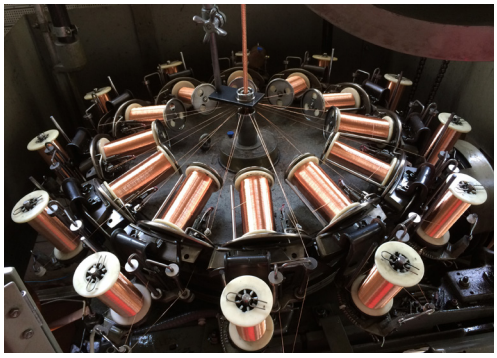
MESSI & PAOLONI®

COAXIAL CABLES

PROUD OF "OUR" MADE IN ITALY

Messi & Paoloni has celebrated on March 10th 2016, 70 years in business, 60 of which have been spent in telecommunications.

71 years ago, the 18th of July 1944, Ancona was seized by the II polish army corps.
During the anglo-american occupation, two young boys, the 17 years old Messi Michele and the 21 years old Dino Paoloni, were employed as civil personnel in the allied military transmitting station of Ancona harbour. It was here, during this job, that they first met each other, sharing their passion for telecommunications. Two years later, the two friends decided to establish the Messi & Paoloni company. During the first ten years of their activity, these young boys, selected their purchases at the post-war Photokina exhibition in Cologne, and rushed all around central Italy, selling, installing and servicing film projectors in all the new cinemas being rebuilt after the destruction of the war. In June 1956 they became Fracarro agents for Marche and Umbria, settling back to their first love: **Radiofrequency.** During this long term cooperation with Fracarro (the major italian TV antenna manufacturer), they decided to establish in 1974 the coaxial cable factory (primarily 75 Ohm). Several years later, the passion for radiofrequency affected the two partners sons, Paolo Paoloni and Stefano Messi. This led to the start of 50 Ohm cables production. In 1985 we started our business relationship with the first German customer (Kabel Kusch) : a long lasting and satisfactory 50 Ohm experience together. With the acquisition of 100 % of the shares in 1995, **Stefano and Maurizio Messi** took up the torch from the "founders", carrying out passionately complex projects and continuing the legacy of innovation.
The continuous improvements in the different production cycles and continuous investments in research and technological innovation, brought the **"GAS EXPANDED TL"** technology.
The new models designed for the HAM RADIO world, (M&P-BROAD-PRO 50C, M&P-ULTRAFLEX 10, M&P-ULTRAFLEX 13/.500", M&P-ULTRAFLEX 7, M&P-AIRBORNE 5, M&P-AIRBORNE 10), are all made with screening efficiency >105 dB!
This leads to an excellent immunity against electromagnetic interferences and **low frequency impulsive noises, (responsible for the increasing of the background noise levels).**
Moreover, having very well screened cables, such as these items, gives the Ham Radio world the chance to dramatically reduce the noise level emissions from the cable itself, minimizing troubles in urban flats and urban areas.
Differently, cables such as RG 213/U or RG 8, have 55 dB of screening efficiency, RG 58 C/U has 50 dB of screening efficiency and the extra shielded RG 214 A/U despite its impressive dual screen, can not show off more than 80 dB!



In order to achieve such top level screening efficiency values, we use in our production 24 spools braiding machines: that means 50% more crossovers if compared to traditional 16 spools braiding machines used by the most famous cable manufacturers in the world.

Quality is the philosophy behind the construction of each one of our cables.
Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket).

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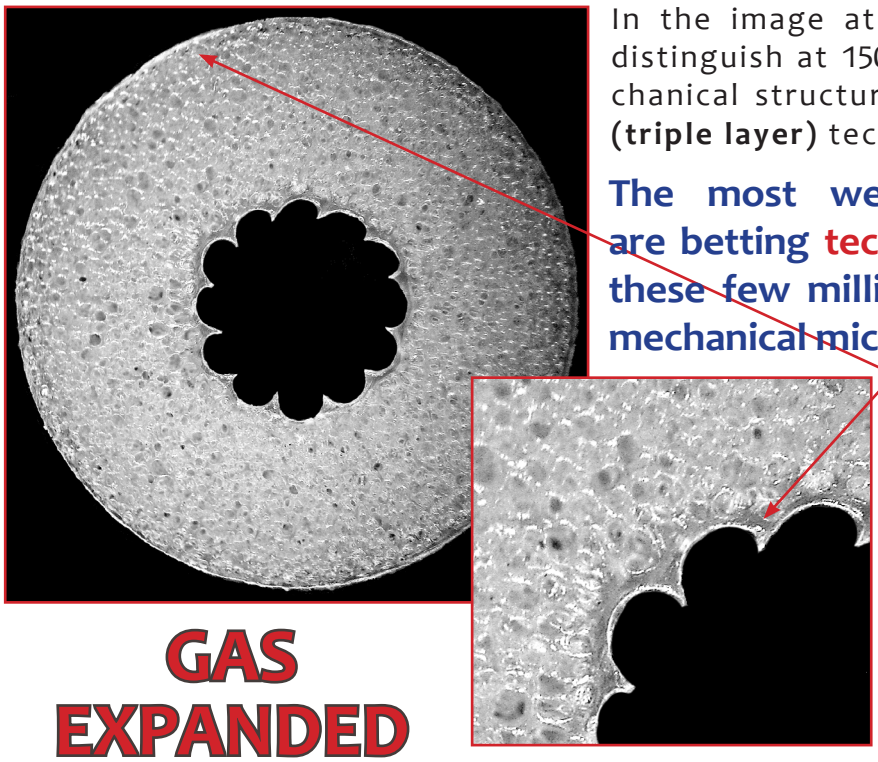
The difficulty does not lie in making a triple layer dielectric, but in closing and sealing the perfectly homogeneous foam, with its alveolar structure and sophisticated mechanics, between two protective layers (skins).

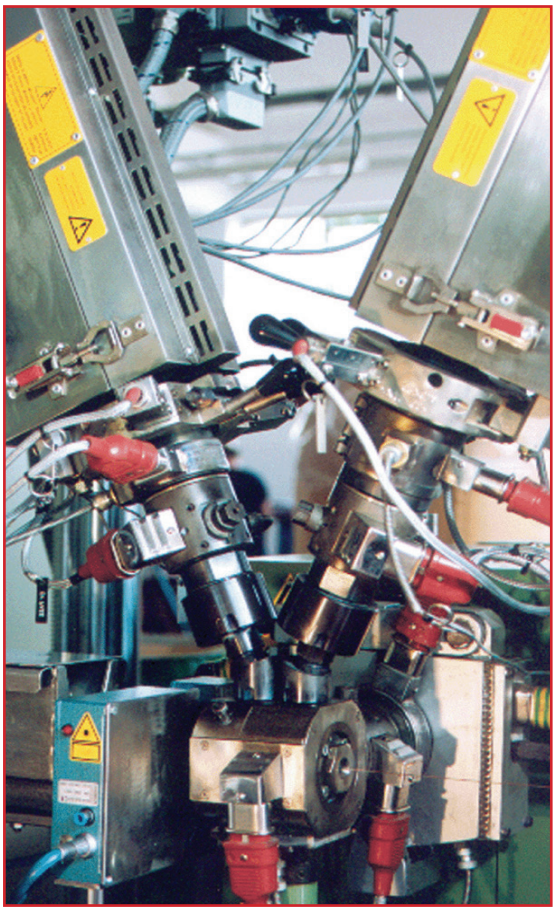


In the image at your left, we can clearly distinguish at 150 x magnifications, the mechanical structure of the **Gas Expanded TL (triple layer)** technology.

The most well-known manufacturers are betting technological supremacy on these few millimeters, on this physical-mechanical microcosm!

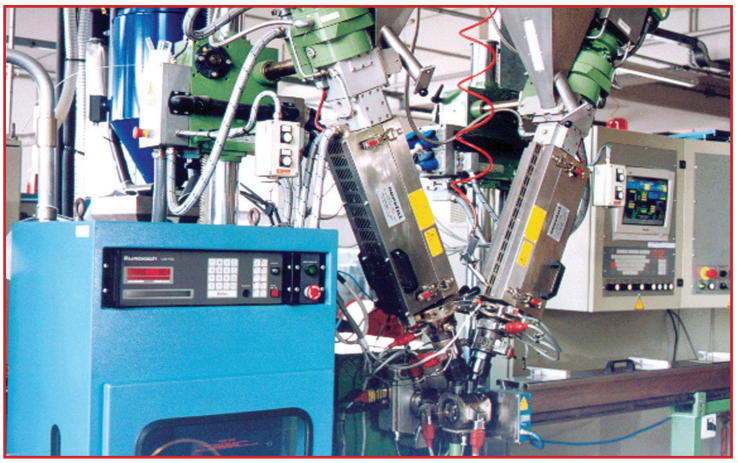
GAS EXPANDED TRIPLE LAYER

The two protective layers are adding to these cables, excellent resistance to high moisture persistence environments.
(**anyway, water tight connectors are warmly recommended, as moisture can penetrate through the connector itself, circumventing the above mentioned protective layers.**).



It's quite clear that the outer sealing layer, is preserving the dielectric properties of the sophisticated structural geometry. The inner foam, is also enclosed by a protective inner barrier (in contact with the central conductor).

In the cables for underground laying, where more than in any other application, such moisture persistance might occur, in addition to these new protections, we apply a further expensive **Petrol Jelly (PJ)** layer over the braid.



Ham Radio Pro Cables

M&P

MESSI & PAOLONI

Broad-pro 50 C

Competition **Double Jacket**

High resistance copper screen (**Cu**) made by means of **24 spools** braiding machines. (50% more crossovers if compared to traditional 16 spools machines.) This braid is **HIGHLY EFFECTIVE AGAINST LOW FREQUENCY IMPULSIVE NOISES.**
SCREENING PERCENTAGE: 71%
144 wires

High pressure physical injection foamed polyethylene **TRIPLE LAYER DIELECTRIC**
FPE Ø 7,3 ± 0,05 mm

Black protective PVC jacket, (0,488 inches) black PVC Ø 12,4 mm ± 0,20, red PE Ø 9,9 mm ± 0,20

Black protective PVC jacket, waterproof and UV resistant. This cable can be laid underground. The red PE jacket clearly shows potential cracks on the above external sheath. (which might occur during pulling on rocky and rough environments).

In order to prevent braid oxidation, we apply a thin Petrol Jelly layer (flooding), adding an extra waterproofing protection.

Inner conductor : 99,99% pure electrolitic annealed bare copper.
(annealed = thermal softening process)
Cu Ø 2,76 mm
(0,108 inches)

The copper foil has an applied PE-coating, placed in order to prevent foil cracking due to short radius bends.
SCREENING PERCENTAGE 100%
CU-POL

CE

Pb

RoHS COMPLIANT 2002/95/EG

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	0,65	0,20
3,5 MHz	0,85	0,26
7,0 MHz	1,08	0,33
10 MHz	1,2	0,37
14 MHz	1,39	0,42
21 MHz	1,75	0,53
28 MHz	1,93	0,59
50 MHz	2,5	0,76
100 MHz	3,6	1,10
144 MHz	4,4	1,34
200 MHz	5,2	1,58
400 MHz	7,5	2,29
430 MHz	7,8	2,38
800 MHz	10,9	3,32
1000 MHz	12,3	3,75
1296 MHz	14,1	4,30
2400 MHz	19,8	6,04
3000 MHz	22,5	6,86
4000 MHz	26,8	8,17
5000 MHz	30,5	9,30
6000 MHz	34,1	10,39
7000 MHz	37,6	11,46
8000 MHz	41,0	12,50
10.000 MHz	46,8	14,26
12.000 MHz	52,2	15,19

ELECTRICAL DATA

Impedance @200MHz:		50 Ohm ± 3
Minimum bending radius:		
Multiple bends/single bend		124/80 mm
Temperature:	installation	-40° to +60° C
	operative	-55° to +85° C
Capacitance:		74 pF/m ± 2
Velocity ratio:		85 %
Screening efficiency:		
100-2000 MHz		>105 dB
Class		A++
Inner conductor resistance:		3 Ohm/Km
Outer conductor resistance:		9,2 Ohm/Km
Tension test (spark test):		8 kV
Weight (100m):		17 Kg
Maximum peak power:		14500 WATT

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>25 dB
1200-2000 MHz	>20 dB

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP	FREQUENCY	MAXP
1,8 MHz	10831 W	430 MHz	947 W
3,5 MHz	8471 W	800 MHz	679 W
7,0 MHz	6667 W	1000 MHz	600 W
10 MHz	6000 W	1296 MHz	522 W
14 MHz	5180 W	2400 MHz	364 W
21 MHz	4114 W	3000 MHz	314 W
28 MHz	3731 W	4000 MHz	261 W
50 MHz	2769 W	5000 MHz	225 W
100 MHz	2045 W	6000 MHz	199 W
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400 MHz	986 W	10.000 MHz	136 W

For step by step assembly instructions of connectors, please visit our website www.messi.it

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

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Given a power fed to the X value (any value expressed in Watts), the actual power output of the cable is shown in the table in the form of remaining percentage. (for example, if we use a cable such as M&P-BROAD-PRO 50/c, entering 1000 Watts over a length of 35m, at a frequency of 144 MHz, there remains 70.7% of 1000). **For maximum applicable power, see the Power Handling of the cable concerned.** From these values, have already been deducted the SRL values, typical of each one of our models, for the respective frequencies.
REMEMBER: Make sure to match the line accurately!

