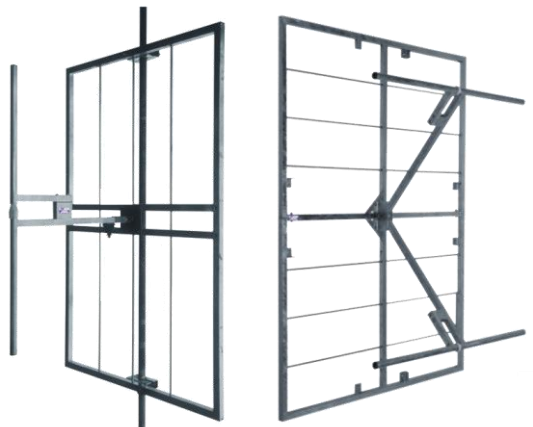




CTE

Digital Broadcast

RADIO ANTENNAS & FILTERS



CTE Digital Broadcast S.r.l.

Sede Legale - Registered Office: Viale Piave, 15 - I-20129 Milano (MI) - Italy

Sede Operativa - Manufacturing and Components Warehouse: Via E. Mattei, 7 - I-30039 Stra (Venice) - Italy

Tel.: +39 0499828694 - **FAX:** +39 0499828694 - **PEC:** ctedb@pec.it - **E-mail:** info@ctedb.com - **Web:** www.ctedb.com

Cap. Soc.: € 100.000,00 I.V. - **C.F.:** Registro Imprese Milano 04912770288 - **REA:** MI 2081436 - **P. IVA:** EU VAT IT 04912770288

CAVITY FILTERS



Cavity Filters

The DCF are one-quarter wavelength coaxial cavities, designed and manufactured according to high quality standards conceived for 87,5÷108MHz band. Using a bandpass double cavity installed between transmitter and antenna they drastically reduce spurious signals, besides other intermodulation products. DCF's and TCF's double and triple cavity filters respectively, are provided with rotating knobs to allow easy tuning of the circuit for different sideband attenuation and with a variable coupling.

SPECIFICATIONS	DCF500	DCF1000	DCF2000	DCF3000	DCF5000	DCF10000	TCF3000
RF Input Power	800	1000	2000	3000	5000	10000	3000
Input Connector	N	7/16		7/8		1+5/8	7/8
Output Connector	N	7/16		7/8		1+5/8	7/8
Weight	10 Kg	11 Kg	18 Kg	12 Kg	29 Kg	40 Kg	27 Kg
Bandwidth (-3dB)	800KHz			600KHz			500KHz
Typical insertion loss	<0,4dB		<0,3dB		<0,2dB		From 0,3 to 0,8 dB
Frequency range	87,5÷108 MHz						
Input Impedance	50 Ohm						
VSWR	≤1.15:1						
Internal parts	Silver-plated brass and PTFE						
External parts	Aluminium						
Colour	Black						
Temperature operating range	From -10°C to +50°C						
Type	double						triple

CAVITY FILTERS

Models

CODE	MODEL	DESCRIPTION
0000170411	DCF 500	800W power rate per channel IN/OUT N
0000170601	DCF 1000	1000W power rate per channel IN/OUT N
0000170019	DCF 2000	2KW power rate per channel IN/OUT N 7/16"
0000170602	DCF 3000	3KW power rate per channel IN/OUT N
0000170412	DCF 5000	5KW power rate per channel IN/OUT 7/8"
0000170603	DCF 10000	10KW power rate per channel IN/OUT N
0000170488	TCF 3000	3KW power rate per channel IN/OUT 7/8"





Startpoint

The startpoint combining filters are pre-set in our labs, at the frequency required by the customers. Even at 100% modulation, they assure a good separation for adjacent frequencies up to 2MHz. They are composed of two or more coaxial cavity filters connected to rigid lines all of them equipped with arrow band input lines. Combining systems for low figures of frequency channels separation and high RF power, will be designed on request by our technical department.

