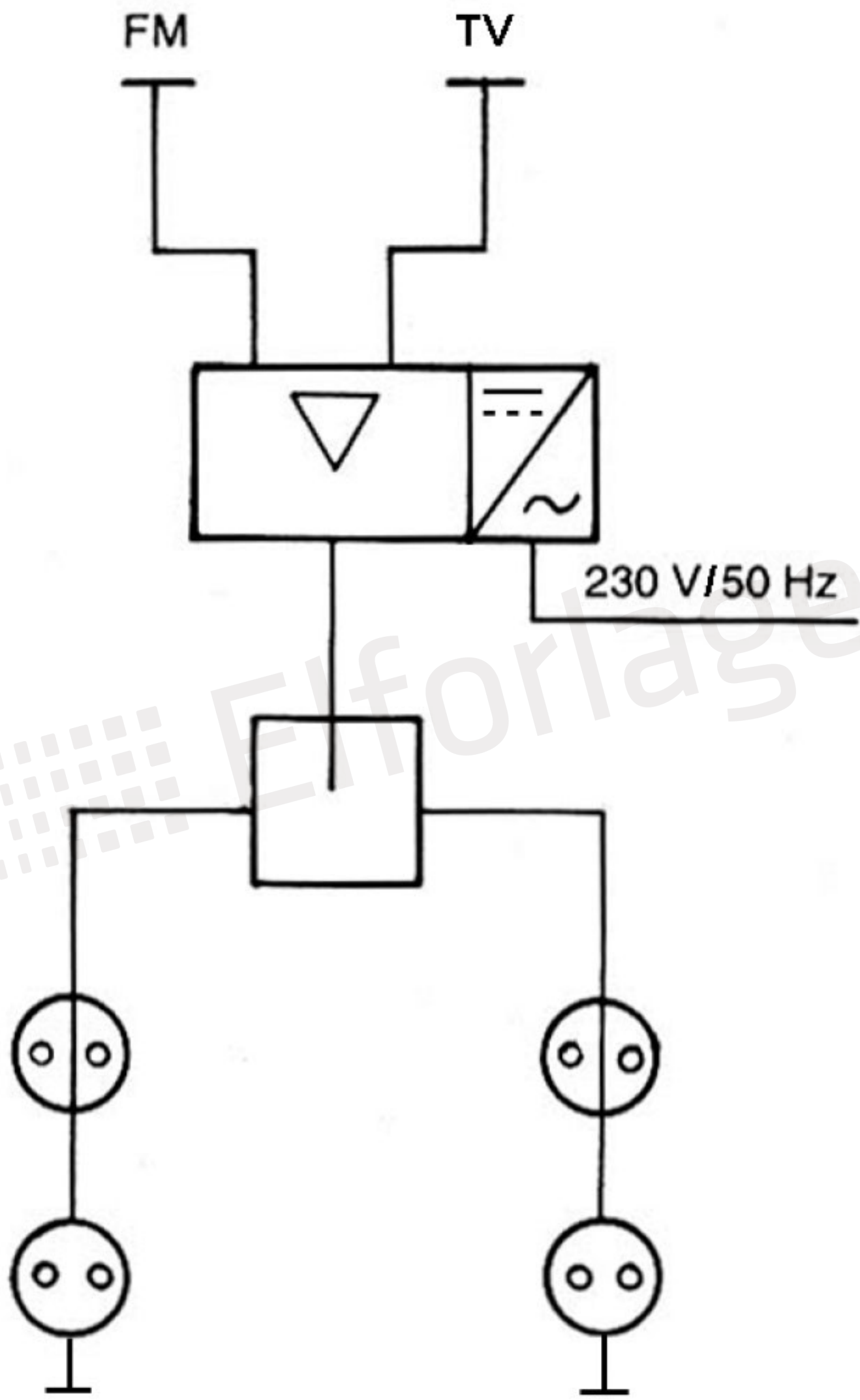


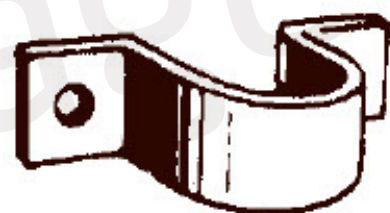
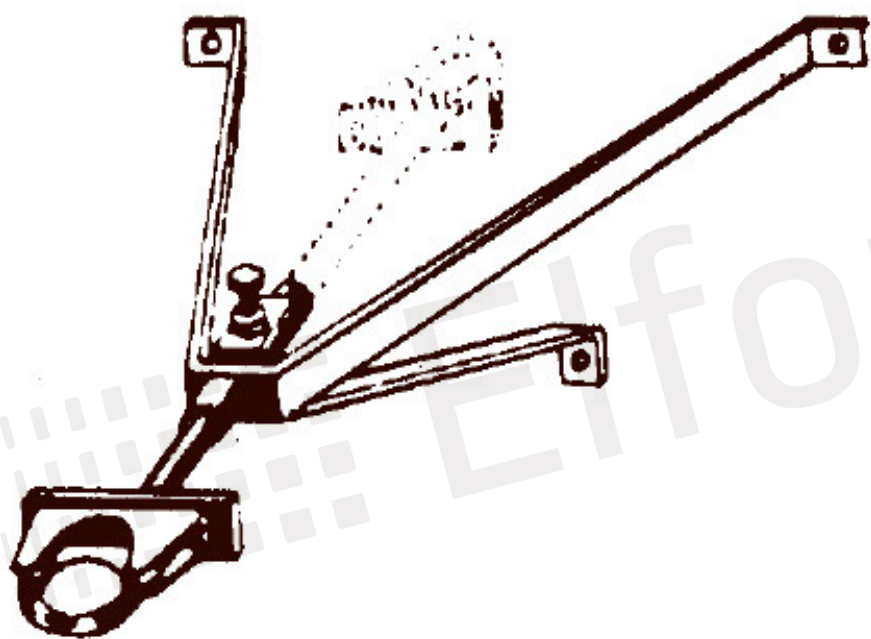