M&P-BROAD-PRO 50/C / M&P-BROAD-PRO 50/C Double Jacket

		length --->	16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m
Frequencies / Frequenze	85.71 m	3,5	98.9	98	97	96.1	95.2	93.3	90.6	86.4	82.2	77.6	73	67.6	55.5	Useful signal output (residual power %)
	42.85 m	7	98.7	97.5	96.3	95.1	93.9	91.6	88.3	82.9	77.9	72.4	67.1	60.8	47.4	
	21.42 m	14	98.4	96.8	95.3	93.7	92.4	89.3	85.1	78.6	72.6	65.9	59.9	52.7	38.2	
	10.71 m	28	97.8	95.6	93.5	91.4	89.4	85.5	80	71.7	64	56.2	49.1	41	26.3	
	6 m	50	97.2	94.5	91.8	89.3	86.8	82	75.4	65.4	56.8	48	40.5	32.3	18.4	
	2 m	144	95	90.5	86.2	82	78	70.7	61	47.6	37.2	27.7	20.6	13.8	5.1	
	69 cm	430	91.5	83.8	76.7	70.3	64.4	54	41.5	26.8	17.2	10.1	5.9			
	23.1 cm	1296	84,4	71,6	60,8	51,6	43,8	31,5	19,1	8,1	3,3					
	12.5 cm	2400	78	61.8	48.9	38.6	30.4	18.7	8.6							
	10 cm	3000	75.2	57.4	43.8	33.2	25.2	14.2	5.6							
	7.5 cm	4000	71.2	51.4	37	26.5	18.9	9.23								
	6 cm	5000	67.2	45.9	31.1	20.9	13.8	5.6								
	5 cm	6000	63.4	40.9	26.2	16.4	9.9									
	3.75 cm	8000	57	33	19	10										
	3 cm	10.000	50	26	12											
	2.5 cm	12.000	43	18												

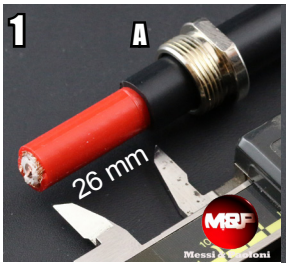
M&P-BROAD-PRO 50/C (Power Handling/Temperature)

			Temperature C° / F°									
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158
Frequencies / Frequenze	166.66 m	1,8	13300	13300	13300	13300	12900	12174	10831	9239	7647	6065
	85.71 m	3,5	13112	12672	12299	11520	10605	9521	8471	7225	5980	4744
	42.85 m	7	10320	9973	9680	9067	8347	7493	6667	5687	4707	3733
	30 m	10	9288	8976	8712	8160	7512	6744	6000	5118	4236	3360
	21.42 m	14	8018	7749	7521	7045	6485	5822	5180	4418	3657	2901
	14.28 m	21	6369	6155	5974	5595	5151	4624	4114	3509	2905	2304
	10.71 m	28	5775	5581	5417	5074	4671	4193	3731	3182	2634	2089
	6 m	50	4287	4143	4021	3766	3467	3113	2769	2362	1955	1551
	3 m	100	3166	3060	2970	2782	2561	2299	2045	1745	1444	1145
	2.08 m	144	2604	2517	2443	2288	2106	1891	1682	1435	1188	942
	1.5 m	200	2185	2112	2050	1920	1768	1587	1412	1204	997	791
	75 cm	400	1527	1476	1432	1341	1235	1109	986	841	696	552
	69 cm	430	1467	1417	1376	1288	1186	1065	947	808	669	531
	37.5 cm	800	1051	1016	986	924	850	763	679	579	480	380
	30 cm	1000	929	898	871	816	751	674	600	512	424	336
	23.1 cm	1296	808	781	758	710	653	586	522	445	368	292
	12.5 cm	2400	563	544	528	495	455	409	364	310	257	204
	10 cm	3000	487	470	457	428	394	353	314	268	222	176
	7.5 cm	4000	404	390	379	355	327	293	261	223	184	146
	6 cm	5000	348	337	327	306	282	253	225	192	159	126
	5 cm	6000	308	298	289	270	249	224	199	170	140	111
	4.2 cm	7000	275	266	258	242	223	200	178	152	126	100
	3.75 cm	8000	249	241	234	219	202	181	161	137	114	90
	3.3 cm	9000	227	220	213	200	184	165	147	125	104	82
	3 cm	10.000	211	204	198	185	171	153	136	116	96	76

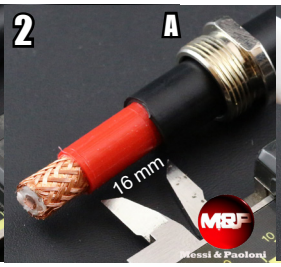
WATT

Connector assembly

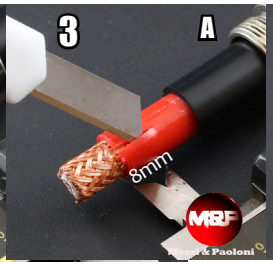
Connector “N” type : C.N.BROAD50DJ-MS



Insert in the cable components A and make a circular cut on the black PVC outer jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

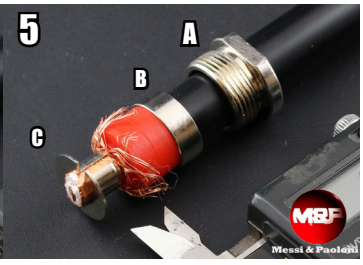


Make a circular cut on the red PE jacket and slide it away as shown in the picture. The remaining visible red jacket must be of the length indicated by the caliber.

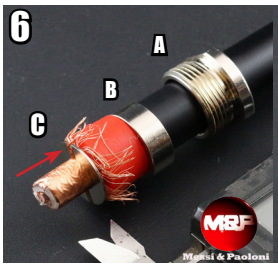


After having made the first cut, as shown in picture 3, rotate the cable 180 degrees and make a second cut in the same way.

Insert component B as shown in the picture.

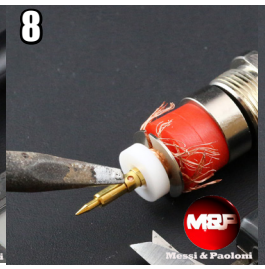


Insert component C after having opened the braid as shown in the picture.



Push component C between the foil and the braid until it stops against the red PE jacket.

Cut and remove the tape and dieletric for a lenght as shown in the picture (6mm).



Insert one of the two teflon discs and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to damage with excessive heat the cable dielectric. (which is not made in teflon!)

Insert the second teflon disc as shown in the picture.

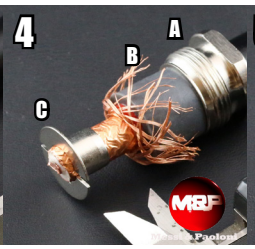
Insert the connector and fasten accurately until the component A, will be pressed against the connector body.

Connector “UHF” type : C.UHF.BROAD50-M

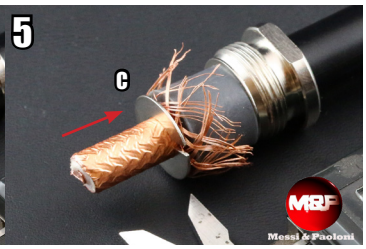
Make a circular cut on the black PVC outer jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

Make a circular cut on the red PE jacket leaving the remaining red jacket length indicated in caliber. Subsequently remove it.

After having made the first cut, as shown in picture 3, rotate the cable 180 degrees and make a second cut in the same way.

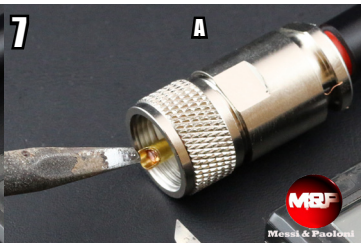


Insert components A and B as shown in the picture. Subsequently insert component C after having opened the braid as shown in the picture.



Push component C between the foil and the braid until it stops against the red PE jacket.

Cut and remove the tape and dieletric for a lenght as shown in the picture.



Insert the connector and solder it with tin to the inner conductor (see picture above). Avoid heating for a too long time in order not to damage with excessive heat the cable dielectric. (which is not made in teflon!)

8

Fasten together the connector and component A, until it will be pressed against the connector body. Inside, the rubber component B (pic. 6) will expand, granting optimal sealing against moisture and a perfect contact to ground.

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Ham Radio Pro Cables

M&P

Broad-pro 50 C Competition

MESSI & PAOLONI

EXTRA FLEXIBLE

UV resistant PVC jacket.

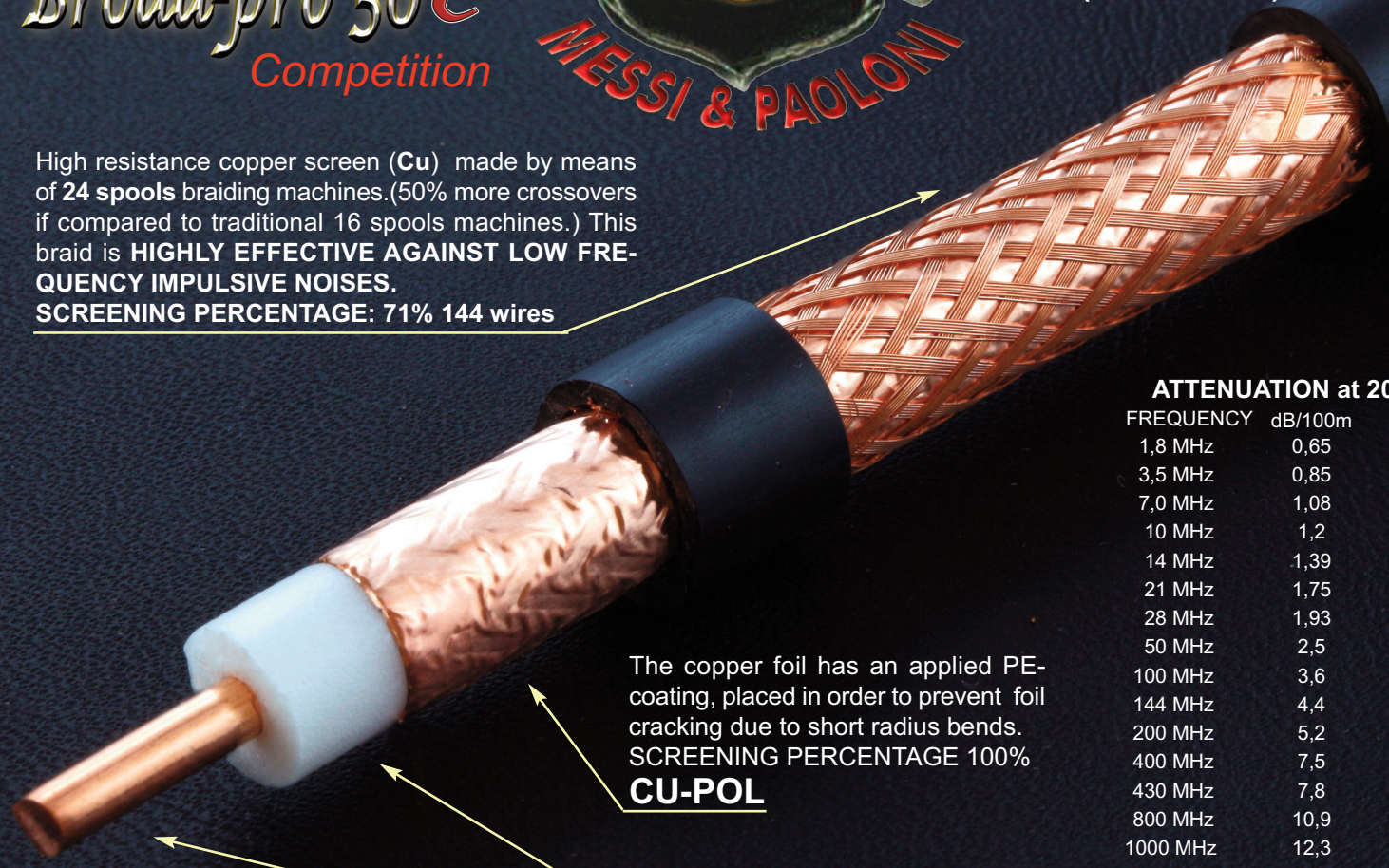
PVC Ø 10,3 ± 0,15 mm

(0,405 inches)

CE

Pb

RoHS COMPLIANT 2002/95/EG



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SCREENING PERCENTAGE: 71% 144 wires

The copper foil has an applied PE-coating, placed in order to prevent foil cracking due to short radius bends.
SCREENING PERCENTAGE 100%
CU-POL

High pressure physical injection foamed polyethylene **TRIPLE LAYER DIELECTRIC**
FPE Ø 7,3 ± 0,05 mm

Inner conductor : 99,99% pure electrolitic annealed bare copper.
(annealed = thermal softening process)
Cu Ø 2,76 mm (0,108 inches)

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	0,65	0,20
3,5 MHz	0,85	0,26
7,0 MHz	1,08	0,33
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10.000 MHz	46,8	14,26
12.000 MHz	52,2	15,19

ELECTRICAL DATA

Impedance @200MHz :	50 Ohm ± 3
Minimum bending radius:	
Multiple bends/single bend	103/65 mm
Temperature: installation	-40° to +60° C
operative	-55° to +85° C
Capacitance:	74 pF/m ± 2
Velocity ratio:	85 %
Screening efficiency:	
100-2000 MHz	>105 dB
Class	A++
Inner conductor resistance:	3 Ohm/Km
Outer conductor resistance:	9,2 Ohm/Km
Tension test (spark test):	8 kV
Weight (100m):	13 Kg
Maximum peak power:	14500 WATT

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>25 dB
1200-2000 MHz	>20 dB

POWER HANDLING (at 40C°/104 F°))

FREQUENCY	MAXP	FREQUENCY	MAXP
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REMEMBER: Make sure to match the line accurately!

M&P-BROAD-PRO 50/C / M&P-BROAD-PRO 50/C Double Jacket

	length --->		16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m
Frequencies / Frequenze	85.71 m	3,5	98.9	98	97	96.1	95.2	93.3	90.6	86.4	82.2	77.6	73	67.6	55.5	Useful signal output (residual power %)
	42.85 m	7	98.7	97.5	96.3	95.1	93.9	91.6	88.3	82.9	77.9	72.4	67.1	60.8	47.4	
	21.42 m	14	98.4	96.8	95.3	93.7	92.4	89.3	85.1	78.6	72.6	65.9	59.9	52.7	38.2	
	10.71 m	28	97.8	95.6	93.5	91.4	89.4	85.5	80	71.7	64	56.2	49.1	41	26.3	
	6 m	50	97.2	94.5	91.8	89.3	86.8	82	75.4	65.4	56.8	48	40.5	32.3	18.4	
	2 m	144	95	90.5	86.2	82	78	70.7	61	47.6	37.2	27.7	20.6	13.8	5.1	
	69 cm	430	91.5	83.8	76.7	70.3	64.4	54	41.5	26.8	17.2	10.1	5.9			
	23.1 cm	1296	84,4	71,6	60,8	51,6	43,8	31,5	19,1	8,1	3,3					
	12.5 cm	2400	78	61.8	48.9	38.6	30.4	18.7	8.6							
	10 cm	3000	75.2	57.4	43.8	33.2	25.2	14.2	5.6							
	7.5 cm	4000	71.2	51.4	37	26.5	18.9	9.23								
	6 cm	5000	67.2	45.9	31.1	20.9	13.8	5.6								
	5 cm	6000	63.4	40.9	26.2	16.4	9.9									
	3.75 cm	8000	57	33	19	10										
	3 cm	10.000	50	26	12											
	2.5 cm	12.000	43	18												

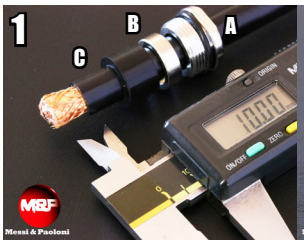
M&P-BROAD-PRO 50/C Double Jacket (Power Handling/Temperature)