SPECIFICATIONS	DSX 1000	DSX 1000H	TTX 500	DSX 2000	TTX 2000	DSX 5000	TTX 5000	QPX 500	QPX 1000
RF Input Power	800	1000	500	2000		5000		500	1000
Input Connector	N	7/16	N	7/16		7/8	1-5/8	N	7/8
Output Connector	7/16	7/8			1-15/8		3-1/8	7/8	1-5/8
Weight	23 Kg	28 Kg	40 Kg	42 Kg	60 Kg	80 Kg	120 Kg	47 Kg	80 Kg
Minimum Frequency Spacing	2,5 MHz			2,2 MHz					
Isolation Between Channels	>30 dB			>35 dB					
Typical insertion loss	<0,6 dB			<0,5 dB	<0,4 dB				
Frequency range	87,5÷108 MHz								
Input Impedance	50 Ohm								
VSWR	≤1.2:1								
Internal parts	Silver-plated brass and PTFE								
External parts	Aluminium								
Colour	Black								
Temperature operating range	From -10°C to +50°C								

STARTPOINT

Models

CODE	MODEL	DESCRIPTION
0000170421	DSX 1000	Diplexer 800W power rate per channel, IN N, OUT 7/16"
0000170422	DSX 2000	Diplexer 2KW power rate per channel, IN 7/16", OUT 7/8"
0000170423	DSX 5000	Diplexer 4KW power rate per channel, IN 7/8", OUT 1-5/8"
0000170509	DPX 2000T	Diplexer 2KW power rate per channel, with triple cavity, IN 7/16", OUT 7/8"
0000170424	TTX 500	Triplexer 800W power rate per channel, IN N, OUT 7/8"
0000170425	TTX 2000	Triplexer 2KW power rate per channel, IN 7/8", OUT 1-5/8"
0000170386	TTX 5000	Triplexer 4KW power rate per channel, IN 1-5/8", OUT 7/8"
0000170480	QPX 500	Quadriplexer 500W power rate per channel, IN N, OUT 7/8"
0000170483	QPX 1000	Quadriplexer 500W power rate per channel, IN 7/8", OUT 1-5/8"

ON REQUEST, WE HAVE SPECIAL VERSION FOR LOW CHANNEL SPACING (UP TO 1,5 MHz)



DIPLEXER DOUBLE BRIDGE



Diplexer Double Bridge

The “double bridge” combining filters allow easy changes to new figures of the operating frequencies. With 100% modulation, they can satisfactory separate two adjacent frequencies up to 2MHz. They are composed of two different double cavity filters and two hybrid couplers, including narrow band and wide band input lines. Low figures of frequency channels separation and high RF power, will be designed on request by our technical department.

SPECIFICATIONS	DPX 1000	DPX 2000	DPX 4000	DPX 3-5000	TLX 5000
RF Input Power	800	2000	4000	5000	
Input Connector	N	7/16	7/8		1-5/8
Output Connector	7/16	7/8		1-5/8	3-1/8
Weight	28 Kg	58 Kg	60 Kg	107 Kg	230 Kg
Minimum Frequency Spacing	2,2 MHz			1,5 MHz	2,2 MHz
Isolation Between Channels	>30 dB	>35 dB			
Typical insertion loss	<0,6 dB	<0,5 dB			<0,4 dB
Frequency range	87,5÷108 MHz				
Input Impedance	50 Ohm				
VSWR	≤1.2:1				
Internal parts	Silver-plated brass and PTFE				
External parts	Aluminium				
Colour	Black				
Temperature operating range	From -10°C to +50°C				
Cavity Type	Double		Triple		

DIPLEXER DOUBLE BRIDGE

Models

CODE	MODEL	DESCRIPTION
0000170421	DPX 1000	Diplexer Double Bridge 800W power rate per channel, IN N, OUT 7/16"
0000170422	DPX 2000	Diplexer Double Bridge 2KW power rate per channel, IN 7/16", OUT 7/8"
0000170423	DPX 4000	Diplexer Double Bridge 4KW power rate per channel, IN 7/8", OUT 1+5/8"
0000170509	DPX3-5000	Diplexer 5KW power rate per channel with triple cavity IN 7/8", OUT 1+5/8"