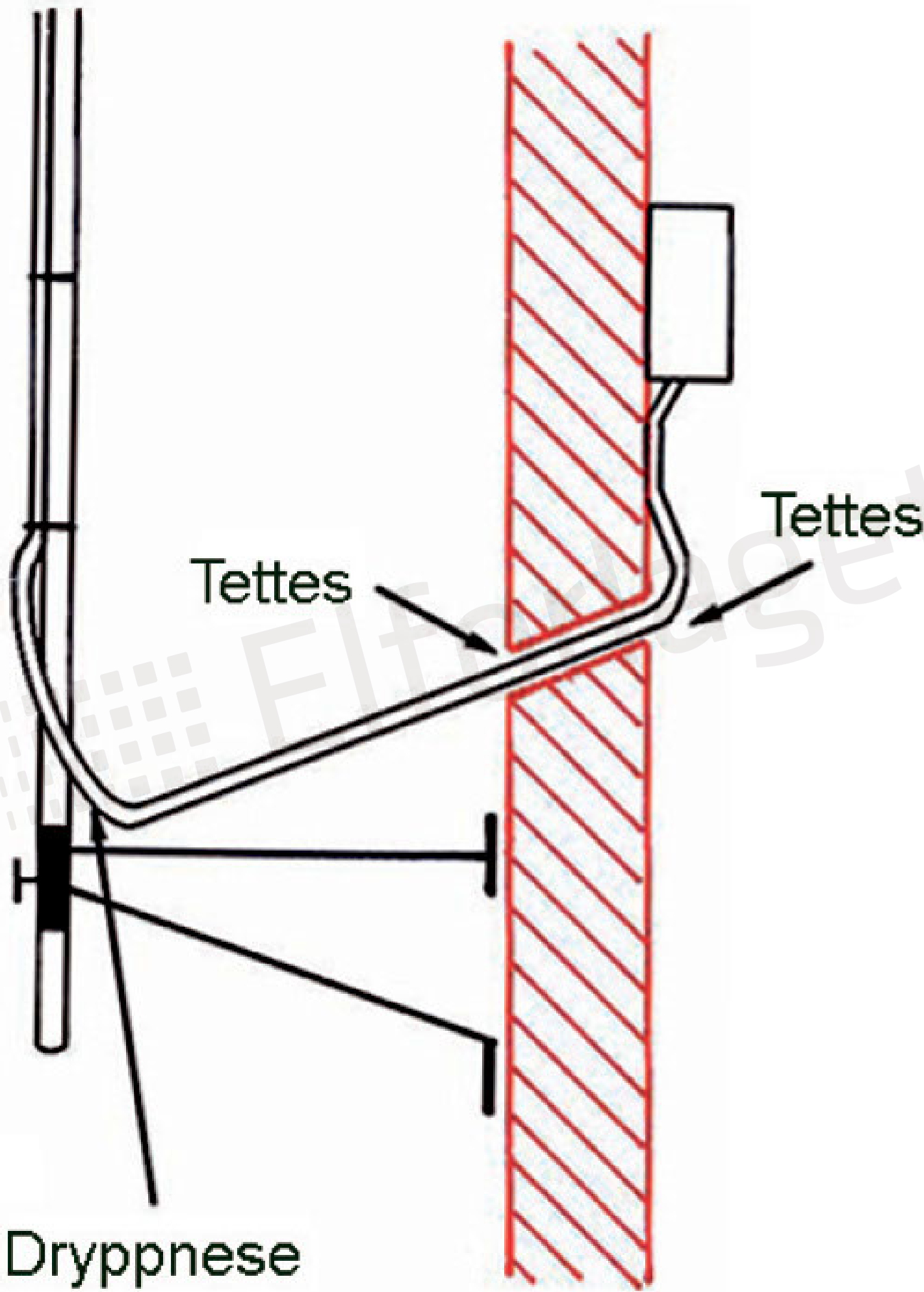


Antall	Materiell
1	UHF antenne med antenneforsterkning 11 dB
1	Firedeleer med fordelingsdempning, UHF: 9,2 dB
8	Antennekontakter med tilkoblingsdempning 11 dB og gjennomgangsdempning 0,8 dB
160 m	Antennekabel med dempning, UHF: 20 dB/100 m

Forsterkning og dempning	UHF 622–862 MHz
Antennesignal	72 dB _{μV}
Antenneforsterker	24 dB
Signal ut fra forsterkeren	96 dB_{μV}
Dempning i kabelen	
Antenneforsterker – firedeler, 20 m	4,0 dB
Fordelingsdempning i firedeleren	9,2 dB
Dempning i kabelen fra firedeleren til første antennekontakt. Avstand 40 m	8 dB
Tilkoblingsdempning i første antennekontakt	11 dB
Sum dempning fram til første antennekontakt	32,2 dB
Signalnivå i antennekontakt 1	63,8 dB_{μV}
Signal til den andre antennekontakten	74,8 dB _{μV}
Gjennomgangsdempning i den første antennekontakten	0,8 dB
Dempning i kabelen mellom den første antennekontakten og antennekontakten 20 m	4,0 dB
Tilkoblingsdempning i den andre antennekontakten	11 dB
Sum dempning fram til den andre antennekontakten	15,8 dB
Signalnivå i den andre antennekontakten	48 dB_{μV}