			Temperature C° / F°									
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158
Frequencies / Frequenze	166.66 m	1,8	13300	13300	13300	13300	12900	12174	10831	9239	7647	6065
	85.71 m	3,5	13112	12672	12299	11520	10605	9521	8471	7225	5980	4744
	42.85 m	7	10320	9973	9680	9067	8347	7493	6667	5687	4707	3733
	30 m	10	9288	8976	8712	8160	7512	6744	6000	5118	4236	3360
	21.42 m	14	8018	7749	7521	7045	6485	5822	5180	4418	3657	2901
	14.28 m	21	6369	6155	5974	5595	5151	4624	4114	3509	2905	2304
	10.71 m	28	5775	5581	5417	5074	4671	4193	3731	3182	2634	2089
	6 m	50	4287	4143	4021	3766	3467	3113	2769	2362	1955	1551
	3 m	100	3166	3060	2970	2782	2561	2299	2045	1745	1444	1145
	2.08 m	144	2604	2517	2443	2288	2106	1891	1682	1435	1188	942
	1.5 m	200	2185	2112	2050	1920	1768	1587	1412	1204	997	791
	75 cm	400	1527	1476	1432	1341	1235	1109	986	841	696	552
	69 cm	430	1467	1417	1376	1288	1186	1065	947	808	669	531
	37.5 cm	800	1051	1016	986	924	850	763	679	579	480	380
	30 cm	1000	929	898	871	816	751	674	600	512	424	336
	23.1 cm	1296	808	781	758	710	653	586	522	445	368	292
	12.5 cm	2400	563	544	528	495	455	409	364	310	257	204
	10 cm	3000	487	470	457	428	394	353	314	268	222	176
	7.5 cm	4000	404	390	379	355	327	293	261	223	184	146
	6 cm	5000	348	337	327	306	282	253	225	192	159	126
	5 cm	6000	308	298	289	270	249	224	199	170	140	111
	4.2 cm	7000	275	266	258	242	223	200	178	152	126	100
	3.75 cm	8000	249	241	234	219	202	181	161	137	114	90
	3.3 cm	9000	227	220	213	200	184	165	147	125	104	82
	3 cm	10.000	211	204	198	185	171	153	136	116	96	76

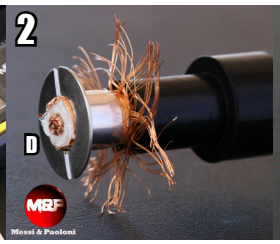
WATT

Connector assembly

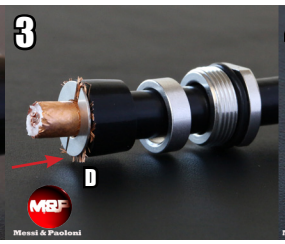
Connector “N” type : C.N.BROAD50-M



Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

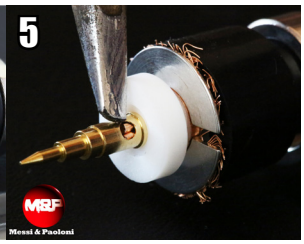


Insert component D after having opened the braid as shown in the pictu-re. Push component D between the foil and the braid until it stops against the black PVC jacket.



Flatten the wires as shown in the picture and cut the excess.

Cut and remove the tape and dieletric for a length as shown in the picture (6mm).

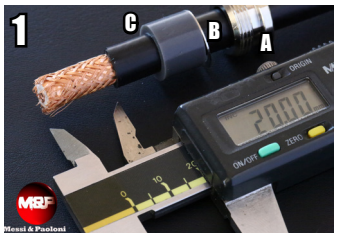


Insert one of the two teflon discs and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to transfer excessive heat to the highly conductive copper underneath. Excessive heat deforms the dielectric which is made of foam PE and not in teflon!.

Insert the second teflon disc as shown in the picture.

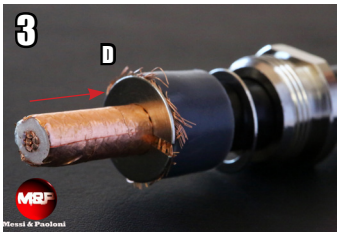
Insert the connector and fasten accurately until the o-ring present in component A, will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

Connector “UHF” type : C.UHF.BROAD50-M

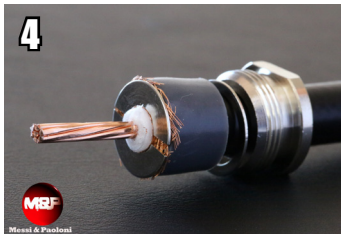


Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

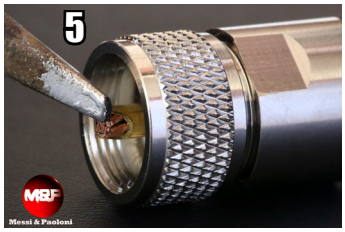
Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the black PVC jacket.



Flatten the wires as shown in the picture and cut the excess.



Cut and remove the tape and dieletric for a lenght as shown in the picture.



Insert the connector and solder it with tin to the inner conductor (see picture above). Avoid heating the pin for a too long time in order not to transfer excessive heat to the highly conductive copper underneath. Excessive heat deforms the dielectric which is made of foam PE and not in teflon!.

6

Fasten together the connector and component A, until it will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

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Ham Radio Pro Cables

M&P

UltraFlex 7

(HIGHFLEXX 7)

MESSI & PAOLONI

ULTRAFLEXIBLE
UV resistant PVC jacket.
PVC Ø 7,3 ± 0,15 mm
(0,287 inches)

CE

Pb

RoHS COMPLIANT 2002/95/EG

High resistance copper screen **(Cu)** made by means of **24 spools** braiding machines. (50% more crossovers if compared to traditional 16 spools machines.)This braid is **HIGHLY EFFECTIVE AGAINST IMPULSIVE NOISES.**
SCREENING PERCENTAGE: 83% 144 wires

High pressure physical injection foamed polyethylene.
TRIPLE LAYER DIELECTRIC
FPE Ø 5 ± 0,05 mm

The copper foil has an applied PE-coating, placed in order to prevent foil cracking due to short radius bends.
SCREENING PERCENTAGE 100%
CU-POL

Inner conductor made of 19X0,38 stranded geometric and concentric copper wires.
Purity 99,99% annealed.
(annealed = thermal softening process)
Cu 19x0,38 mm - Ø 1,9 mm
(19x0,015 inches) (0,075 inches)

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	0,95	0,29
3,5 MHz	1,28	0,39
7,0 MHz	1,6	0,49
10 MHz	1,9	0,58
14 MHz	2,2	0,67
21 MHz	2,6	0,79
28 MHz	3,0	0,91
50 MHz	4,0	1,22
100 MHz	5,8	1,77
144 MHz	6,9	2,10
200 MHz	8,2	2,50
400 MHz	11,8	3,60
430 MHz	12,3	3,75
800 MHz	17,1	5,21
1000 MHz	19,3	5,88
1296 MHz	22,33	6,81
2400 MHz	32,3	9,85
3000 MHz	36,2	11,03
4000 MHz	42,6	12,98
5000 MHz	49,3	15,03
6000 MHz	55,3	16,86
7000 MHz	61,6	18,78
8000 MHz	68,4	20,85

SRL

0,3-600 MHz	>28 dB
600-1200 MHz	>22 dB
1200-2000 MHz	>18 dB

ELECTRICAL DATA

Impedance @200MHz :		50 Ohm ± 3
Minimum bending radius:		
Multiple bends(15)/single bend		68/34 mm
Temperature:	installation	-40° to + 60° C
	operative	-55° to + 85° C
Capacitance:		75 pF/m ± 2
Velocity ratio:		83 %
Screening efficiency:		
100-2000 MHz		>105 dB
Inner conductor resistance:		7,3 Ohm/Km
Outer conductor resistance:		9,8 Ohm/Km
Tension test (spark test):		4 kV
Weight (100m):		6,9 Kg
Maximum peak power:		8000 WATT

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP	FREQUENCY	MAXP
1,8 MHz	4572 W	430 MHz	353 W
3,5 MHz	3393 W	800 MHz	254 W
7,0 MHz	2714 W	1000 MHz	225 W
10 MHz	2286 W	1296 MHz	195 W
14 MHz	1974 W	2400 MHz	134 W
21 MHz	1670 W	3000 MHz	120 W
28 MHz	1448 W	4000 MHz	102 W
50 MHz	1086 W	5000 MHz	88 W
100 MHz	749 W	6000 MHz	79 W
144 MHz	629 W	7000 MHz	71 W
200 MHz	530 W	8000 MHz	63 W
400 MHz	368 W		

For step by step assembly instructions of connectors, please visit our website www.messi.it

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

Messi & Paoloni coaxial cables
www.messi.it

Given a power fed to the X value (any value expressed in Watts), the actual power output of the cable is shown in the table in the form of remaining percentage. (for example, if we use a cable such as M&P-ULTRAFLEX 7, entering 1000 Watts over a length of 35m, at a frequency of 144 MHz, there remains 57,3% of 1000). **For maximum applicable power, see the Power Handling of the cable concerned.** From these values, have already been deducted the SRL values, typical of each one of our models, for the respective frequencies.

REMEMBER: Make sure to match the line accurately!

M&P-ULTRAFLEX 7 (HIGHFLEXX 7)

	length --->		16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m
Frequencies / Frequenze	85.71 m	3,5	98.8	97.9	96.9	95.9	94.9	93	90.1	85.6	81.3	76.4	71.7	66	53.7	Useful signal output (residual power %)
	42.85 m	7	98.5	97.2	95.9	94.6	93.3	90.8	87.1	81.5	75.8	69.8	64.2	57.5	43.6	
	21.42 m	14	97.6	95.2	93	90.8	86.6	84.4	78.5	69.6	61.6	53.3	46.1	38	23.4	
	10.71 m	28	96.5	93.3	90.1	87.1	84.1	78.5	70.7	59.5	50	40.6	33	25	12.5	
	6 m	50	95.4	91.1	87.1	83.1	79.3	72.9	63	50	39.7	30.1	22.8	15.7	6.2	
	2.08 m	144	92.3	85.2	78.7	72.7	67.2	57.3	45.1	30.8	20.3	12.6	7.8	4.1		
	69 cm	430	86.6	75	65.2	56.6	49	37	24.1	11.7	5.7					
	23.1 cm	1296	76,7	59,2	45,6	35,1	27	15,9	7							
	12.5 cm	2400	67.4	45.9	31.2	21	14	5.8								
	10 cm	3000	63.4	40.9	26.1	16.4	9.9									
	7.5 cm	4000	58.1	34.3	19.8	10.9	5.4									
	6 cm	5000	52.7	28.2	14.2	6.3										
	5 cm	6000	48.9	24	10.8	3.9										

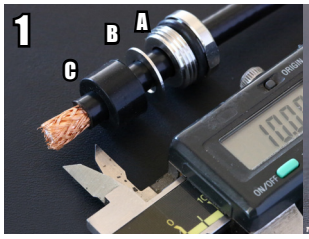
M&P-ULTRAFLEX 7 (Power Handling/Temperature)

			Temperature C° / F°									
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158
Frequencies / Frequenze	166.66 m	1,8	6838	6838	6638	6217	5724	5138	4572	3900	3228	2560
	85.71 m	3,5	5252	5076	4927	4614	4248	3814	3393	2894	2395	1900
	42.85 m	7	4202	4061	3941	3692	3398	3051	2714	2315	1916	1520
	30 m	10	3538	3420	3319	3109	2862	2569	2286	1950	1614	1280
	21.42 m	14	3056	2953	2866	2685	2472	2219	1974	1684	1394	1105
	14.28 m	21	2586	2499	2425	2272	2091	1878	1670	1425	1179	935
	10.71 m	28	2241	2166	2102	1969	1812	1627	1448	1235	1022	811
	6 m	50	1681	1624	1577	1477	1359	1220	1086	926	767	608
	3 m	100	1159	1120	1087	1018	937	842	749	639	529	419
	2.08 m	144	974	942	914	856	788	707	629	537	444	352
	1.5 m	200	820	792	769	720	663	595	530	452	374	297
	75 cm	400	570	551	534	501	461	414	368	314	260	206
	69 cm	430	547	528	513	480	442	397	353	301	249	198
	37.5 cm	800	393	380	369	345	318	285	254	217	179	142
	30 cm	1000	348	337	327	306	282	253	225	192	159	126
	23.1 cm	1296	301	291	283	265	244	219	195	166	137	109
	12.5 cm	2400	208	201	195	183	168	151	134	115	95	75
	10 cm	3000	186	179	174	163	150	135	120	102	85	67
	7.5 cm	4000	158	153	148	139	128	115	102	87	72	57
	6 cm	5000	136	132	128	120	110	99	88	75	62	49
	5 cm	6000	122	117	114	107	98	88	79	67	55	44
	4.2 cm	7000	109	105	102	96	88	79	71	60	50	39
	3.75 cm	8000	98	95	92	86	79	71	63	54	45	36

WATT

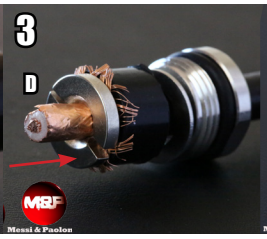
Connector assembly

Connector “N” type : C.N.AC7.M-S

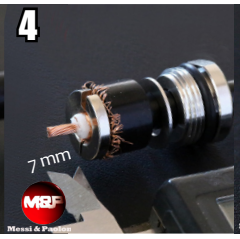


Insert in the cable components A, B, C and immediately after, make a circular cut on the jacket at the indicated length shown in the caliber. (in mm) Subsequently remove it.

Insert component D after having opened the braid as shown in the picture.



Push component D between the foil and the braid until it stops against the jacket. Flatten the wires as shown in the picture and cut the excess.



Cut and remove the tape and dieletric for a lenght as illustrated in the caliber (mm).

Insert one of the two teflon discs and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to damage with excessive heat the cable dielectric (which is not made in teflon!)

Insert the second teflon disc as shown in the picture.

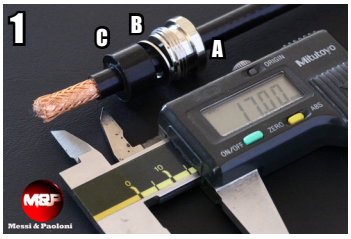
Insert the connector and fasten accurately until the o-ring present in component A, will be pressed against the connector body. Inside, the rubbercomponent C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

Cut made with special M&P scissors.

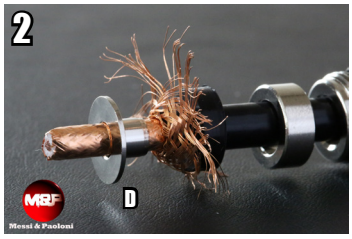
Common scissors: remember to use a file in order to remove the c opper in excess. Make sure to follow the stranding direction.

In order to get rid of any burrs or ridges, scratch off in the inner conductor.

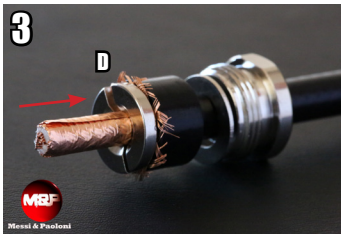
Connector “UHF” type : C.UHF.AC7.M-S



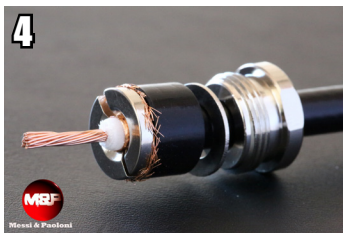
Insert in the cable components A, B, C and immediately after, make a circular cut on the jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.



Insert component D after having opened the braid as shown in the picture.



Push component D between the foil and the braid until it stops against the jacket. Flatten the wires as shown in the picture and cut the excess.