FM Power Divider

These power dividers are available for any RF output power with 50ohm impedance (or 75ohm request). They can be supplied with any connector or flange, according to user requirements and for every need regarding the number of outputs. Our power dividers are broadband from 87,5 to 108 MHz and 22 MHz bandwidth. The typical insertion loss is from 0,2 to 0,5 dB with alodyne with insulator in PTFE and o-ring type washers; the body of the device is treated and covered by a special paint for life duration in any climate conditions. Power dividers for other frequency ranges are available upon request.

2-WAY POWER DIVIDER VHF II

CODE	MODEL	INPUT CONNECTOR	OUTPUT CONNECTOR	MAX INPUT POWER (W)
0000170004	PD2-N/N (one single step)	N		800
0000170352	PD2-S/N (one single step)	7/16	N	1600
0000170054	PD2-S/S 2 (one single step)	7/16		2000
0000170460	PD2-F/N	7/8	N	1600
0000170458	PD2-F/S	7/8	7/16	4000
0000170459	PD2-F/F	7/8		5000
0000170406	PD2-Y/S	1+5/8	7/16	4000
0000170416	PD2-Y/F	1+5/8	7/8	10000
0000170407	PD2-Z/Y	3+1/8	1+5/8	20000

FM POWER DIVIDER

Models

3-WAY POWER DIVIDER VHF II

CODE	MODEL	INPUT CONNECTOR	OUTPUT CONNECTOR	MAX INPUT POWER (W)
0000170446	PD3-N/N (one single step)	N		800
0000170451	PD3-S/N (one single step)	7/16	N	2000
0000170452	PD3-F/N (one single step)	7/8	N	2400
0000170453	PD3-F/S	7/8	7/16	5000
0000170454	PD3-F/F	7/8		5000
0000170455	PD3-Y/S	1+5/8	7/16	6000
0000170408	PD3-Y/F	1+5/8	7/8	10000

4-WAY POWER DIVIDER VHF II

CODE	MODEL	INPUT CONNECTOR	OUTPUT CONNECTOR	MAX INPUT POWER (W)
0000170005	PD4-N/N (one single step)	N		1000
0000170024	PD4-S/N	7/16	N	2000
0000170403	PD4-S/S (one single step)	7/16		2000
0000170450	PD4-F/N	7/8	N	3200
0000170055	PD4-F/S	7/8	7/16	5000
0000170460	PD4-F/F	7/8		5000
0000170017	PD4-Y/S	1+5/8	7/16	8000
0000170408	PD4-Y/F	1+5/8	7/8	10000

FM POWER DIVIDER

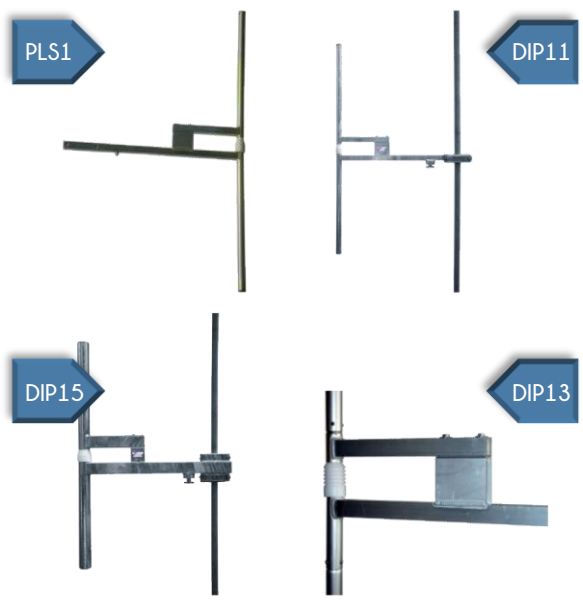
Models

6-WAY POWER DIVIDER VHF II

CODE	MODEL	INPUT CONNECTOR	OUTPUT CONNECTOR	MAX INPUT POWER (W)
0000170022	PD6-S/N	7/16	N	2000
0000170409	PD6-F/N	7/8	N	4800
0000170018	PD6-F/S	7/8	7/16	5000
0000170410	PD6-F/F	7/8		5000
0000170437	PD6-Y/S	1+5/8	7/16	10000
0000170460	PD6-Y/F	1+5/8	7/8	10000