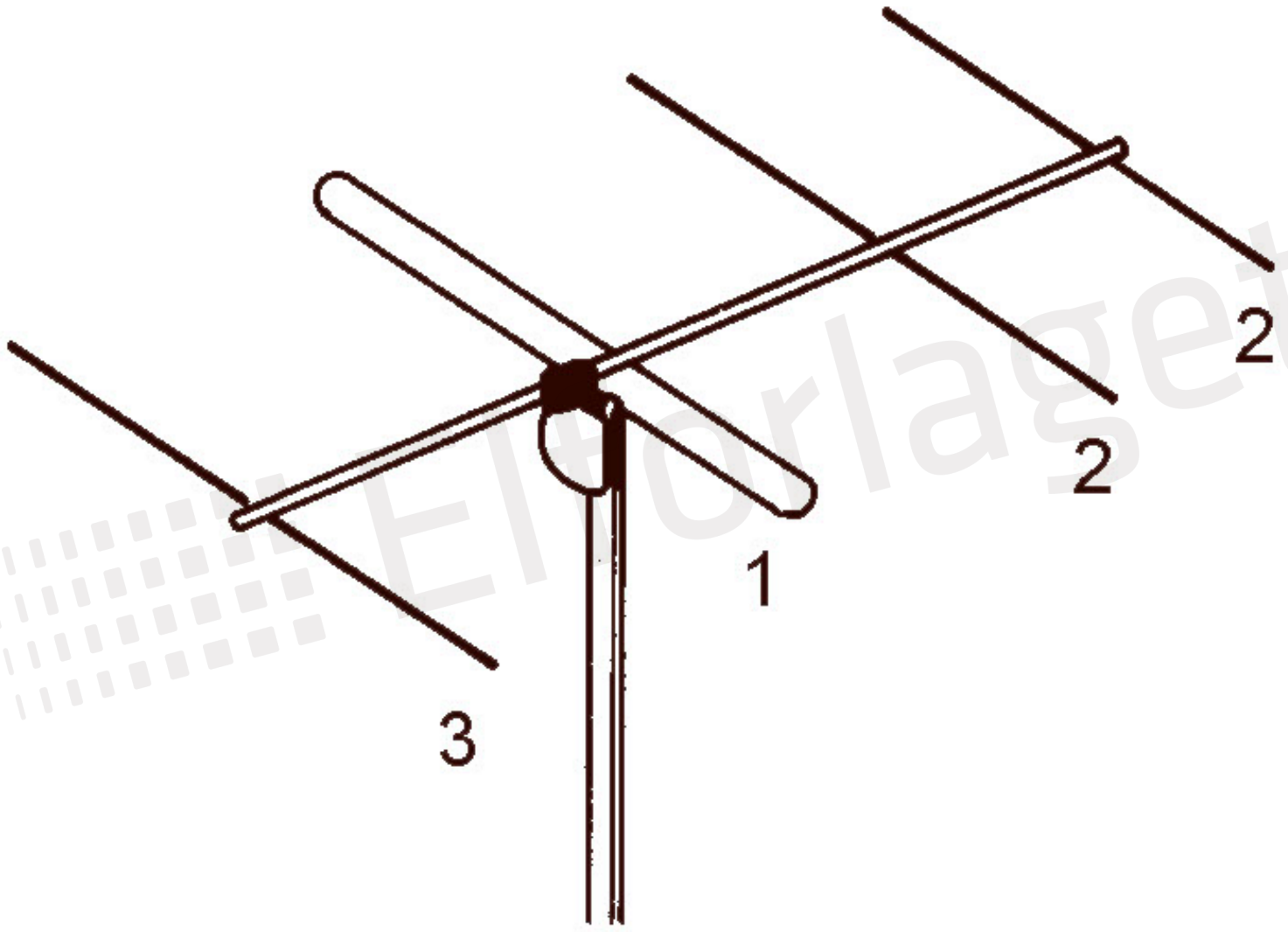


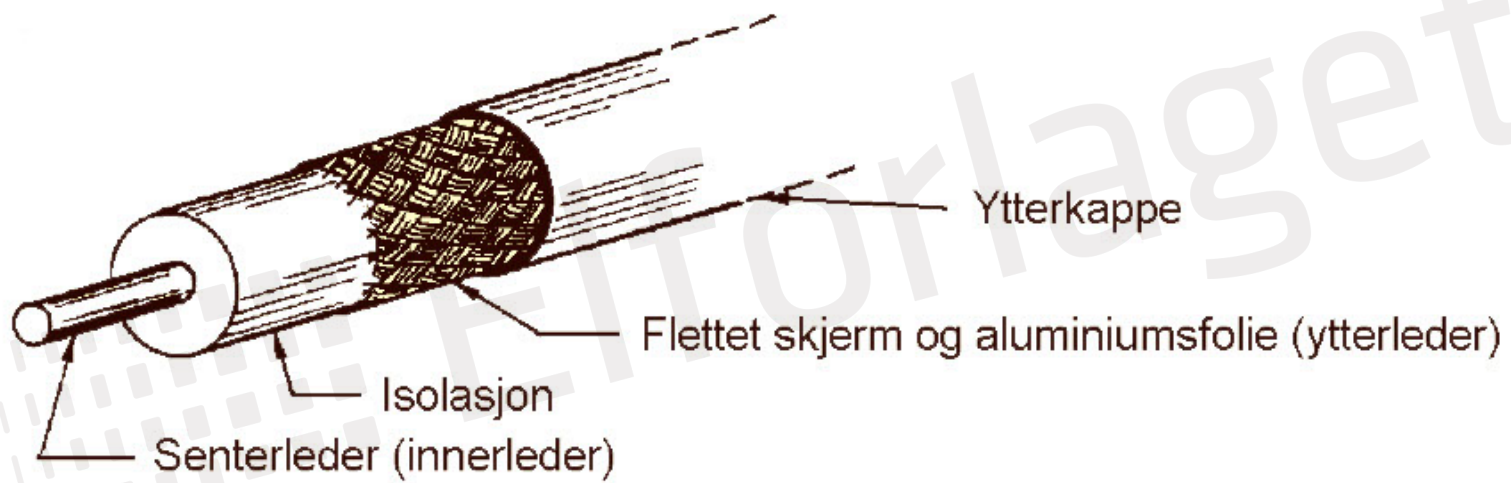


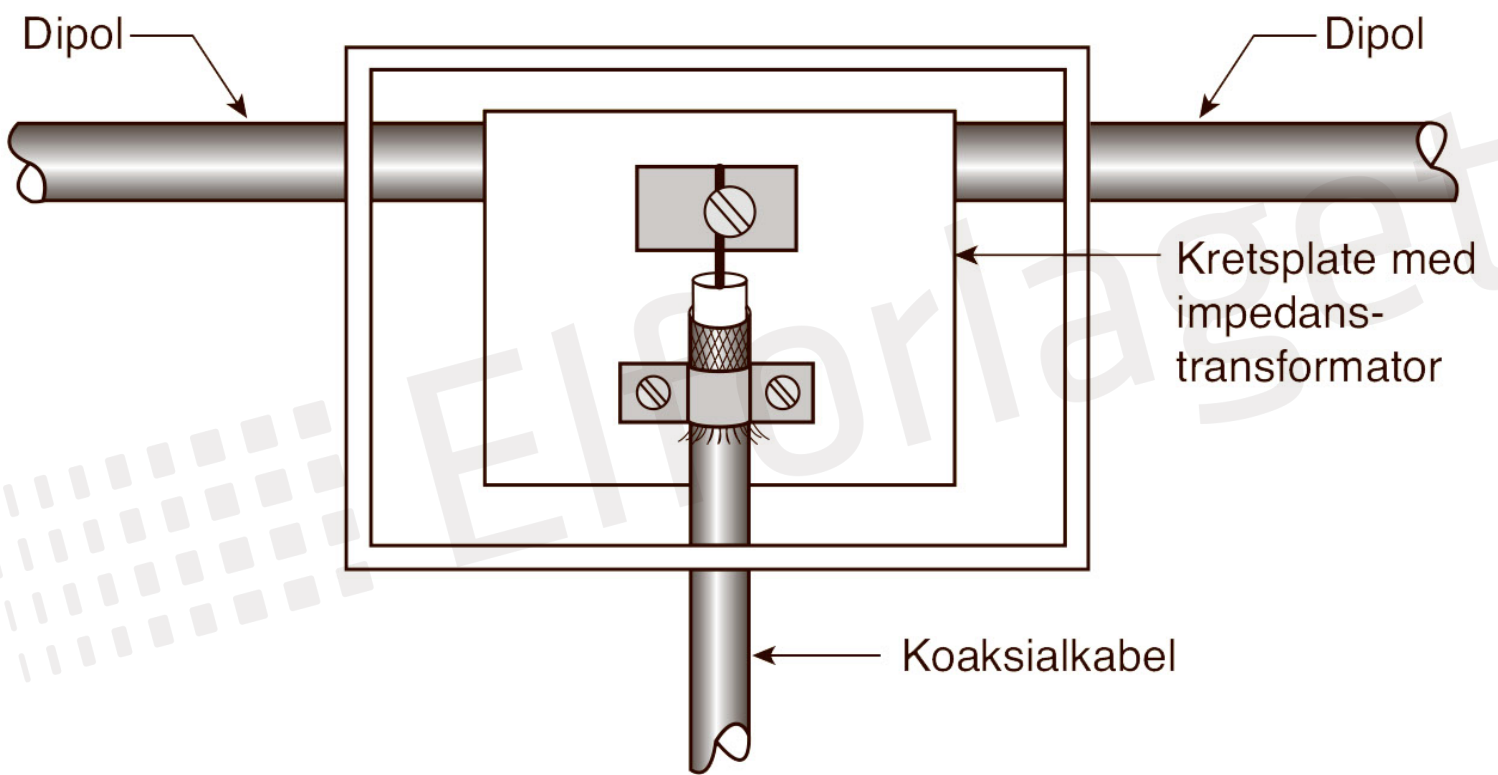
Dryppnese

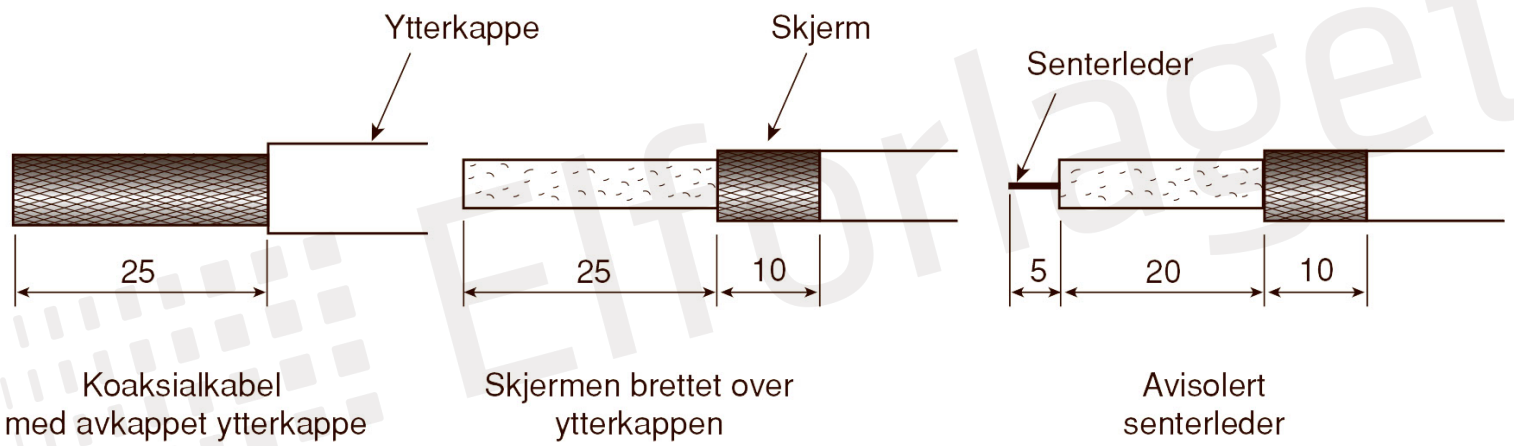
Tettes

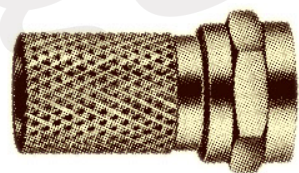
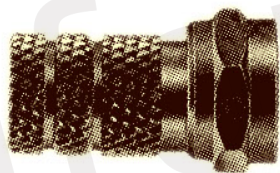
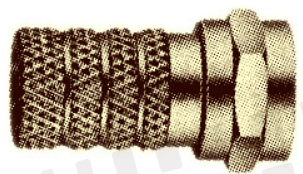
Tettes