Cut and remove the tape and dieletric for a lenght as shown in the picture.

Insert the connector and solder it with tin to the inner conductor (see picture above). Avoid heating for a too long time in order not to damage with excessive heat the cable dielectric (which is not made in teflon!)

6

Fasten together the connector and component A, until it will be pressed against the connector body. Inside, the rubber component C (pic 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

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Ham Radio Pro Cables

MESSI & PAOLONI

M&P UltraFlex 10

(H2010, NEOFLEX 10)

EXTRAFLEXIBLE

UV resistant PVC jacket.

PVC Ø 10,3 ± 0,15 mm

(0,405 inches)

RoHS COMPLIANT 2002/95/EG

High resistance copper screen **(Cu)** made by means of **24 spools** braiding machines.(50% more crossovers if compared to traditional 16 spools machines.) This braid is **HIGHLY EFFECTIVE AGAINST LOW FREQUENCY IMPULSIVE NOISES.**

SCREENING PERCENTAGE: 71%

144 wires

Screening foil, highly effective against high frequency interferences. The copper foil has an applied PE-coating, placed in order to prevent foil cracking due to short radius bends. SCREENING PERCENTAGE 100%

CU-POL

Inner conductor made of 7X1,0 stranded, geometric and concentric annealed copper wires. Purity 99,99%. (annealed = thermal softening process) **(7x0,039 inches)**

Cu 7x1,0 mm - Ø 3 mm

(0,118 inches)

High pressure physical injection foamed polyethylene, **TRIPLE LAYER DIELECTRIC.**

FPE Ø 7,3 ± 0,05 mm

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	0,70	0,21
3,5 MHz	0,90	0,27
7,0 MHz	1,14	0,35
10 MHz	1,30	0,40
14 MHz	1,59	0,48
21 MHz	1,90	0,58
28 MHz	2,14	0,65
50 MHz	2,76	0,84
100 MHz	3,93	1,20
144 MHz	4,74	1,44
200 MHz	5,72	1,74
400 MHz	8,31	2,53
430 MHz	8,65	2,64
800 MHz	12,17	3,71
1000 MHz	13,81	4,21
1296 MHz	16,4	5,0
2400 MHz	23,75	7,24
3000 MHz	27,3	8,32
4000 MHz	32,9	10,03
5000 MHz	38,9	11,86
6000 MHz	44,5	13,56
7000 MHz	50,2	15,30
8000 MHz	55,8	17,01

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>25 dB
1200-2000 MHz	>20 dB

ELECTRICAL DATA

Impedance @200MHz:	50 Ohm ± 3
Minimum bending radius:	
Multiple bends(15)/single bend	80/40 mm
Temperature range:	
installation	-40° to +60° C
operative	-55° to +85° C
Capacitance:	78 pF/m ± 2
Velocity ratio:	83 %
Screening efficiency:	
100-2000 MHz	>105 dB
Class	A++
Inner conductor resistance:	3,2 Ohm/Km
Outer conductor resistance:	9,2 Ohm/Km
Tension test (spark test):	8 kV
Weight (100m):	13 Kg
Maximum peak power:	13000 WATT

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP	FREQUENCY	MAXP
1,8 MHz	9927 W	430 MHz	803 W
3,5 MHz	7721 W	800 MHz	571 W
7,0 MHz	7164 W	1000 MHz	503 W
10 MHz	5345 W	1296 MHz	445 W
14 MHz	4370 W	2400 MHz	293 W
21 MHz	3657 W	3000 MHz	255 W
28 MHz	3247 W	4000 MHz	211 W
50 MHz	2518 W	5000 MHz	182 W
100 MHz	1768 W	6000 MHz	162 W
144 MHz	1466 W	7000 MHz	138 W
200 MHz	1215 W	8000 MHz	125 W
400 MHz	836 W		

For step by step assembly instructions of connectors, please visit our website www.messi.it

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

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Given a power fed to the X value (any value expressed in Watts), the actual power output of the cable is shown in the table in the form of remaining percentage. (for example, if we use a cable such as M&P-ULTRAFLEX 10, entering 1000 Watts over a length of 35m, at a frequency of 144 MHz, there remains 68.2 % of 1000). **For maximum applicable power, see the Power Handling of the cable concerned.** From these values, have already been deducted the SRL values, typical of each one of our models, for the respective frequencies.
REMEMBER: Make sure to match the line accurately!

M&P-ULTRAFLEX 10 (H 2010 - NEOFLEX 10)

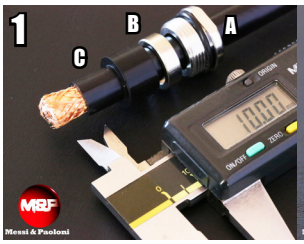
Frequencies / Frequenze	length --->		16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet	Useful signal output (residual power %)
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m	
	85.71 m	3,5	99.2	98.5	97.7	97	96.2	94.8	92.7	89.2	85.9	82	78.4	73.8	63.4		
	42.85 m	7	98.9	97.8	96.7	95.6	94.5	92.4	89.4	84.5	80	74.8	69.9	63.9	51.1		
	21.42 m	14	98.1	96.4	94.6	92.9	91.2	87.9	83.2	75.9	69.3	62.1	55.6	48.1	33.3		
	10.71 m	28	97.5	95.2	92.8	90.6	88.4	84.1	78.1	69.1	61.1	52.7	45.4	37.3	22.8		
	6 m	50	96.8	93.8	90.9	88	85.3	80	72.7	62.1	52.9	43.7	36.1	28	14.8		
	2.08 m	144	94.6	89.6	84.8	80.3	76.1	68.2	57.9	44	33.5	24.1	17.4	11.2	3.7		
	69 cm	430	90.4	81.8	74.1	67	60.7	49.7	36.8	22.3	13.5	7.4	4				
	23.1 cm	1296	82,2	67,9	56,1	46,4	38,3	26	14,5	5,3							
	12.5 cm	2400	74.5	56.3	42.9	31.9	23.9	13.2	4.9								
	10 cm	3000	71.4	51.7	37.4	26.9	19.2	9.5									
	7.5 cm	4000	66.5	44.9	30.1	20	13.1	5.1									
	6 cm	5000	61.9	39	24.2	14.7	8.6										
	5 cm	6000	57.9	34.2	19.6	10.8											
	3.75 cm	8000	51	26.2	12.6	5.1											
	3 cm	10.000	43.2	18.2	5.9												
	2.5 cm	12.000	38.4	13.6													

M&P-ULTRAFLEX 10 (Power Handling/Temperature)

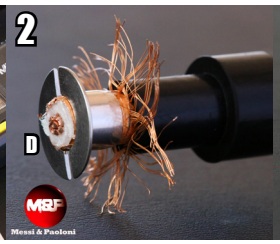
Frequencies / Frequenze			Temperature C° / F°										
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158	WATT
	166.66 m	1,8	12000	12000	12000	11980	11178	10710	9927	8468	7008	5559	
	85.71 m	3,5	11700	11450	11211	10500	9667	8678	7721	6586	5451	4324	
	42.85 m	7	11089	10717	10402	9743	8969	8052	7164	6111	5058	4012	
	30 m	10	8274	7996	7761	7270	6692	6008	5345	4559	3774	2993	
	21.42 m	14	6765	6538	6346	5944	5472	4912	4370	3728	3085	2447	
	14.28 m	21	5661	5471	5310	4974	4579	4111	3657	3120	2582	2048	
	10.71 m	28	5027	4858	4715	4416	4065	3650	3247	2770	2292	1818	
	6 m	50	3897	3766	3656	3424	3152	2830	2518	2148	1777	1410	
	3 m	100	2737	2645	2567	2405	2214	1987	1768	1508	1248	990	
	2.08 m	144	2269	2193	2129	1994	1835	1648	1466	1250	1035	821	
	1.5 m	200	1881	1817	1764	1652	1521	1365	1215	1036	858	680	
	75 cm	400	1294	1251	1214	1137	1047	940	836	713	590	468	
	69 cm	430	1244	1202	1166	1093	1006	903	803	685	567	450	
	37.5 cm	800	884	854	829	777	715	642	571	487	403	320	
	30 cm	1000	779	753	731	684	630	566	503	429	355	282	
	23.1 cm	1296	690	666	647	606	558	501	445	380	314	249	
	12.5 cm	2400	453	438	425	398	366	329	293	250	207	164	
	10 cm	3000	394	381	370	346	319	286	255	217	180	143	
	7.5 cm	4000	327	316	307	287	264	237	211	180	149	118	
	6 cm	5000	282	272	264	248	228	205	182	155	128	102	
	5 cm	6000	251	243	236	221	203	182	162	138	115	91	
	4.2 cm	7000	214	207	201	188	173	156	138	118	98	78	
	3.75 cm	8000	193	186	181	169	156	140	125	106	88	70	

Connector assembly

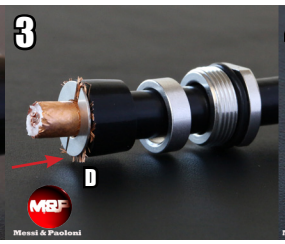
Connector “N” type : C.N.BROAD50-M



Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

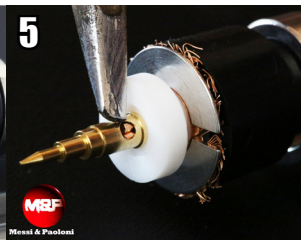


Insert component D after having opened the braid as shown in the pictu-re. Push component D between the foil and the braid until it stops against the black PVC jacket.



Flatten the wires as shown in the picture and cut the excess.

Cut and remove the tape and dieletric for a length as shown in the picture (6mm).

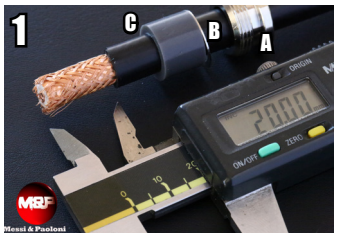


Insert one of the two teflon discs and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to transfer excessive heat to the highly conductive copper underneath. Excessive heat deforms the dielectric which is made of foam PE and not in teflon!.

Insert the second teflon disc as shown in the picture.

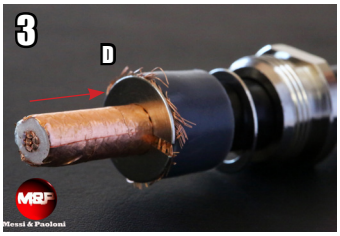
Insert the connector and fasten accurately until the o-ring present in component A, will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

Connector “UHF” type : C.UHF.BROAD50-M

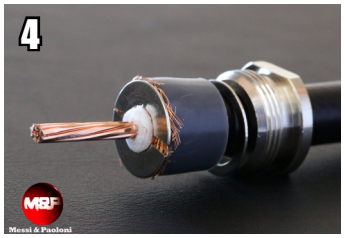


Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

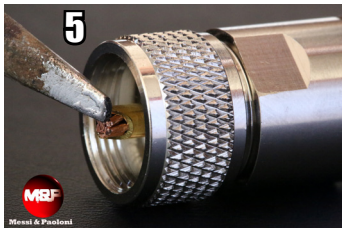
Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the black PVC jacket.



Flatten the wires as shown in the picture and cut the excess.



Cut and remove the tape and dieletric for a lenght as shown in the picture.



Insert the connector and solder it with tin to the inner conductor (see picture above). Avoid heating the pin for a too long time in order not to transfer excessive heat to the highly conductive copper underneath. Excessive heat deforms the dielectric which is made of foam PE and not in teflon!.

6

Fasten together the connector and component A, until it will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

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Ham Radio Pro Cables

MESSI & PAOLONI

1,4 Kg/100m lighter than RG58

3,6 dB/100m better @50 MHz than RG58

M&P AIRBORNE 5

High resistance screen made of a sturdy Aluminium-Magnesium alloy **BRAID (ALMg)**. The braiding process is operated by means of **24 spools** braiding machines. (50% more intersections if compared to traditional 16 spools machines.) This braid is **HIGHLY EFFECTIVE AGAINST LOW FREQUENCY IMPULSIVE NOISES.**

SCREENING PERCENTAGE: 82% 96 wires

Trampling-resistant, UV shielded PE jacket to be used in particular for underground and outdoor installations.

PE Ø 5 ± 0,15 mm (0,197 inches)

Triple layer screening tape, (foil), highly effective against high frequency interferences.
SCREENING PERCENTAGE 100%
AL-POL-AL

High pressure physical injection foamed polyethylene **TRIPLE LAYER DIELECTRIC**

FPE Ø 3 ± 0,05 mm

Inner conductor : 99,99% pure electrolitic annealed bare copper. (annealed = thermal softening process)

Cu Ø 1,13 mm (0,044 inches)

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	1,6	0,49
3,5 MHz	2,24	0,68
7,0 MHz	3,0	0,91
10 MHz	3,45	1,05
14 MHz	3,98	1,21
21 MHz	4,76	1,45
28 MHz	5,42	1,65
50 MHz	7,0	2,13
100 MHz	9,45	2,88
144 MHz	11,0	3,35
200 MHz	12,85	3,92
400 MHz	18,38	5,60
430 MHz	19,0	5,79
800 MHz	26,57	8,10
1000 MHz	29,88	9,11
1296 MHz	34,2	10,42
2400 MHz	47,58	14,50
3000 MHz	53,5	16,31
4000 MHz	61,0	18,59
5000 MHz	68,6	20,91
6000 MHz	75,6	23,04

ELECTRICAL DATA

Impedance @200MHz :	50 Ohm ± 3
Minimum bending radius:	
Multiple bends/single bend	50/25 mm
Temperature:	-45° to + 70° C
Capacitance:	76 pF/m ± 2
Velocity ratio:	85 %
Screening efficiency:	
100-2000 MHz	>105 dB
Class	A++
Inner conductor resistance:	17 Ohm/Km
Outer conductor resistance:	34 Ohm/Km
Tension test (spark test):	8 kV
Weight (100m):	2,35 Kg
Maximum peak power:	2000 WATT

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>28 dB
1200-2000 MHz	>25 dB

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP	FREQUENCY	MAXP
1,8 MHz	1172 W	430 MHz	99 W
3,5 MHz	837 W	800 MHz	71 W
7,0 MHz	625 W	1000 MHz	63 W
10 MHz	543 W	1296 MHz	55 W
14 MHz	471 W	2400 MHz	39 W
21 MHz	394 W	3000 MHz	35 W
28 MHz	346 W	4000 MHz	31 W
50 MHz	268 W	5000 MHz	27 W
100 MHz	198 W	6000 MHz	25 W
144 MHz	170 W		
200 MHz	146 W		
400 MHz	102 W		

For step by step assembly instructions of connectors, please visit our website www.messi.it

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

Messi & Paoloni coaxial cables
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Given a power fed to the X value (any value expressed in Watts), the actual power output of the cable is shown in the table in the form of remaining percentage. (for example, if we use a cable such as M&P-AIRBORNE 5, entering 1000 Watts over a length of 35m, at a frequency of 144 MHz, there remains 41.1 % of 1000). **For maximum applicable power, see the Power Handling of the cable concerned.** From these values, have already been deducted the SRL values, typical of each one of our models, for the respective frequencies.