FM DIPOLE ANTENNAS



These dipole antennas are rugged broadband aerials especially designed for arrays composed of several elements. The dipole is made of inox steel to provide high corrosion resistance, for a lifetime duration and operation in any climate conditions. A thick internal ground connection across the feeding line assures heavy duty service and protection in case of lightning. The design of the internal lines and PTFE insulator provide reliability and long lasting operation for power ratings up to 1500W on the DIP11 model, and up to 5000W on the DIP15 model. The aluminium dipole PLS1 model is a smart, effective and budget solution. An accurate testing process is carried out at factory on each of these dipoles to control the compliance to all the stated figures.

FM Dipole Antennas

SPECIFICATIONS	PLS1	DIP11	DIP13	DIP15
RF Input Power	500W	800-2kW-3kW	800-2kW	5kW
Input Connector	N	N-7/16-7/8	N-7/16	7/8
Polarization	Vertical			
Weight	4 Kg	7 Kg	4 Kg	16 Kg
Gain (Referred to half-wave Dipole)	2dB			
H Plane-V Plane	180°-78°			
Max Wind Velocity	150 Km/h			
Frequency range	87,5÷108 MHz			
Wind Load (with speed at 150 Km/h)	10Kgs	18Kgs	10Kgs	25Kgs
Wind surface	0,11SQM			0,18SQM
Frequency range	87,5÷108 MHz			
Input impedance	50 Ohm			
VSWR	≤1,4:1			
Internal parts	Silver-plated brass and PTFE			
External parts	Aluminium	Inox	Aluminium	Zincate Steel
Mounting	From 60 to 120 mm diam.			
Dimension	60 x 1400 x 850			100 x 1340 x 910



FM DIPOLE ANTENNAS

Models

N°BAYES	dB GAIN	POWER GAIN	ANTENNA APERTURE (MT)	WEIGHT (Kg)			WIND LOAD (v=150 Km/h)		
				PLS1	DIP11	DIP15	PLS1	DIP11	DIP15
1	2	1.58	1.4	4	7	16	10	18	25
2	5	3.16	4.1	8	14	32	20	36	50
4	8	6.3	9.5	16	28	64	40	72	100
6	9.8	9.5	14.9	24	42	96	60	108	150
8	11	12.6	20.3	32	56	128	80	144	200

CODE	MODEL	DESCRIPTION
0000170003	PLS1	Aluminium Dipole, 600W N Connector
Upon Request	PLS16	Aluminium Dipole, 1500W 7/16 Connector
0000170013	DIP11/N	Inox Dipole, 600W N Connector
0000170014	DIP11/16	Inox Dipole, 1.5KW 7/16 Connector
0000170015	DIP11/F	Inox Dipole, 1.5KW 7/8 Flange
0000170011	DIP15/F	Zincate Steel Dipole, 5KW 7/8 Flange
0000170597	DIP13/N	Aluminium Dipole, 500W, de mountable N Connector
0000170596	DIP13/H/N	Aluminium Dipole, 800W, de mountable N Connector
0000170484	DIP13/16	Aluminium Dipole, 1500W, de mountable 7/16 Connector

PANEL DIPOLES



Panel Dipoles

These advanced and stainless steel panel antennas are successfully used in high power antenna system arrays. The standard application of the panel antenna is to be mounted on one side of the transmitting tower for radiating systems with directional coverage. Whenever a circular pattern on a large area should be achieved, four antennas can be mounted in correspondence of the four sides of the transmitting tower. An accurate testing processed is carried out at factory on each antenna to control the compliance to all the stated figures.