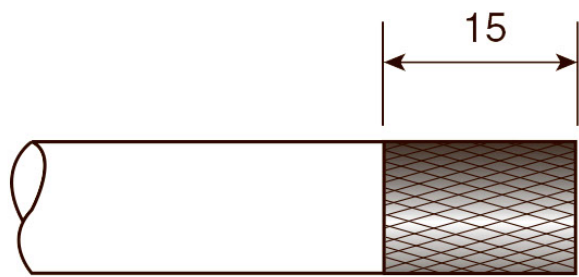




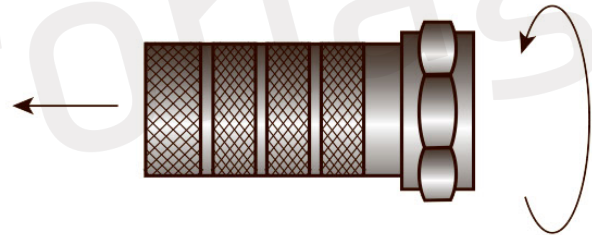
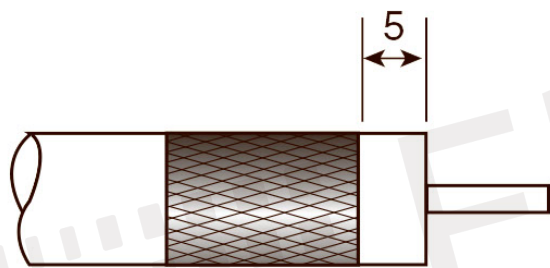




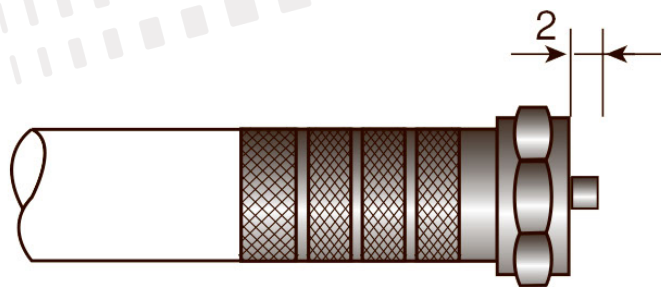
Elforlaget



Alle mål i mm



Vri rundt



λ



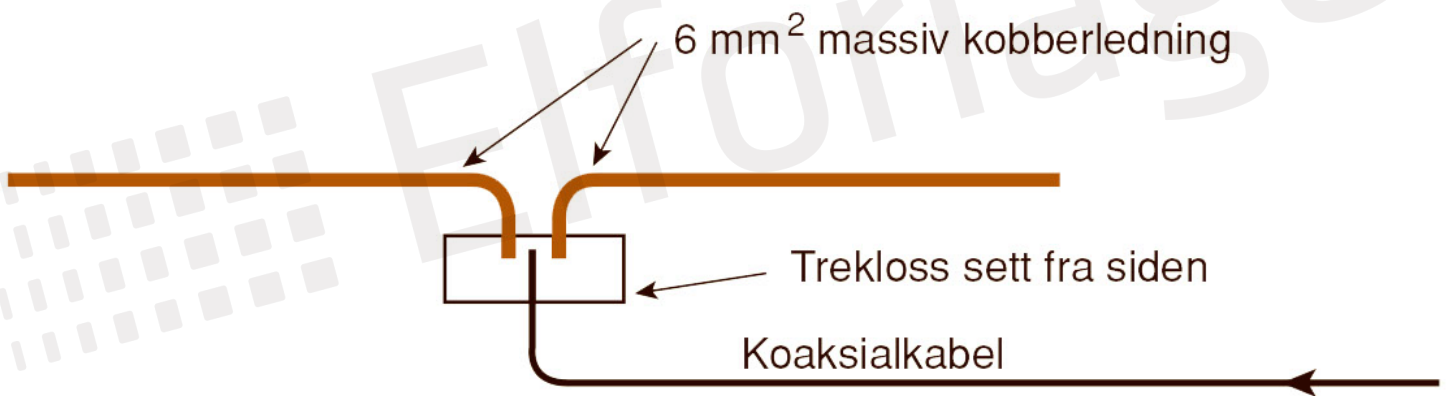
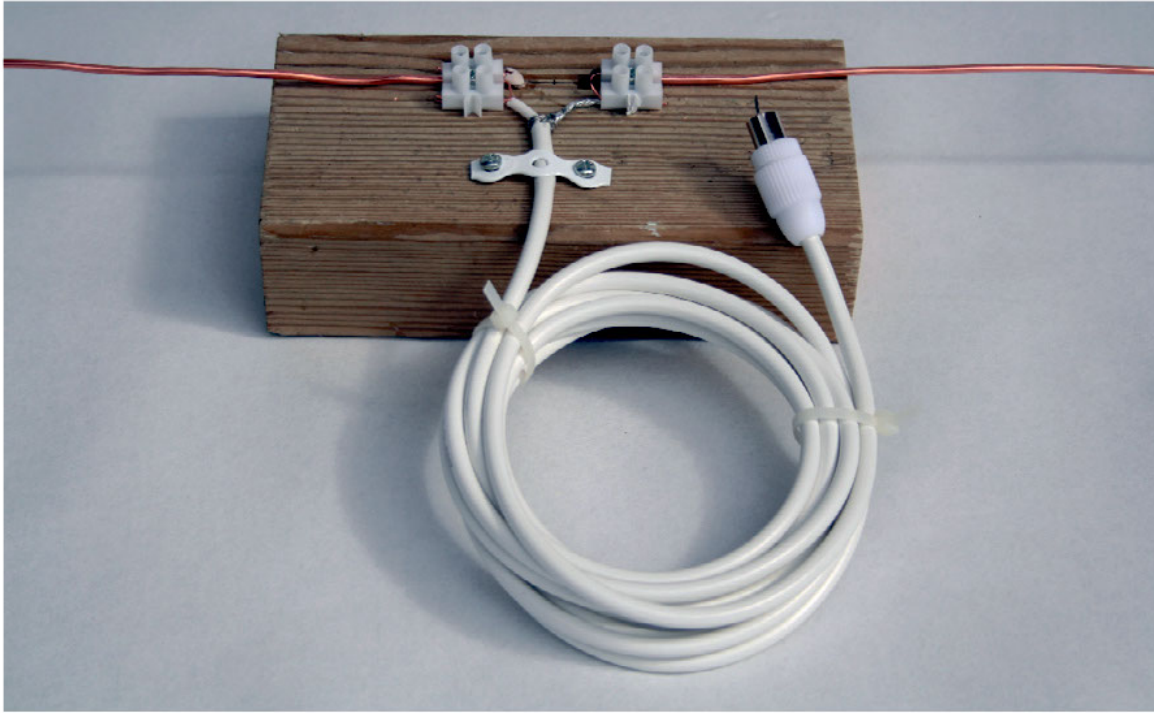
Koaksialkabel