REMEMBER: Make sure to match the line accurately!

M&P-AIRBORNE 5

	length --->		16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m
Frequencies / Frequenze	85.71 m	3,5	98.2	96.6	95	93.4	91.8	88.8	84.4	77.6	71.3	64.5	58.3	51	36.4	Useful signal output (residual power %)
	42.85 m	7	97.3	94.9	92.4	90.1	87.8	83.3	77.1	67.7	59.5	50.9	43.6	35.4	21	
	21.42 m	14	95.6	91.5	87.5	83.7	80.1	73.3	64.2	51.5	41.3	31.7	24.3	17	7	
	10.71 m	28	93.9	88.3	83	78	73.4	64.8	53.9	39.5	28.9	19.9	13.7	8.3		
	6 m	50	92.2	85.1	78.5	72.4	66.8	56.9	44.6	30.1	19.9	12.3	7.7	3.9		
	2.08 m	144	88	77.5	68.3	60.2	53	41.1	28.1	14.9	7.8	3.6				
	69 cm	430	80.2	64.4	51.7	41.5	33.2	21.5	11.1	3.6						
	23.1 cm	1296	66,8	44,9	30,1	20,1	13,3	5,7								
	12.5 cm	2400	56.2	31.9	17.7	9.6	5									
	10 cm	3000	52	27.2	13.8	6.5										
	7.5 cm	4000	46.4	21.4	9											
	6 cm	5000	39.1	14.3	3											
	5 cm	6000	26													

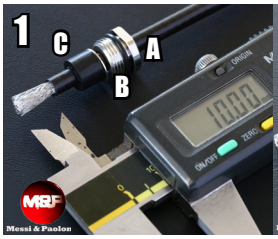
M&P-AIRBORNE 5 (Power Handling/Temperature)

			Temperature C° / F°									
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158
Frequencies / Frequenze	166.66 m	1,8	1600	1600	1600	1594	1467	1317	1172	1000	827	656
	85.71 m	3,5	1296	1252	1215	1138	1048	941	837	714	591	469
	42.85 m	7	968	935	908	850	783	703	625	533	441	350
	30 m	10	841	813	789	739	680	611	543	464	384	304
	21.42 m	14	729	705	684	641	590	530	471	402	333	264
	14.28 m	21	610	589	572	536	493	443	394	336	278	221
	10.71 m	28	536	518	502	470	433	389	346	295	244	194
	6 m	50	415	401	389	364	335	301	268	228	189	150
	3 m	100	307	297	288	270	248	223	198	169	140	111
	2.08 m	144	264	255	248	232	213	192	170	145	120	95
	1.5 m	200	226	218	212	198	183	164	146	124	103	82
	75 cm	400	158	153	148	139	128	115	102	87	72	57
	69 cm	430	153	148	143	134	123	111	99	84	70	55
	37.5 cm	800	109	106	102	96	88	79	71	60	50	40
	30 cm	1000	97	94	91	85	79	71	63	54	44	35
	23.1 cm	1296	85	82	80	75	69	62	55	47	39	31
	12.5 cm	2400	61	59	57	54	49	44	39	34	28	22
	10 cm	3000	54	52	51	48	44	39	35	30	25	20
	7.5 cm	4000	48	46	45	42	38	35	31	26	22	17
	6 cm	5000	42	41	40	37	34	31	27	23	19	15
	5 cm	6000	38	37	36	34	31	28	25	21	18	14

WATT

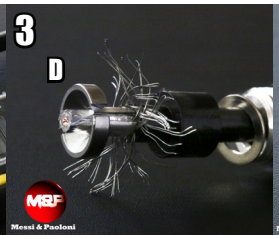
Connector assembly

Connector “N” type : C.N.AC5M-S

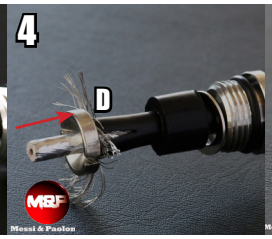


Make a circular cut on the black PVC outer jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

Insert in the cable components A, B, C and immediately after, make a circular cut on the red PE jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

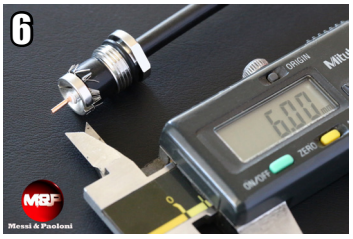


After having made the first cut, as shown in picture 2, rotate the cable 180 degrees and make a second cut in the same way, in order to facilitate the introduction of component D



Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the red PE jacket.

Flatten the wires as shown in the picture and cut the excess.



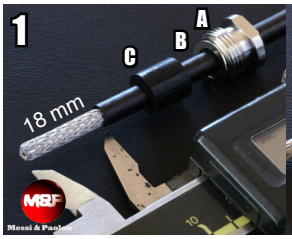
Cut and remove the tape and dieletric for a lenght as shown in the picture (in mm).

Insert one of the two teflon discs and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to damage with excessive heat the cable dielectric.
(which is not made in teflon!)

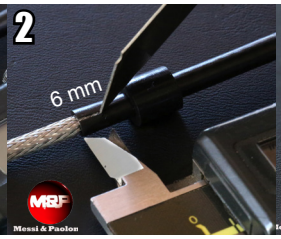
Insert the second teflon disc as shown in the picture.

Insert the connector and fasten accurately until the o-ring present in component A, will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

Connector “UHF” type : C.UHF.AC5M-S

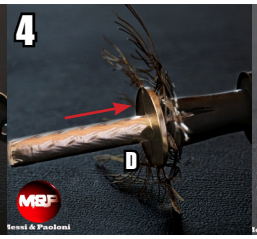


Insert in the cable components A, B, C and immediately after, make a circular cut on the jacket at the indicated length shown in the caliber. (in mm). Subsequently remove it.



After having made the first cut, as shown in picture 2, rotate the cable 180 degrees and make a second cut in the same way, in order to facilitate the introduction of component D (pic.3 and 4)

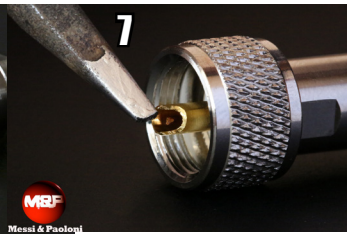
Insert component D after having opened the braid as shown in the picture.



Push component D between the foil and the braid until it stops against the jacket.

Flatten the wires as shown in the picture and cut the excess.

Cut and remove the tape and dieletric for a lenght as shown in the picture.



Insert the connector and solder it with tin to the inner conductor (see picture above). Avoid heating for a too long time in order not to damage with excessive heat the cable dielectric (which is not made in teflon!)

8

Fasten together the connector and component A, until it will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

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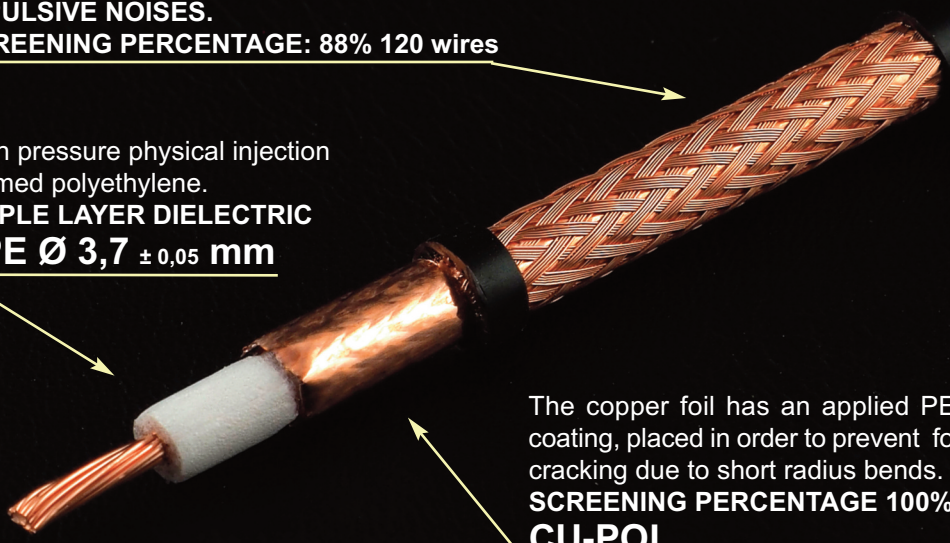
M&P HyperFlex 5

UV resistant black PVC jacket.
PVC Ø 5,4 ± 0,15 mm (0,212 inches)

High resistance copper screen **(Cu)** made by means of **24 spools** braiding machines. (50% more crossovers if compared to traditional 16 spools machines.) This braid is **HIGHLY EFFECTIVE AGAINST IMPULSIVE NOISES.**
SCREENING PERCENTAGE: 88% 120 wires



High pressure physical injection foamed polyethylene.
TRIPLE LAYER DIELECTRIC
FPE Ø 3,7 ± 0,05 mm

The copper foil has an applied PE-coating, placed in order to prevent foil cracking due to short radius bends.
SCREENING PERCENTAGE 100%
CU-POL

Inner conductor made of 19X0,29 stranded geometric and concentric copper wires. Purity 99,99% annealed.
(annealed = thermal softening process)
Cu 19x0,29 mm - Ø 1,4 mm
(19x0,011 inches) (0,055 inches)

SRL

0,3-600 MHz	>28 dB
600-1200 MHz	>25 dB
1200-2000 MHz	>22 dB

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	1,48	0,45
3,5 MHz	1,91	0,58
7,0 MHz	2,33	0,71
10 MHz	2,63	0,80
14 MHz	3,04	0,93
21 MHz	3,64	1,11
28 MHz	4,16	1,27
50 MHz	5,58	1,70
100 MHz	8,02	2,44
144 MHz	9,66	2,94
200 MHz	11,44	3,49
400 MHz	16,37	4,99
430 MHz	17,0	5,18
800 MHz	23,48	7,16
1000 MHz	26,46	8,07
1296 MHz	30,5	9,30
2400 MHz	42,58	12,98
3000 MHz	48,1	14,66
4000 MHz	56,95	17,36
5000 MHz	65,29	19,90
6000 MHz	72,92	22,23

ELECTRICAL DATA

Impedance @200MHz :	50 Ohm ± 3
Minimum bending radius:	
Multiple bends/single bend	50/25 mm
Temperature:	-45° to + 70° C
Capacitance:	74 pF/m ± 2
Velocity ratio:	87 %
Screening efficiency:	
100-2000 MHz	>105 dB
Class	A++
Inner conductor resistance:	14 Ohm/Km
Outer conductor resistance:	11 Ohm/Km
Tension test (spark test):	4 kV
Weight (100m):	4,2 Kg
Maximum peak power:	2900 WATT

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP	FREQUENCY	MAXP
1,8 MHz	1274 W	400 MHz	115 W
3,5 MHz	987 W	430 MHz	111 W
7,0 MHz	809 W	800 MHz	80 W
10 MHz	717 W	1000 MHz	71 W
14 MHz	620 W	1296 MHz	62 W
21 MHz	518 W	2400 MHz	44 W
28 MHz	453 W	3000 MHz	39 W
50 MHz	338 W	4000 MHz	33 W
100 MHz	235 W	5000 MHz	29 W
144 MHz	195 W	6000 MHz	26 W
200 MHz	165 W		

For step by step assembly instructions of connectors, please visit our website www.messi.it

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

Messi & Paoloni coaxial cables
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Given a power fed to the X value (any value expressed in Watts), the actual power output of the cable is shown in the table in the form of remaining percentage. (for example, if we use a cable such as M&P-HYPERFLEX 5, entering 1000 Watts over a length of 35m, at a frequency of 144 MHz, there remains 45,8 % of 1000). **For maximum applicable power, see the Power Handling of the cable concerned.** From these values, have already been deducted the SRL values, typical of each one of our models, for the respective frequencies.

REMEMBER: Make sure to match the line accurately!

M&P-HYPERFLEX 5

	length --->		16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m
Frequencies / Frequenze	85.71 m	3,5	97,7	95,6	93,5	91,5	89,5	85,6	80,2	71,8	64,3	56,4	49,4	41,4	26,6	Useful signal output (residual power %)
	42.85 m	7	97,3	94,7	92,2	89,7	87,3	82,8	76,4	66,8	58,4	49,7	42,3	34,1	19,9	
	21.42 m	14	96,5	93,1	89,9	86,8	83,8	78,2	70,4	59,1	49,6	40,2	32,5	24,6	12,1	
	10.71 m	28	95,2	90,8	86,5	82,5	78,6	71,4	61,8	48,7	38,3	28,7	21,5	14,6	5,5	
	6 m	50	93,7	87,8	82,4	77,2	72,4	63,7	52,5	38,1	27,6	18,7	12,7	7,6		
	2.08 m	144	89,4	80,0	71,5	64,0	57,2	45,8	32,8	18,8	10,7	5,4				
	69 cm	430	82,1	67,4	55,4	45,6	37,4	25,3	14,0	5,2						
	23.1 cm	1296	69,8	48,9	34,2	23,9	16,6	7,9								
	12.5 cm	2400	59,7	35,9	21,4	12,5	7,0									
	10 cm	3000	55,9	31,5	17,4	9,3	4,7									
	7.5 cm	4000	48,7	23,8	10,8	4,1										
	6 cm	5000	40,8	15,9	4,2											
	5 cm	6000	33,2	8,7												

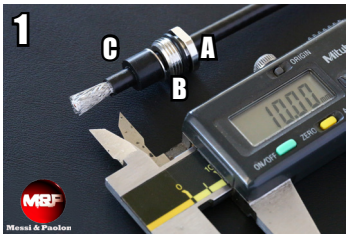
M&P-HYPERFLEX 5 (Power Handling/Temperature)

			Temperature C° / F°									
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158
Frequencies / Frequenze	166.66 m	1,8	1850	1850	1850	1732	1595	1432	1274	1086	899	713
	85.71 m	3,5	1528	1476	1433	1342	1236	1109	987	842	697	553
	42.85 m	7	1252	1210	1175	1100	1013	909	809	690	571	453
	30 m	10	1109	1072	1041	975	897	806	717	611	506	401
	21.42 m	14	960	928	900	843	776	697	620	529	438	347
	14.28 m	21	802	775	752	704	648	582	518	442	366	290
	10.71 m	28	701	678	658	616	567	509	453	387	320	254
	6 m	50	523	505	491	459	423	380	338	288	238	189
	3 m	100	364	352	341	320	294	264	235	200	166	132
	2.08 m	144	302	292	283	265	244	219	195	166	138	109
	1.5 m	200	255	247	239	224	206	185	165	141	116	92
	75 cm	400	178	172	167	157	144	129	115	98	81	64
	69 cm	430	172	166	161	151	139	125	111	95	78	62
	37.5 cm	800	124	120	117	109	101	90	80	68	57	45
	30 cm	1000	110	107	103	97	89	80	71	61	50	40
	23.1 cm	1296	96	92	90	84	77	69	62	53	44	35
	12.5 cm	2400	69	66	64	60	55	50	44	38	31	25
	10 cm	3000	61	59	57	53	49	44	39	33	28	22
	7.5 cm	4000	51	50	48	45	41	37	33	28	23	19
	6 cm	5000	45	43	42	39	36	32	29	25	20	16
	5 cm	6000	40	39	38	35	32	29	26	22	18	14

WATT

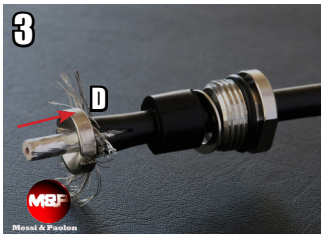
Connector assembly

Connector “N” type : C.N.HYF5M-S



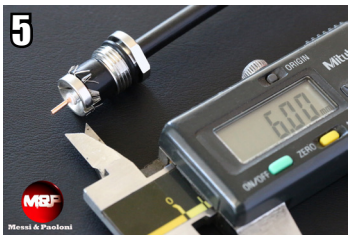
Make a circular cut on the black PVC outer jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

After having made the first cut, as shown in picture 2, rotate the cable 180 degrees and make a second cut in the same way, in order to facilitate the introduction of component D (pic.4 and 5)

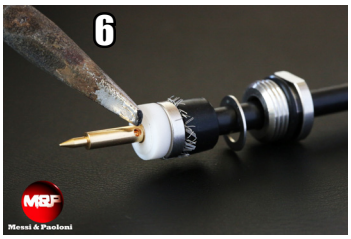


Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the red PE jacket.