SPECIFICATIONS	APL1	APL5
RF Input Power	600-1500W	200-5000W
Input Connector	N-7/16-7/8	7/16-7/8
Polarization	Vertical or Horizontal	
Weight	23 Kg	45 Kg
Gain (Referred to half-wave Dipole)	6 dB	7,5 dB
H Plane-V Plane	130°-73° (78°-160°)	57°-73°
Max Wind Velocity	225 Km/h	
Wind Load (with speed at 150 Km/h)	110 Kgs	140 Kgs
Wind surface	0,46 SQM	0,65 SQM
Frequency range	87,5÷108 MHz	
Input impedance	50 Ohm	
VSWR	≤1,4:1	
Internal parts	Silver-plated brass and PTFE	
External parts	Stainless Steel	
Mounting	From 60 to 120 mm diam.	
Dimension	2000 x 1280 x 850	

PANEL DIPOLES

Models

N° BAYES	dB GAIN		POWER GAIN		ANTENNA APERTURE (MT)		WEIGHT (Kg)		WIND LOAD (v=150 Km/h)	
	APL1	APL5	APL1	APL5	APL1	APL5	APL1	APL5	APL1	APL5
1	6	7,5	4	5,6	2	2,5	27	45	110	140
2	9	10,5	8	11,2	4,7	5,2	54	90	220	280
4	12	13,5	16	22,4	10,1	10,6	108	180	440	560
6	13,8	15,3	24	33,6	15,5	16	162	270	660	840
8	15,1	16,5	32	44,8	20,9	21,4	216	360	880	1120

CODE	MODEL	DESCRIPTION
0000170439	APL1/16	Stainless steel panel dipole, 7/16 Connector
0000170440	APL1/F	Stainless steel panel dipole, 7/8 Connector
0000170441	APL1/N	Stainless steel panel dipole, N Connector
0000170012	APL5/16	Stainless steel double panel dipole, 2KW 7/16 Connector
0000170404	APL5/F	Stainless steel double panel dipole, 5KW 7/8 Connector



Circularly Polarized Dipoles

These antennas have been designed to obtain circularly polarized radiant patterns, for low and medium output power FM radio transmitters. For easy and low cost transportation, the PLC4 models are disassembled and packed. The PLC5 model is factory tuned onto any channels within 87.5-108 MHz according to the customer's requests. Standard PLC4 are realized in stainless steel. Due to their higher dimensions and to reduce excessive weight of antenna system, PLC4-H (high power antennas) are realized in aluminium covered by a special paint treatment, for heavy duty service and long term duration.

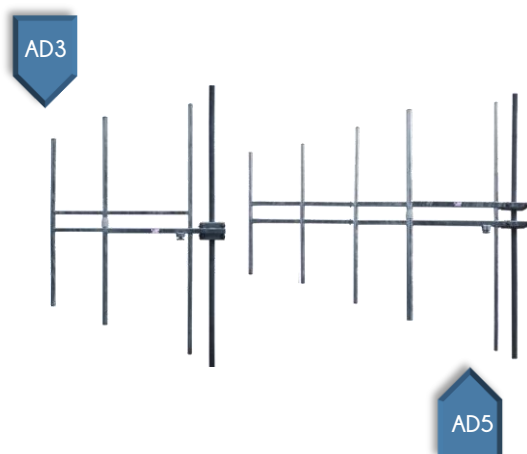
SPECIFICATIONS	PLC4	PLC 4H	PLC 4R	PLC 5
RF Input Power	600-1500-3000W	5000W	600-1500-3000W	500W
Input Connector	N-7/16-7/8	7/8	N-7/16-7/8	N
Polarization	Circular			
Weight	12 Kg	14 Kg		4 Kg
Gain (Referred to half-wave Dipole)	-1,5 dB		0 dB	-1,5 dB
H Plane-V Plane	Omnidirectional		Directional	270°-330°
Max Wind Velocity	150 Km/h			
Wind Load (with speed at 150 Km/h)	45 Kgs	80 Kgs	75 Kgs	25 Kgs
Wind surface	0,15 SQM	0,16 SQM	0,15 SQM	0,09 SQM
Frequency range	87,5÷108 MHz			
Input impedance	50 Ohm			
VSWR	≤1,4:1			
Internal parts	Silver-plated brass and PTFE	Aluminium treatment	Silver-plated brass and PTFE	
External parts	Stainless Steel	Aluminium	Stainless steel	
Mounting	From 60 to 120 mm diam.			
Dimension	1240 x 1520 x 1150			580x850x350