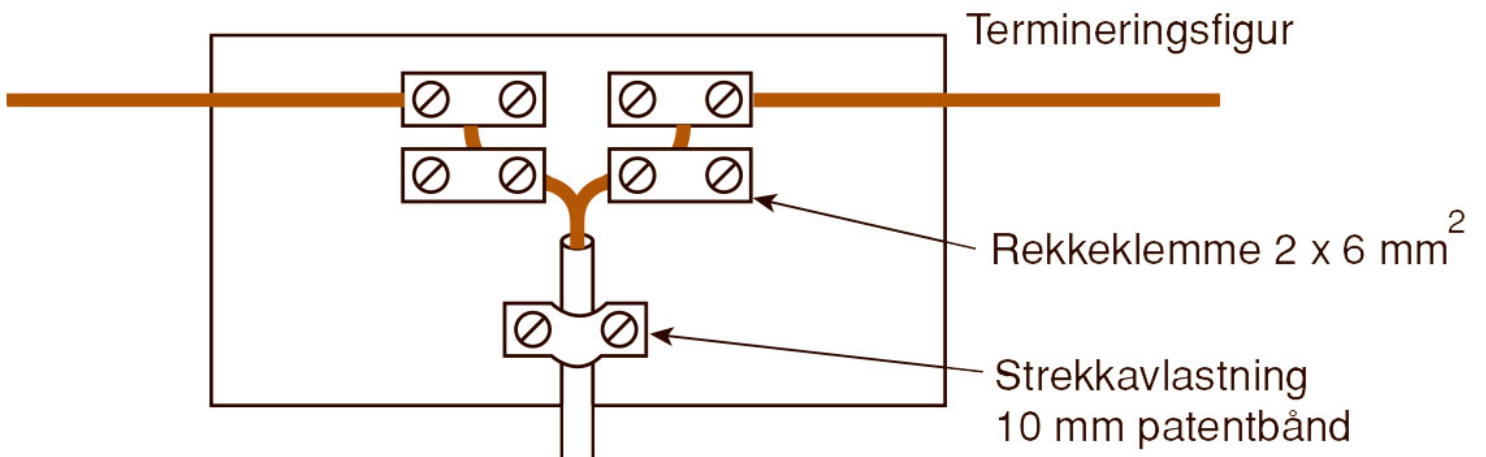
FM-radio

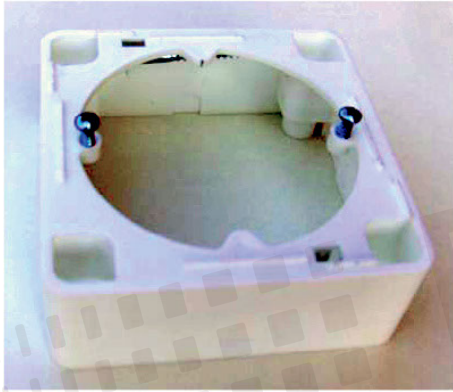


Elforlaget

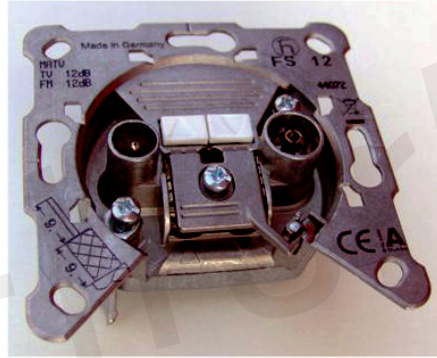


Trekloss sett ovenfra





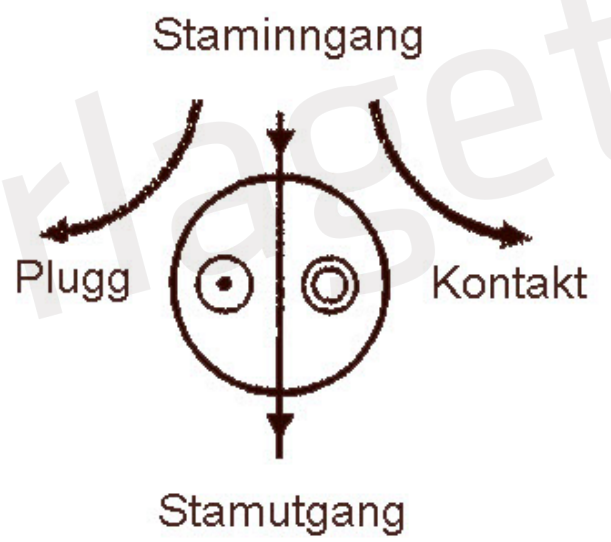
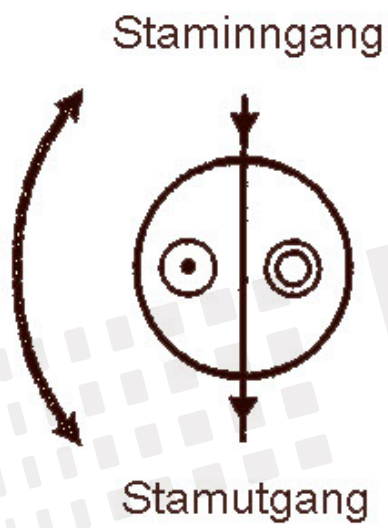
Monteringsramme