Flatten the wires as shown in the picture and cut the excess.



Cut and remove the tape and dielectric for a lenght as shown in the picture (in mm).

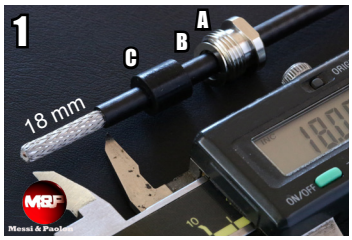


Insert one of the two teflon discs and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to damage with excessive heat the cable dielectric.
(which is not made in teflon!)

Insert the second teflon disc as shown in the picture.

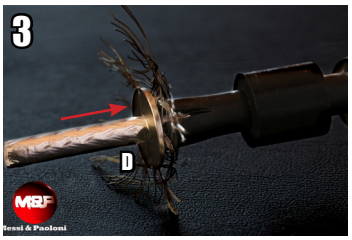
Insert the connector and fasten accurately until the o-ring present in component A, will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

Connector “UHF” type : C.UHF.AC5M-S



Insert in the cable components A, B, C and immediately after, make a circular cut on the jacket at the indicated length shown in the caliber. (in mm). Subsequently remove it.

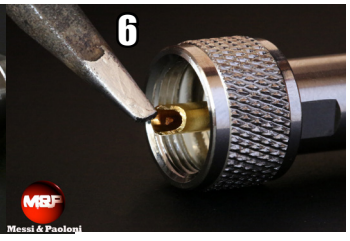
Insert component D after having opened the braid as shown in the picture.



Push component D between the foil and the braid until it stops against the jacket.

Flatten the wires as shown in the picture and cut the excess.

Cut and remove the tape and dieletric for a lenght as shown in the picture.



Insert the connector and solder it with tin to the inner conductor (see picture above). Avoid heating for a too long time in order not to damage with excessive heat the cable dielectric (which is not made in teflon!)

7

Fasten together the connector and component A, until it will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

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Ham Radio Pro Cables

M&P AIRBORNE

MESSI & PAOLONI

45,3% lighter than average 10,3 mm full copper cables

19dB @ 2400 Mhz by far the most performant of its class (10,3 mm cables)

M&P AIRBORNE 10

"Shack Master"

High resistance copper clad aluminium screen (**CCA**) made by means of **24 spools** braiding machines.(50% more crossovers if compared to traditional 16 spools machines.) This braid is **HIGHLY EFFECTIVE AGAINST LOW FREQUENCY IMPULSIVE NOISES.**
SCREENING PERCENTAGE: 78% 168 wires

Trampling-resistant, UV shielded PE jacket to be used in particular for underground and harsh environments outdoor installations.
PE Ø 10,3 ± 0,15 mm
(0,405 inches)

High pressure physical injection foamed polyethylene
TRIPLE LAYER DIELECTRIC
FPE Ø 7,3 ± 0,05 mm

The copper foil has an applied PE-coating, placed in order to prevent foil cracking due to short radius bends.
SCREENING PERCENTAGE 100%
CU-POL

Inner conductor: annealed copper clad aluminium
(annealed = thermal softening process)
CCA Ø 2.78 mm (0,109 inches)

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	0,65	0,20
3,5 MHz	0,85	0,26
7,0 MHz	1,08	0,33
10 MHz	1,20	0,37
14 MHz	1,39	0,42
21 MHz	1,75	0,53
28 MHz	1,93	0,59
50 MHz	2,45	0,75
100 MHz	3,52	1,07
144 MHz	4,20	1,28
200 MHz	5,0	1,52
400 MHz	7,2	2,19
430 MHz	7,6	2,32
800 MHz	10,4	3,17
1000 MHz	11,8	3,6
1296 MHz	13,6	4,15
2400 MHz	19,2	5,85
3000 MHz	21,6	6,58
4000 MHz	25,6	7,80
5000 MHz	29,2	8,9
6000 MHz	32,8	10,0
7000 MHz	35,6	10,85
8000 MHz	38,6	11,77
10.000 MHz	44,6	13,59
12.000 MHz	50,2	15,30

ELECTRICAL DATA

Impedance @200MHz :	50 Ohm ± 3
Minimum bending radius:	
Multiple bends/single bend	103/65 mm
Temperature:	-45° to + 70° C
Capacitance:	74 pF/m ± 2
Velocity ratio:	87 %
Screening efficiency:	
100-2000 MHz	>105 dB
Class	A++
Inner conductor resistance:	4,4 Ohm/Km
Outer conductor resistance:	12 Ohm/Km
Tension test (spark test):	8 kV
Weight (100m):	7 Kg
Maximum peak power:	14500 WATT

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>25 dB
1200-2000 MHz	>20 dB

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP
1,8 MHz	10831 W
3,5 MHz	8471 W
7,0 MHz	6667 W
10 MHz	6000 W
14 MHz	5180 W
21 MHz	4114 W
28 MHz	3731 W
50 MHz	2939 W
100 MHz	2045 W
144 MHz	1710 W
200 MHz	1440 W
400 MHz	992 W

FREQUENCY	MAXP
430 MHz	944 W
800 MHz	692 W
1000 MHz	610 W
1296 MHz	529 W
2400 MHz	375 W
3000 MHz	333 W
4000 MHz	281 W
5000 MHz	247 W
6000 MHz	220 W
7000 MHz	202 W
8000 MHz	187 W
10.000 MHz	161 W

For step by step assembly instructions of connectors, please visit our website www.messi.it

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

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Given a power fed to the X value (any value expressed in Watts), the actual power output of the cable is shown in the table in the form of remaining percentage. (for example, if we use a cable such as M&P-AIRBORNE 10, entering 1000 Watts over a length of 35m, at a frequency of 144 MHz, there remains 71.2% of 1000). **For maximum applicable power, see the Power Handling of the cable concerned.** From these values, have already been deducted the SRL values, typical of each one of our models, for the respective frequencies.
REMEMBER: Make sure to match the line accurately!

M&P-AIRBORNE 10

	length --->		16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m
Frequencies / Frequenze	85.71 m	3,5	98.9	98	97	96.1	95.2	93.3	90.6	86.4	82.2	77.6	73	67.6	55.5	Useful signal output (residual power %)
	42.85 m	7	98.7	97.5	96.3	95.1	93.9	91.6	88.3	82.9	77.9	72.4	67.1	60.8	47.4	
	21.42 m	14	98.4	96.8	95.3	93.7	92.4	89.3	85.1	78.6	72.6	65.9	59.9	52.7	38.2	
	10.71 m	28	97.8	95.6	93.5	91.4	89.4	85.5	80	71.7	64	56.2	49.1	41	26.3	
	6 m	50	97.2	94.5	91.8	89.3	86.8	82	75.4	65.4	56.8	48	40.5	32.3	18.4	
	2 m	144	95.2	90.7	86.4	82.3	78.4	71.2	61.6	48.3	37.9	28.3	21.2	14.4	5.4	
	69 cm	430	91.5	83.8	76.7	70.3	64.4	54	41.5	26.8	17.2	10.1	5.9			
	23.1 cm	1296	84,9	72,5	61,9	52,8	45,1	32,8	20,3	8,9	3,7					
	12.5 cm	2400	78	61.8	48.9	38.6	30.4	18.7	8.6							
	10 cm	3000	75.2	57.4	43.8	33.2	25.2	14.2	5.6							
	7.5 cm	4000	71.2	51.4	37	26.5	18.9	9.2								
	6 cm	5000	67.2	45.9	31.1	20.9	13.8	5.6								
	5 cm	6000	63.4	40.9	26.2	16.4	9.9									
	3.75 cm	8000	57	33	19	10										
	3 cm	10.000	50	20.6	12											
	2.5 cm	12.000	45	18												

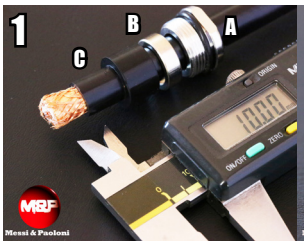
M&P-AIRBORNE 10 (Power Handling/Temperature)

			Temperature C° / F°									
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158
Frequencies / Frequenze	166.66 m	1,8	13300	13300	13300	13300	12900	12174	10831	9239	7647	6065
	85.71 m	3,5	13112	12672	12299	11520	10605	9521	8471	7225	5980	4744
	42.85 m	7	10320	9973	9680	9067	8347	7493	6667	5687	4707	3733
	30 m	10	9288	8976	8712	8160	7512	6744	6000	5118	4236	3360
	21.42 m	14	8018	7749	7521	7045	6485	5822	5180	4418	3657	2901
	14.28 m	21	6369	6155	5974	5595	5151	4624	4114	3509	2905	2304
	10.71 m	28	5775	5581	5417	5074	4671	4193	3731	3182	2634	2089
	6 m	50	4549	4396	4267	3997	3679	3303	2939	2507	2075	1646
	3 m	100	3166	3060	2970	2782	2561	2299	2045	1745	1444	1145
	2.08 m	144	2647	2558	2483	2326	2141	1922	1710	1459	1207	958
	1.5 m	200	2229	2154	2091	1958	1803	1619	1440	1228	1017	806
	75 cm	400	1535	1484	1440	1349	1242	1115	992	846	700	555
	69 cm	430	1461	1412	1370	1283	1181	1061	944	805	666	528
	37.5 cm	800	1072	1036	1005	942	867	778	692	591	489	388
	30 cm	1000	945	913	886	830	764	686	610	520	431	342
	23.1 cm	1296	820	792	769	720	663	595	529	452	374	296
	12.5 cm	2400	581	561	545	510	470	422	375	320	265	210
	10 cm	3000	516	499	484	453	417	375	333	284	235	187
	7.5 cm	4000	435	421	408	383	352	316	281	240	199	158
	6 cm	5000	382	369	358	335	309	277	247	210	174	138
	5 cm	6000	340	328	319	299	275	247	220	187	155	123
	4.2 cm	7000	313	303	294	275	253	227	202	173	143	113
	3.75 cm	8000	289	279	271	254	234	210	187	159	132	104
	3.3 cm	9000	269	260	252	236	217	195	173	148	122	97
	3 cm	10.000	250	242	234	220	202	181	161	138	114	90

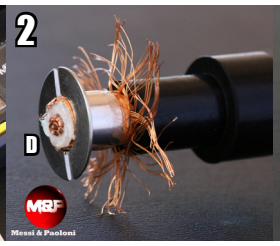
WATT

Connector assembly

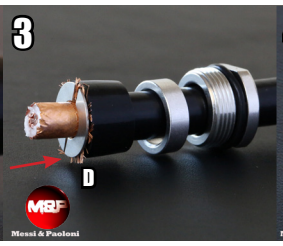
Connector “N” type : C.N.BROAD50-M



Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

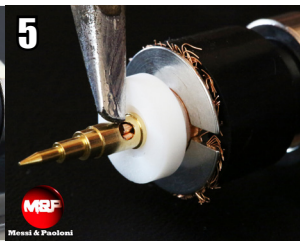


Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the black PVC jacket.



Flatten the wires as shown in the picture and cut the excess.

Cut and remove the tape and dieletric for a length as shown in the picture (6mm).

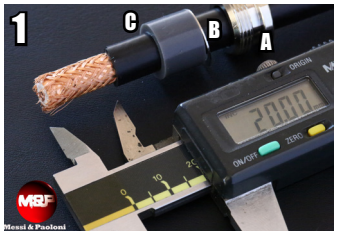


Insert one of the two teflon discs and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to transfer excessive heat to the highly conductive copper underneath. Excessive heat deforms the dielectric which is made of foam PE and not in teflon!.

Insert the second teflon disc as shown in the picture.

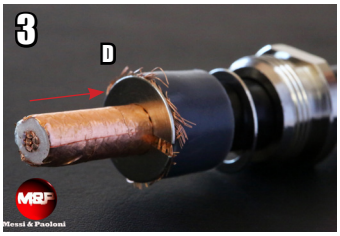
Insert the connector and fasten accurately until the o-ring present in component A, will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

Connector “UHF” type : C.UHF.BROAD50-M

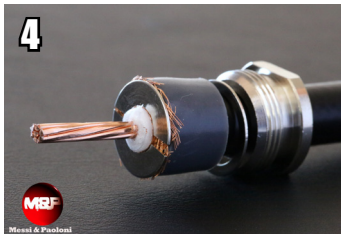


Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

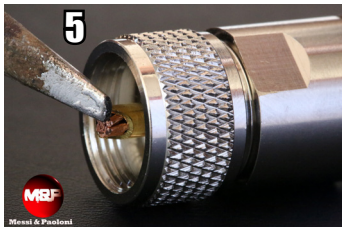
Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the black PVC jacket.



Flatten the wires as shown in the picture and cut the excess.



Cut and remove the tape and dieletric for a lenght as shown in the picture.



Insert the connector and solder it with tin to the inner conductor (see picture above). Avoid heating the pin for a too long time in order not to transfer excessive heat to the highly conductive copper underneath. Excessive heat deforms the dielectric which is made of foam PE and not in teflon!.

6

Fasten together the connector and component A, until it will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

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Ham Radio Pro Cables

M&P

HyperFlex 10

MESSI & PAOLONI

EXTRAFLEXIBLE

UV resistant PVC jacket.