CIRCULARLY POLARIZED DIPOLES

Models

CODE	MODEL	DESCRIPTION
0000170044	PLC4/N	Double-crossed dipole stainless steel, 800W N Connector
0000170043	PLC4/16	Double-crossed dipole stainless steel, 2KW 7/16 Connector
0000170436	PLC4/F	Double-crossed dipole stainless steel, 3KW 7/8 Flange
0000170448	PLC4/H/F	Double-crossed dipole Aluminium, 5KW 7/8 Flange
0000170467	PLC5/N	Tuned dipole narrow band stainless steel, 5KW 7/8 Connector
0000170489	RPLC4	Reflector for double-cross dipole model PLC4, zincate steel
0000170490	RPLC4/H	Reflector for double-cross dipole model PLC4/H, zincate steel





Omnidirectional antennas

These wideband directional antennas are available in two versions with 3 or 5 elements. They are made of stainless steel and are especially designed for medium and high output power transmitters. The robust design of these antennas make them suitable for any climate conditions and lifetime duration, high quality and selected materials have been used in any details: all insulator are made of PTFE and screw are stainless steel. The metallic parts are electrically grounded. The ADR3 model is also available for 140-174 MHz band and 174-215 Mhz, these aerials can be disassembled in two parts, thus allowing lower freighting costs.

SPECIFICATIONS	ADR3	ADR5	LOG5	LOG8
RF Input Power	800-2KW-3KW	800-2KW-4KW	500W	2KW
Input Connector	N-7/16-7/8		N	7/16
Polarization	Vertical		Horizontal and Vertical	
Weight	10 Kg	17 Kg	4,5 Kg	15,5 Kg
Gain (Referred to half-wave Dipole)	5 dB	6,5 dB	6 dB	7,9 dB
H Plane-V Plane	Omnidirectional		Directional	270°-330°
Max Wind Velocity	200 Km/h			
Wind Load (with speed at 150 Km/h)	21,5 Kgs	32 Kgs		
Wind surface	0,19 SQM	0,30 SQM		
Frequency range	87,5÷108 MHz			
Input impedance	50 Ohm			
VSWR	≤1,4:1			
Internal parts	Silver-plated brass and PTFE			
External parts	Stainless Steel			
Mounting	From 60 to 120 mm diam.			
Dimension	2000x1280x850	1850x1800x70		

OMNIDIRECTIONAL ANTENNAS

Models

CODE	MODEL	DESCRIPTION
0000170001	ADR3/N	Double-crossed dipole stainless steel, 800W N Connector
0000170002	ADR3/16	Double-crossed dipole stainless steel, 2KW 7/16 Connector
0000170400	ADR3/F	Double-crossed dipole stainless steel, 3KW 7/8 Flange
0000170385	ADR5/N	Double-crossed dipole Aluminium, 5KW 7/8 Flange
0000170401	ADR5/16	Tuned dipole narrow band stainless steel, 5KW 7/8 Connector
0000170402	ADR5/F	Reflector for double-cross dipole model PLC4, zincate steel
Upon Request	LOG5	Reflector for double-cross dipole model PLC4/H, zincate steel
Upon Request	LOG8	FM Log Periodic 8-Elements Aluminium 500W Demontable 7/16