Antennekontakt

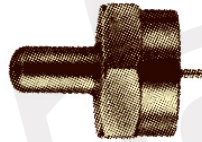


Dekkplate





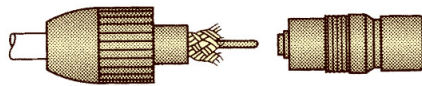
3/8" M (hann) endemotstand.
Brukes ved ubenyttede uttak.
Type: Endemotstand F



75 Ω endesmotstand for avslutning av
kursen på alle typer antennekontakter.
Frekvensområde 0–2400 MHz



Hirschmann-plugg

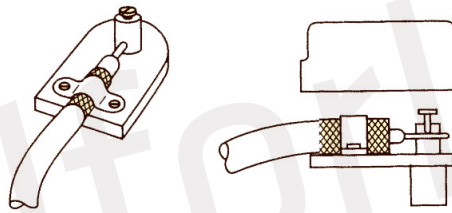


(hunn)

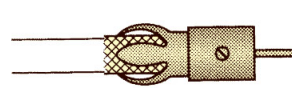
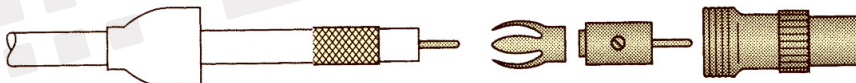


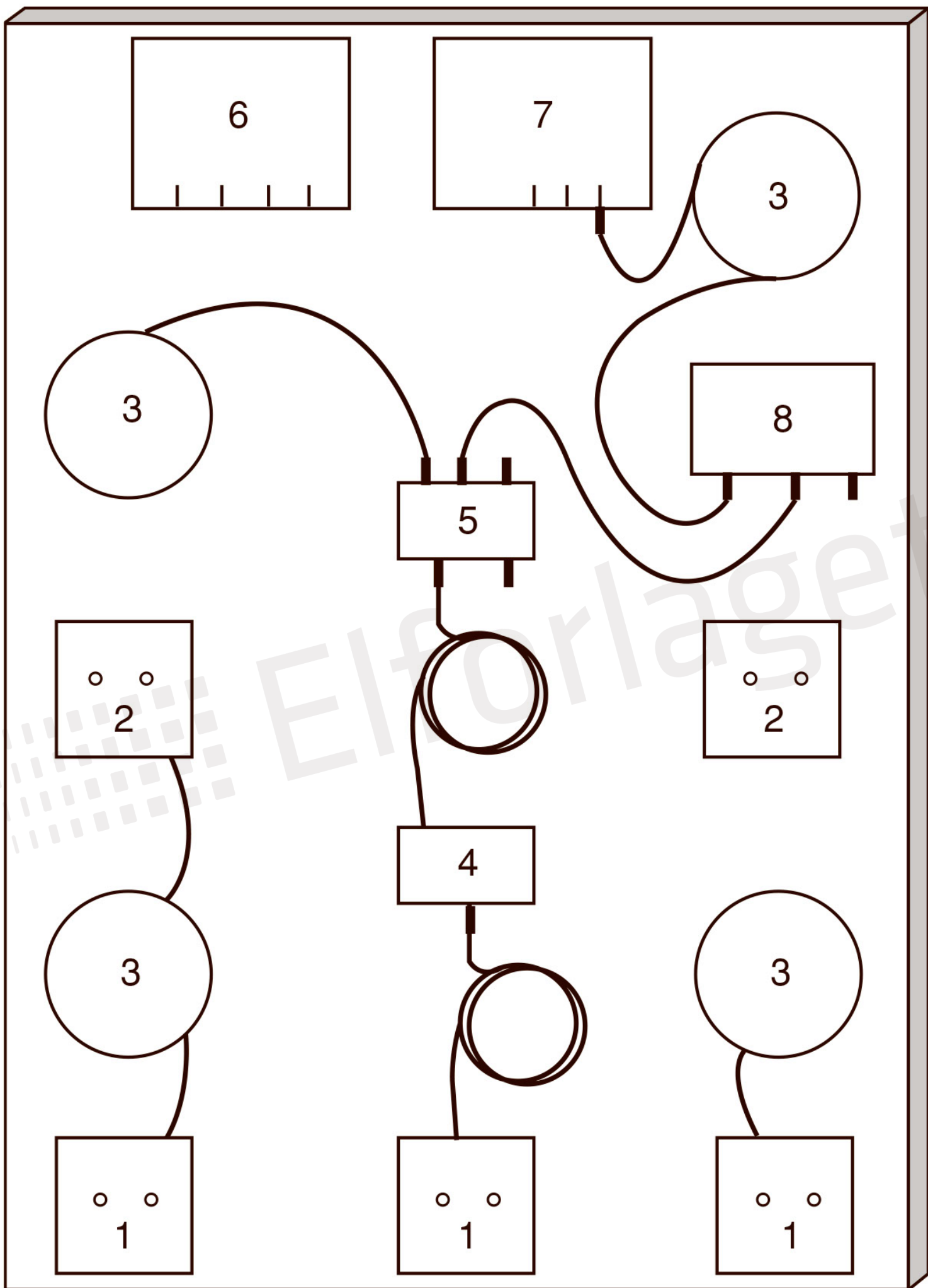
(hann)