PVC Ø 10,3 ± 0,15 mm (0,405 inches)

High resistance copper clad aluminium screen (**CCA**) made by means of **24 spools** braiding machines.(50% more crossovers if compared to traditional 16 spools machines.) This braid is **HIGHLY EFFECTIVE AGAINST LOW FREQUENCY IMPULSIVE NOISES.**
SCREENING PERCENTAGE: 78% 168 wires

High pressure physical injection foamed polyethylene,
TRIPLE LAYER DIELECTRIC.
FPE Ø 7,3 ± 0,05 mm

Screening foil, highly effective against high frequency interferences. The copper foil has an applied PE-coating, placed in order to prevent foil cracking due to short radius bends.
SCREENING PERCENTAGE 100%
CU-POL

Inner conductor made of 19x0,59 stranded, geometric and concentric annealed copper wires. Purity 99,99%.
(annealed = thermal softening process) **(19x0,023 inches)**
Cu 19x0,59 mm - Ø 3 mm (0,118 inches)

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	0,7	0,21
3,5 MHz	0,9	0,27
7,0 MHz	1,16	0,35
10 MHz	1,34	0,41
14 MHz	1,55	0,47
21 MHz	1,84	0,56
28 MHz	2,07	0,63
50 MHz	2,76	0,84
100 MHz	3,95	1,20
144 MHz	4,76	1,45
200 MHz	5,67	1,73
400 MHz	8,3	2,53
430 MHz	8,6	2,62
800 MHz	11,96	3,65
1000 MHz	13,47	4,11
1296 MHz	15,49	4,72
2400 MHz	21,8	6,64
3000 MHz	24,66	7,52
4000 MHz	29,1	8,87
5000 MHz	33,1	10,09
6000 MHz	36,9	11,25
7000 MHz	40,7	12,41
8000 MHz	44,2	13,47
9000 MHz	47,5	14,48
10.000 MHz	50,7	15,45

ELECTRICAL DATA

Impedance @200MHz:	50 Ohm ± 3
Minimum bending radius:	
Multiple bends(15)/single bend	80/40 mm
Temperature range:	
installation	-40° to +60° C
operative	-55° to +85° C
Capacitance:	78 pF/m ± 2
Velocity ratio:	87 %
Screening efficiency:	
100-2000 MHz	>105 dB
Class	A++
Inner conductor resistance:	3,6 Ohm/Km
Outer conductor resistance:	12 Ohm/Km
Tension test (spark test):	8 kV
Weight (100m):	11,1 Kg
Maximum peak power:	13 KWATT

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>25 dB
1200-2000 MHz	>20 dB

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP	FREQUENCY	MAXP
1,8 MHz	9927 W	430 MHz	808 W
3,5 MHz	7721 W	800 MHz	581 W
7,0 MHz	5990 W	1000 MHz	516 W
10 MHz	5186 W	1296 MHz	449 W
14 MHz	4483 W	2400 MHz	319 W
21 MHz	3777 W	3000 MHz	282 W
28 MHz	3357 W	4000 MHz	239 W
50 MHz	2518 W	5000 MHz	210 W
100 MHz	1759 W	6000 MHz	188 W
144 MHz	1460 W	7000 MHz	171 W
200 MHz	1226 W	8000 MHz	157 W
400 MHz	837 W	10.000 MHz	137 W

For step by step assembly instructions of connectors, please visit our website www.messi.it

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

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Given a power fed to the X value (any value expressed in Watts), the actual power output of the cable is shown in the table in the form of remaining percentage. (for example, if we use a cable such as M&P-HYPERFLEX 10, entering 1000 Watts over a length of 35m, at a frequency of 144 MHz, there remains 68.1 % of 1000). **For maximum applicable power, see the Power Handling of the cable concerned.** From these values, have already been deducted the SRL values, typical of each one of our models, for the respective frequencies.
REMEMBER: Make sure to match the line accurately!

M&P-HYPERFLEX 10

	length --->		16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m
Frequencies / Frequenze	85.71 m	3,5	99,0	97,9	96,9	95,9	95,0	93,0	90,2	85,6	81,3	76,4	71,8	66,1	53,7	Useful signal output (residual power %)
	42.85 m	7	98,7	97,4	96,1	94,8	93,5	91,1	87,5	81,8	76,6	70,7	65,2	58,6	44,9	
	21.42 m	14	98,2	96,5	94,8	93,1	91,5	88,3	83,7	76,5	70,0	62,9	56,5	49,0	34,3	
	10.71 m	28	97,6	95,3	93,1	90,9	88,8	84,6	78,8	69,9	62,1	53,8	46,6	38,5	23,9	
	6 m	50	96,9	93,8	90,9	88,1	85,3	80,1	72,8	62,1	53,0	43,8	36,2	28,1	14,9	
	2 m	144	94,7	89,6	84,8	80,3	76,0	68,1	57,8	44,0	33,4	24,1	17,3	11,2	3,7	
	69 cm	430	90,6	82,0	74,3	67,3	61,0	50,0	37,2	22,6	13,8	7,6	4,2			
	23.1 cm	1296	83	69,4	57,9	48,4	40,4	28,1	16,2	6,3						
	12.5 cm	2400	77,8	60,5	47,1	36,6	28,5	17,3	8,1							
	10 cm	3000	75,3	56,7	42,7	32,1	24,2	13,7	5,8							
	7.5 cm	4000	71,5	51,2	36,6	26,2	18,7	9,6	3,5							
	6 cm	5000	68,3	46,7	31,9	21,8	14,9	6,9								
	5 cm	6000	65,3	42,7	27,9	18,2	11,9	5,1								
	3.75 cm	8000	60,1	36,1	21,7	13,1	7,9									
	3 cm	10.000	55,8	31,1	17,4	9,7	5,4									
	2.5 cm	12.000	51,8	26,8	13,9	7,2	3,7									

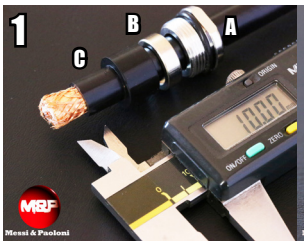
M&P-HYPERFLEX 10 (Power Handling/Temperature)

			Temperature C° / F°									
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158
Frequencies / Frequenze	166.66 m	1,8	12000	12000	12000	11980	11178	10710	9927	8468	7008	5559
	85.71 m	3,5	11720	11450	11211	10500	9667	8678	7721	6586	5451	4324
	42.85 m	7	9273	8962	8698	8147	7500	6733	5990	5110	4229	3355
	30 m	10	8027	7758	7530	7053	6492	5829	5186	4423	3661	2904
	21.42 m	14	6940	6707	6509	6097	5613	5039	4483	3824	3165	2511
	14.28 m	21	5846	5650	5484	5136	4728	4245	3777	3221	2666	2115
	10.71 m	28	5196	5022	4874	4565	4203	3773	3357	2863	2370	1880
	6 m	50	3897	3766	3656	3424	3152	2830	2518	2148	1777	1410
	3 m	100	2723	2632	2554	2392	2203	1977	1759	1501	1242	985
	2.08 m	144	2260	2184	2120	1985	1828	1641	1460	1245	1031	818
	1.5 m	200	1897	1833	1779	1667	1534	1378	1226	1045	865	686
	75 cm	400	1296	1252	1216	1139	1048	941	837	714	591	469
	69 cm	430	1251	1209	1173	1099	1012	908	808	689	570	452
	37.5 cm	800	899	869	844	790	727	653	581	496	410	325
	30 cm	1000	799	772	749	702	646	580	516	440	364	289
	23.1 cm	1296	694	671	651	610	562	504	449	383	317	251
	12.5 cm	2400	493	477	463	434	399	358	319	272	225	179
	10 cm	3000	436	422	409	383	353	317	282	240	199	158
	7.5 cm	4000	370	357	347	325	299	268	239	204	169	134
	6 cm	5000	325	314	305	286	263	236	210	179	148	118
	5 cm	6000	291	281	273	256	235	211	188	160	133	105
	4.2 cm	7000	264	255	248	232	214	192	171	146	121	96
	3.75 cm	8000	243	235	228	214	197	177	157	134	111	88
	3 cm	10.000	212	205	199	186	172	154	137	117	97	77

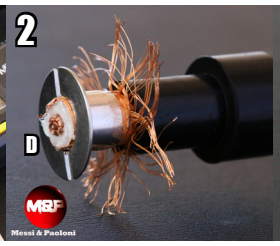
WATT

Connector assembly

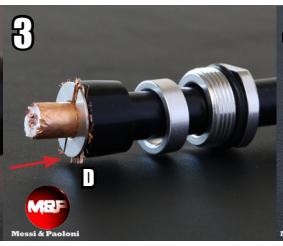
Connector “N” type : C.N.BROAD50-M



Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

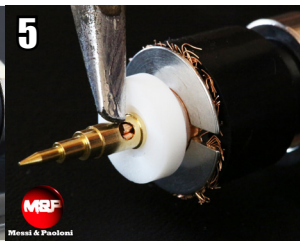


Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the black PVC jacket.



Flatten the wires as shown in the picture and cut the excess.

Cut and remove the tape and dieletric for a length as shown in the picture (6mm).

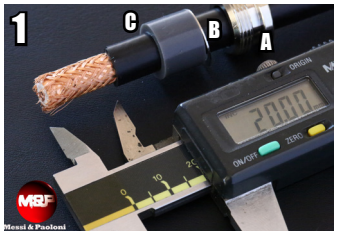


Insert one of the two teflon discs and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to transfer excessive heat to the highly conductive copper underneath. Excessive heat deforms the dielectric which is made of foam PE and not in teflon!.

Insert the second teflon disc as shown in the picture.

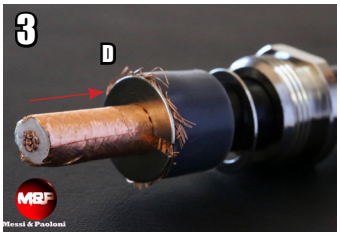
Insert the connector and fasten accurately until the o-ring present in component A, will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

Connector “UHF” type : C.UHF.BROAD50-M

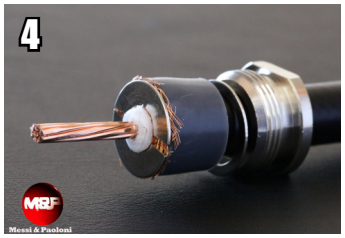


Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.

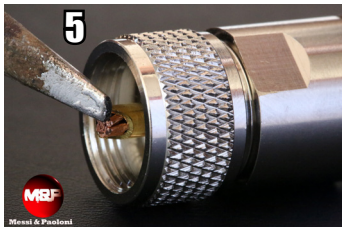
Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the black PVC jacket.



Flatten the wires as shown in the picture and cut the excess.



Cut and remove the tape and dieletric for a lenght as shown in the picture.



Insert the connector and solder it with tin to the inner conductor (see picture above). Avoid heating the pin for a too long time in order not to transfer excessive heat to the highly conductive copper underneath. Excessive heat deforms the dielectric which is made of foam PE and not in teflon!.

6

Fasten together the connector and component A, until it will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

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M&P

UltraFlex 13 /.500"

EXTRAFLEXIBLE

UV resistant PVC jacket.

PVC Ø 12,7 ± 0,15 mm
(0,500 inches)

High resistance copper clad aluminium screen (**CCA**) made by means of **24 spools** braiding machines.(50% more crossovers if compared to traditional 16 spools machines.) This braid is **HIGHLY EFFECTIVE AGAINST LOW FREQUENCY IMPULSIVE NOISES.**
SCREENING PERCENTAGE: 70% 168 wires

Screening foil, highly effective against high frequency interferences. The copper foil has an applied PE-coating, placed in order to prevent foil cracking due to short radius bends.
SCREENING PERCENTAGE 100%
CU-POL

Inner conductor made of 19x0,78 stranded, geometric and concentric annealed copper wires. Purity 99,99%. (annealed = thermal softening process) **(19x0,30 inches)**
Cu 19x0,78 mm - Ø 3.9 mm
(0,153 inches)

High pressure physical injection foamed polyethylene, **TRIPLE LAYER DIELECTRIC.**
FPE Ø 9,9 ± 0,05 mm

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	0,5	0,15
3,5 MHz	0,58	0,18
7,0 MHz	0,75	0,23
10 MHz	0,89	0,27
14 MHz	1,05	0,32
21 MHz	1,25	0,38
28 MHz	1,49	0,45
50 MHz	2,0	0,61
100 MHz	2,9	0,88
144 MHz	3,65	1,11
200 MHz	4,3	1,31
400 MHz	6,25	1,91
430 MHz	6,45	1,97
800 MHz	9,15	2,79
1000 MHz	10,3	3,14
1296 MHz	12,0	3,66
2400 MHz	17,4	5,30
3000 MHz	19,8	6,04
4000 MHz	23,6	7,19
5000 MHz	26,9	8,20
6000 MHz	30,14	9,19
7000 MHz	33,3	10,15
8000 MHz	35,9	10,94
9000 MHz	38,7	11,80
10.000 MHz	41,7	12,71
12.000 MHz	47,3	14,42

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>25 dB
1200-2000 MHz	>20 dB

ELECTRICAL DATA

Impedance @200MHz:	50 Ohm ± 3
Minimum bending radius:	
Multiple bends(15)/single bend	127/80 mm
Temperature range:	
installation	-40° to +60° C
operative	-55° to +85° C
Capacitance:	75 pF/m ± 2
Velocity ratio:	86 %
Screening efficiency:	
100-2000 MHz	>105 dB
Class	A++
Inner conductor resistance:	2 Ohm/Km
Outer conductor resistance:	12 Ohm/Km
Tension test (spark test):	8 kV
Weight (100m):	17,4 Kg
Maximum peak power:	20 KWATT

POWER HANDLING (at 40°C/104°F)

FREQUENZE	PMAX	FREQUENZE	PMAX
1,8 MHz	13800 W	800 MHz	1005 W
3,5 MHz	11996 W	1000 MHz	893 W
7,0 MHz	9353 W	1296 MHz	767 W
10 MHz	7947 W	2400 MHz	529 W
14 MHz	6790 W	3000 MHz	465 W
21 MHz	5732 W	4000 MHz	390 W
28 MHz	4862 W	5000 MHz	342 W
50 MHz	3738 W	6000 MHz	305 W
100 MHz	2776 W	7000 MHz	276 W
144 MHz	2363 W	8000 MHz	256 W
200 MHz	2140 W	9000 MHz	238 W
400 MHz	1472 W	10.000 MHz	221 W
430 MHz	1426 W	12.000 MHz	195 W

For step by step assembly instructions of connectors, please visit our website www.messi.it

Due to the dimensional parameters of this cable, the frequency of 2500 MHz +/- 15 Mhz is not usable.

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

Messi & Paoloni coaxial cables
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Given a power fed to the X value (any value expressed in Watts), the actual power output of the cable is shown in the table in the form of remaining percentage. (for example, if we use a cable such as
M&P-ULTRAFLEX 13, entering 1000 Watts over a length of 35m, at a frequency of 144 MHz, there remains 74.7 % of 1000).
For maximum applicable power, see the Power Handling of the cable concerned. From these values, have already been deducted the SRL values, typical of each one of our models, for the respective frequencies.
REMEMBER: Make sure to match the line accurately!