IEC vinkelplugg

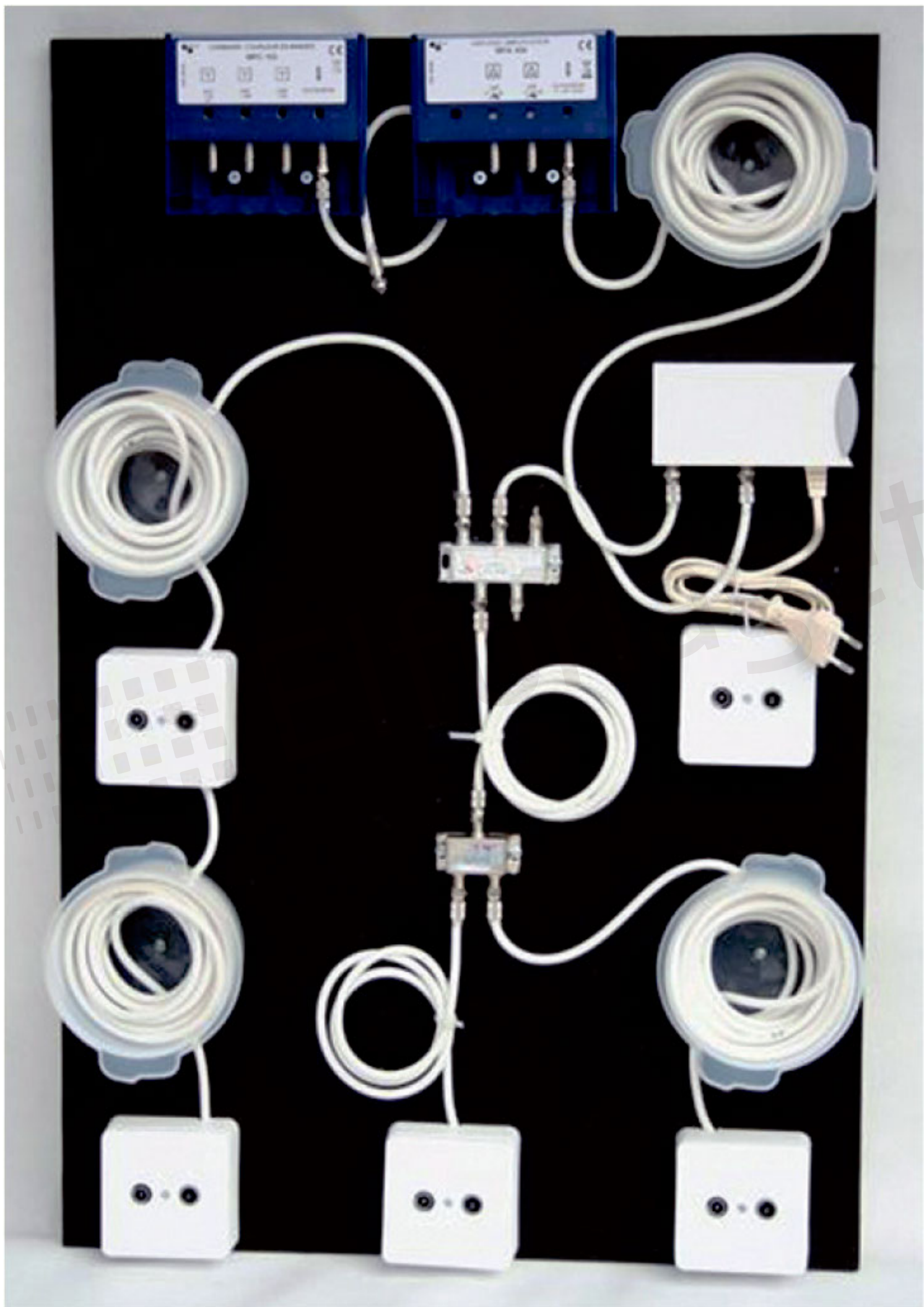


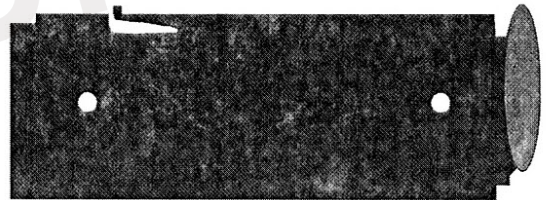
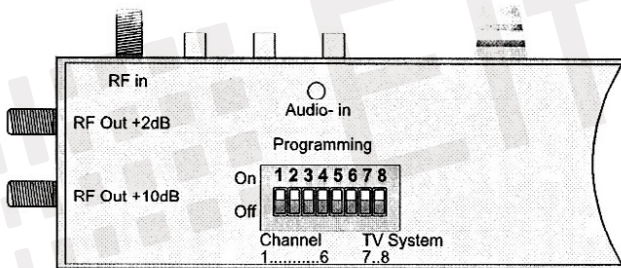
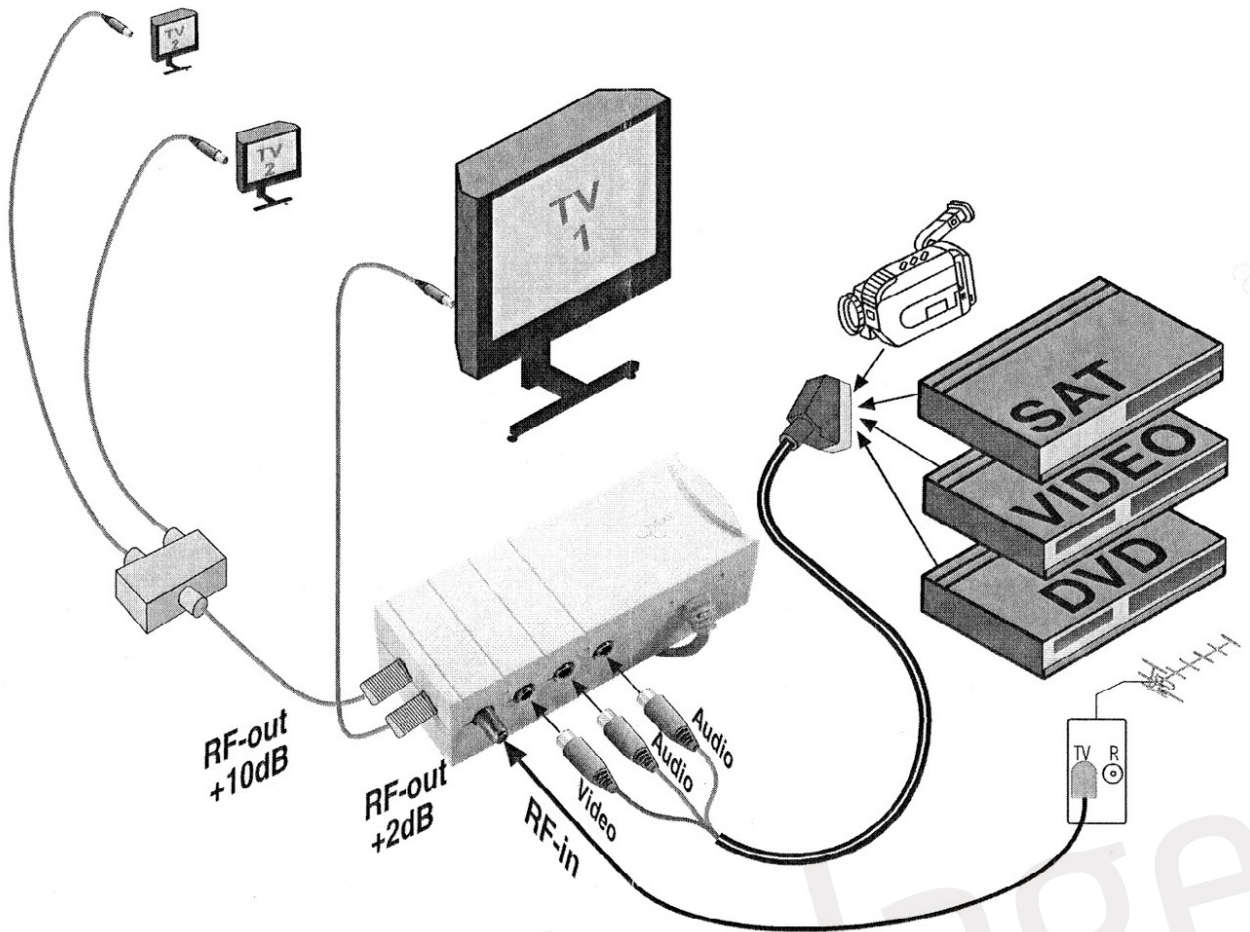
IEC rett plugg





Målestokk: 1 : 5





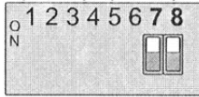
Specification

CM 01 TV Modulator / Modulateur MA

Specifications

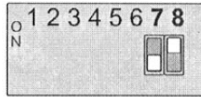
Output Frequency / Fréquences de sortie / Ausgangs-frequenz / Canali di uscita / Frecuencia de Salida	UHF 470-862	
Max. Input level / Max.Niveau entrée / Max. Eingangspegel / Max. Livello di ingresso / Max. Nivel de Entrada/Max. Indgangs niveau	77 dB μ V	
Gain from RF in to RF Out 1 Out 2 (47-862MHz)	Out 1 +2 dB	Out 2 +10 dB
Output level from modulator / Niveau sortie modulateur/ Ausgangpegel modulator Livello di uscita RF modulatore/ Nivel de Salida modulador	Out 1 72 dB μ V	Out 2 82 dB μ V
A/V Input level / A/V Niveau entrée / A/V Eingangspegel / A/V Livello di ingresso / A/V Nivel de Entrada	Audio 0,5 - 1,0 Vrms	Video 0,8..1,0 Vpp

B/G
(VHF)/(UHF)



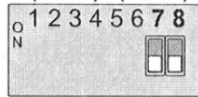
(EU + Australia)

I



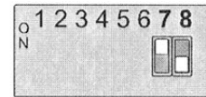
(UK + New Zealand)

D/K
(VHF)/(UHF)



(Eastern part of EU)

L



(France)

CM01 VHF

Output Channel selection
Selección de Sistema TV

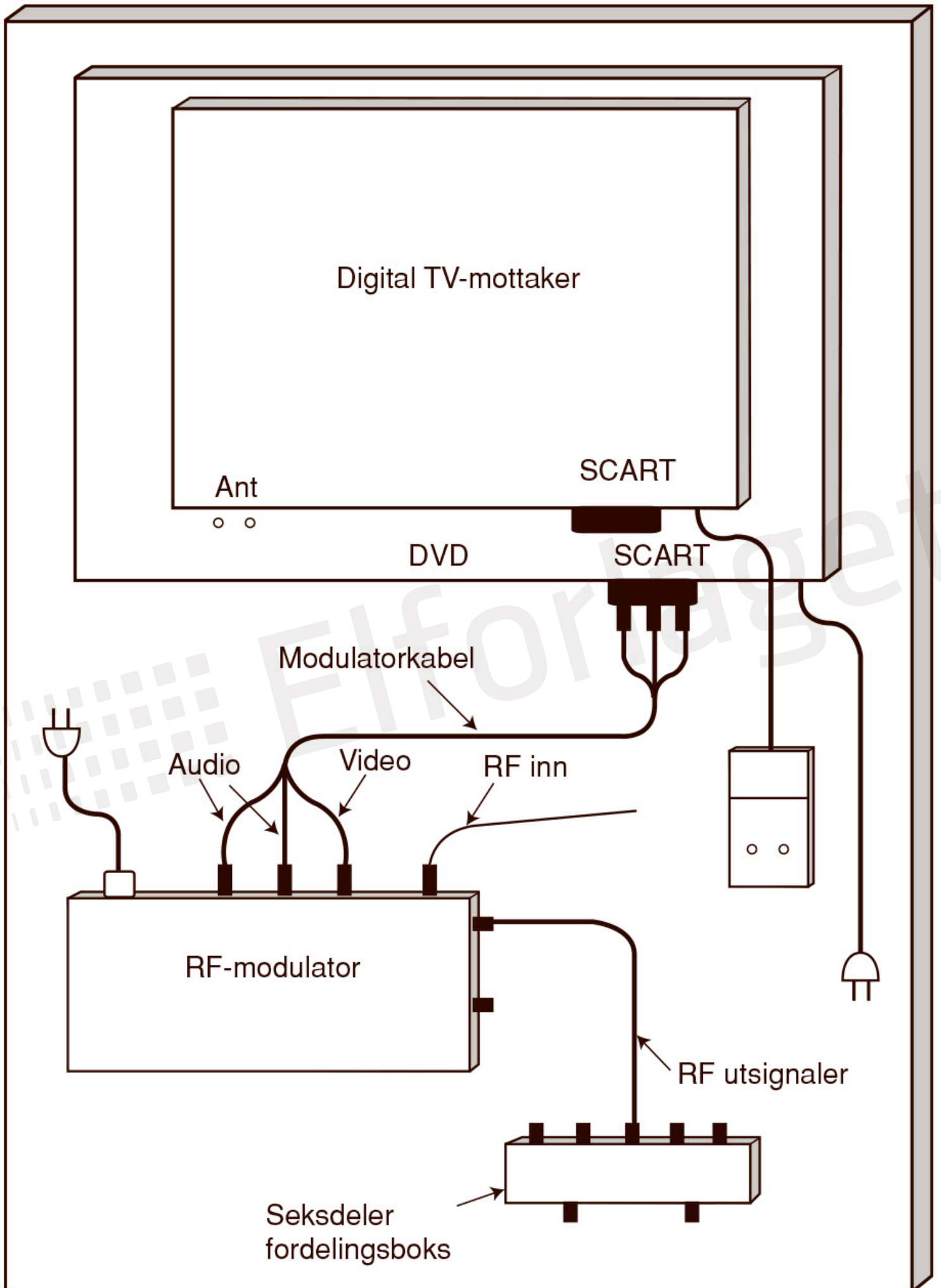
CM01 UHF

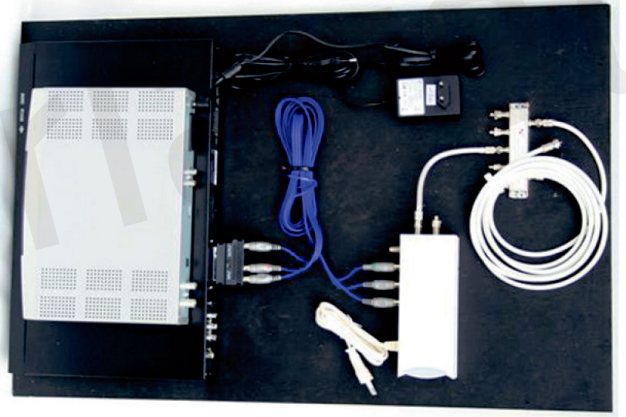
System/Sistema	System/Sistema
B... E05 L... L05 I... I04 D... R06	B... S19 L... S22 I... S21 D... S21
E06 L06 I05 R07	S20 S23 S22 S22
E07 L07 I06 R08	S21 S24 S23 S23
E08 L08 I07 R09	S23 S25 S25
E09 L09 I08 R10	S23 S25 S25
E10 L10 I09 R11	S24 S24
E11 L11 I10 R12	S25 S25
E12 L12 I11 R13	
S11 L13 I12 R14	
S12 L14 I13 R15	
S13 L15 I14 R16	
S14 L16 I15 R17	
S15 L17 I16 R18	
S16 L18 I17 R19	
S17 L19 I18 R20	
S18 S21 I19 R21	

System/Sistema	Channel No. Canales
B... E05... E12, S11...S25 L... L05... L19, S21...S25 I... I04... I19, S21...S25 D... R06... R21, S21...S25	
ITALY B III	
CH D	
CH E	
CH F	
CH G	
CH H	
CH H1	
CH H2	

21	37	53
22	38	54
23	39	55
24	40	56
25	41	57
26	42	58
27	43	59
28	44	60
29	45	61
30	46	62
31	47	63
32	48	64
33	49	65
34	50	66
35	51	67
36	52	68
		69

System/Sistema	Channel No./Canales
G	CH 21...CH69
L	CH 21...CH69
I	CH 21...CH69
K	CH 21...CH69





Tilkoblingskjema