M&P-ULTRAFLEX 13

	length --->		16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m
Frequencies / Frequenze	85.71 m	3,5	99,2	98,6	97,9	97,3	96,6	95,3	93,4	90,4	87,4	84,0	80,7	76,5	66,9	Useful signal output (residual power %)
	42.85 m	7	99,0	98,2	97,3	96,5	95,7	94,0	91,6	87,8	84,0	79,8	75,8	70,7	59,5	
	21.42 m	14	98,7	97,5	96,3	95,2	94,0	91,8	88,5	83,3	78,4	72,9	67,8	61,6	48,3	
	10.71 m	28	98,2	96,5	94,9	93,3	91,7	88,6	84,1	77,2	70,9	63,9	57,7	50,3	35,6	
	6 m	50	97,6	95,4	93,2	91,1	89,0	85,0	79,3	70,7	63,0	54,9	47,8	39,7	25,0	
	2 m	144	95,8	91,8	88,1	84,4	80,9	74,7	65,6	53,1	43,1	33,4	26,0	18,5	7,9	
	69 cm	430	92,7	86,0	79,9	74,1	68,8	59,3	47,4	32,7	22,5	14,3	9,1	5,0		
	23.1 cm	1296	86,5	75,2	65,4	56,9	49,5	37,4	24,5	12	5,7					
	12.5 cm	2400	81,2	66,4	54,2	44,2	36,1	24,0	12,9	4,3						
	10 cm	3000	78,6	62,4	49,5	39,2	31,0	19,3	9,2							
	7.5 cm	4000	75,2	57,1	43,3	32,7	24,7	13,9	5,6							
	6 cm	5000	72,4	52,8	38,5	28,0	20,3	10,4	3,5							
	5 cm	6000	69,1	48,4	33,7	23,4	16,1	7,2								
	3.75 cm	8000	64,6	42,2	27,4	17,6	11,1	4,0								
	3 cm	10.000	58,7	35,1	20,5	11,5	5,9									
	2.5 cm	12.000	54,8	30,5	16,4	8,2	3,4									

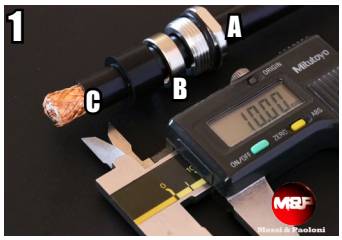
M&P-ULTRAFLEX 13 (Power Handling/Temperature)

			Temperature C° / F°									
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158
Frequencies / Frequenze	166.66 m	1,8	18000	18000	18000	1800	17278	15511	13800	11771	9743	7728
	85.71 m	3,5	18000	17946	17418	16314	15019	13483	11996	10232	8469	6718
	42.85 m	7	14479	13993	13581	12721	11710	10513	9353	7978	6603	5238
	30 m	10	12301	11888	11539	10807	9949	8932	7947	6778	5610	4450
	21.42 m	14	10512	10159	9860	9235	8502	7632	6790	5792	4794	3803
	14.28 m	21	8873	8574	8322	7795	7176	6442	5732	4889	4047	3210
	10.71 m	28	7527	7274	7060	6613	6088	5465	4862	4148	3433	2723
	6 m	50	5786	5591	5427	5083	4679	4201	3738	3188	2639	2093
	3 m	100	4297	4153	4031	3775	3475	3120	2776	2368	1960	1554
	2.08 m	144	3658	3535	3431	3214	2958	2656	2363	2016	1668	1323
	1.5 m	200	3312	3201	3107	2910	2679	2405	2140	1825	1511	1198
	75 cm	400	2279	2202	2137	2002	1843	1655	1472	1256	1039	824
	69 cm	430	2208	2134	2071	1940	1786	1603	1426	1217	1007	799
	37.5 cm	800	1556	1504	1460	1367	1259	1130	1005	858	710	563
	30 cm	1000	1383	1336	1297	1215	1118	1004	893	762	631	500
	23.1 cm	1296	1187	1147	1113	1043	960	862	767	654	541	429
	12.5 cm	2400	818	791	768	719	662	594	529	451	373	296
	10 cm	3000	719	695	675	632	582	522	465	396	328	260
	7.5 cm	4000	603	583	566	530	488	438	390	333	275	218
	6 cm	5000	529	512	497	465	428	384	342	292	241	192
	5 cm	6000	473	457	443	415	382	343	305	260	216	171
	4.2 cm	7000	428	413	401	376	346	311	276	236	195	155
	3.75 cm	8000	397	383	372	349	321	288	256	219	181	144
	3.3 cm	9000	368	356	345	323	298	267	238	203	168	133
	3 cm	10.000	342	330	320	300	276	248	221	188	156	124
	2.5 cm	12.000	301	291	282	265	244	219	195	166	137	109

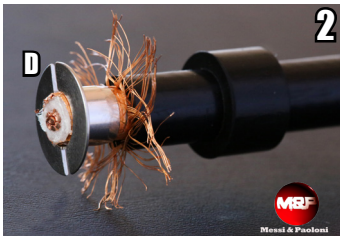
WATT

Connector assembly

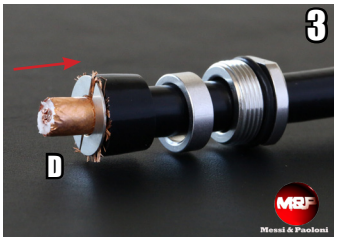
Connector “N” type : C.N.UF13M-S



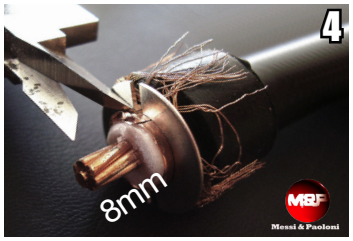
Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.



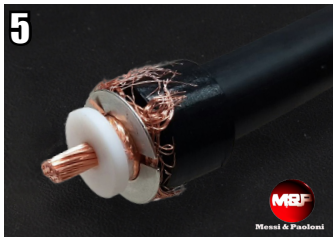
Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the black PVC jacket.



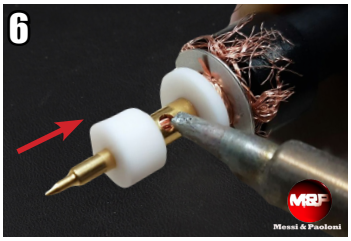
Flatten the wires as shown in the picture and cut the excess.



Cut and remove the tape and dielectric for a length as shown in the picture (8mm).



Insert the first teflon disc like in the above picture.



Insert the second teflon disc like in the above picture and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to damage with excessive heat the cable dielectric (which is not made in teflon!)

Insert the connector and fasten accurately until the o-ring present in component A, will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

Ham Radio Pro Cables

M&P

HyperFlex 13 /.500"

MESSI & PAOLONI

EXTRAFLEXIBLE

UV resistant PVC jacket.

PVC Ø 12,7 ± 0,15 mm
(0,500 inches)

CE

Pb

RoHS COMPLIANT 2002/95/EG

High resistance copper clad aluminium screen (**CCA**) made by means of **24 spools** braiding machines.(50% more crossovers if compared to traditional 16 spools machines.) This braid is **HIGHLY EFFECTIVE AGAINST LOW FREQUENCY IMPULSIVE NOISES.**

SCREENING PERCENTAGE: 70% 168 wires

Screening foil, highly effective against high frequency interferences. The copper foil has an applied PE-coating, placed in order to prevent foil cracking due to short radius bends.

SCREENING PERCENTAGE 100%

CU-POL

Inner conductor made of 37x0,56 stranded, geometric and concentric annealed copper wires. Purity 99,99%. (annealed = thermal softening process) **(37x0,022 inches)**

Cu 37x0,56 mm - Ø 3.9 mm
(0,153 inches)

High pressure physical injection foamed polyethylene, **TRIPLE LAYER DIELECTRIC.**

FPE Ø 9,9 ± 0,05 mm

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	0,47	0,14
3,5 MHz	0,55	0,17
7,0 MHz	0,71	0,22
10 MHz	0,85	0,26
14 MHz	1,0	0,30
21 MHz	1,25	0,38
28 MHz	1,46	0,45
50 MHz	1,93	0,59
100 MHz	2,88	0,88
144 MHz	3,6	1,10
200 MHz	4,28	1,30
400 MHz	6,19	1,89
430 MHz	6,41	1,95
800 MHz	9,0	2,74
1000 MHz	10,14	3,09
1296 MHz	11,7	3,57
2400 MHz	16,68	5,08
3000 MHz	18,9	5,76
4000 MHz	22,45	6,84
5000 MHz	25,68	7,83
6000 MHz	28,71	8,75
7000 MHz	31,71	31,71
8000 MHz	34,57	10,54
9000 MHz	37,5	11,43
10.000 MHz	40,5	12,34
12.000 MHz	46,0	14,02

ELECTRICAL DATA

Impedance @200MHz:	50 Ohm ± 3
Minimum bending radius:	
Multiple bends(15)/single bend	127/80 mm
Temperature range:	
installation	-40° to +60° C
operative	-55° to +85° C
Capacitance:	75 pF/m ± 2
Velocity ratio:	86 %
Screening efficiency:	
100-2000 MHz	>105 dB
Class	A++
Inner conductor resistance:	2 Ohm/Km
Outer conductor resistance:	12 Ohm/Km
Tension test (spark test):	8 kV
Weight (100m):	17,4 Kg
Maximum peak power:	20 KWATT

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>25 dB
1200-2000 MHz	>20 dB

POWER HANDLING (at 40°C/104°F)

FREQUENCY	MAXP	FREQUENCY	MAXP
1,8 MHz	14681 W	800 MHz	1022 W
3,5 MHz	12650 W	1000 MHz	907 W
7,0 MHz	9880 W	1296 MHz	786 W
10 MHz	8321 W	2400 MHz	552 W
14 MHz	7130 W	3000 MHz	487 W
21 MHz	5732 W	4000 MHz	410 W
28 MHz	4962 W	5000 MHz	358 W
50 MHz	3873 W	6000 MHz	320 W
100 MHz	2795 W	7000 MHz	290 W
144 MHz	2396 W	8000 MHz	266 W
200 MHz	2150 W	9000 MHz	245 W
400 MHz	1486 W	10.000 MHz	227 W
430 MHz	1435 W	12.000 MHz	200 W

For step by step assembly instructions of connectors, please visit our website www.messi.it

Due to the dimensional parameters of this cable, the frequency of 2500 MHz +/- 15 Mhz is not usable.

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

Given a power fed to the X value (any value expressed in Watts), the actual power output of the cable is shown in the table in the form of remaining percentage. (for example, if we use a cable such as
M&P-HYPERFLEX 13, entering 1000 Watts over a length of 35m, at a frequency of 144 MHz, there remains 74.7 % of 1000).
For maximum applicable power, see the Power Handling of the cable concerned. From these values, have already been deducted the SRL values, typical of each one of our models, for the respective frequencies.
REMEMBER: Make sure to match the line accurately!

M&P-HYPERFLEX 13

	length --->		16,4	32,8	49,2	65,6	82	114,8	164	246	328	426,5	524,9	656,2	984,2	feet
	Wave length	MHz	5	10	15	20	25	35	50	75	100	130	160	200	300	m
Frequencies / Frequenze	85.71 m	3,5	99,3	98,6	98,0	97,4	96,8	95,6	93,8	90,8	88,0	84,7	81,6	77,5	68,3	Useful signal output (residual power %)
	42.85 m	7	99,1	98,3	97,5	96,7	95,9	94,3	92,1	88,4	84,8	80,8	76,9	72,0	61,1	
	21.42 m	14	98,8	97,6	96,5	95,4	94,3	92,2	89,0	84,0	79,3	74,0	69,1	63,0	50,0	
	10.71 m	28	98,2	96,6	95,0	93,4	91,8	88,8	84,4	77,6	71,3	64,5	58,3	51,0	36,4	
	6 m	50	97,7	95,6	93,5	91,4	89,4	85,5	80,0	71,6	64,0	56,0	49,0	41,0	26,3	
	2 m	144	95,8	91,9	88,2	84,6	81,2	74,7	66,0	53,6	43,6	33,9	26,4	19,0	8,2	
	69 cm	430	92,7	86,1	80,0	74,3	69,0	59,5	47,6	32,9	22,7	14,5	9,3	5,1		
	23.1 cm	1296	86,7	75,8	66,1	57,7	50,4	38,3	25,4	12,6	6,1					
	12.5 cm	2400	81,9	67,5	55,6	45,8	37,7	25,4	14,0	5,0						
	10 cm	3000	79,4	63,7	51,1	40,9	32,7	20,8	10,4							
	7.5 cm	4000	76,2	58,6	45,1	34,6	26,5	15,4	6,5							
	6 cm	5000	73,4	54,4	40,2	29,6	21,8	11,6	4,2							
	5 cm	6000	70,3	50,0	35,5	25,1	17,6	8,3								
	3.75 cm	8000	65,6	43,5	28,7	18,8	12,1	4,6								
	3 cm	10.000	59,6	36,2	21,5	12,3	6,6									
	2.5 cm	12.000	55,7	31,5	17,3	8,9	3,9									

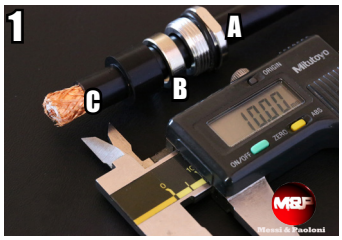
M&P-HYPERFLEX 13 (Power Handling/Temperature)

			Temperature C° / F°									
	Wave length	MHz	-10 / 14	-5 / 23	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	60 / 140	70 / 158
Frequencies / Frequenze	166.66 m	1,8	18000	18000	18000	18000	18000	16501	14681	12523	10365	8221
	85.71 m	3,5	18000	18000	18000	17204	15838	14219	12650	10790	8931	7084
	42.85 m	7	15295	14781	14346	13437	12370	11105	9880	8428	6975	5533
	30 m	10	12880	12448	12081	11316	10417	9352	8321	7097	5874	4660
	21.42 m	14	11037	10666	10353	9697	8927	8014	7130	6082	5034	3993
	14.28 m	21	8873	8574	8322	7795	7176	6442	5732	4889	4047	3210
	10.71 m	28	7682	7424	7205	6749	6213	5578	4962	4233	3503	2779
	6 m	50	5995	5794	5624	5267	4849	4353	3873	3304	2734	2169
	3 m	100	4327	4182	4059	3801	3500	3142	2795	2384	1973	1565
	2.08 m	144	3709	3584	3479	3258	3000	2693	2396	2044	1691	1342
	1.5 m	200	3327	3216	3121	2923	2691	2416	2150	1834	1518	1204
	75 cm	400	2301	2223	2158	2021	1861	1671	1486	1268	1049	832
	69 cm	430	2222	2147	2084	1952	1797	1613	1435	1224	1013	804
	37.5 cm	800	1582	1529	1484	1390	1280	1149	1022	872	722	572
	30 cm	1000	1404	1357	1317	1234	1136	1020	907	774	641	508
	23.1 cm	1296	1217	1176	1142	1069	984	884	786	671	555	440
	12.5 cm	2400	854	825	801	750	691	620	552	470	389	309
	10 cm	3000	754	728	707	662	609	547	487	415	344	273
	7.5 cm	4000	634	613	595	557	513	461	410	350	289	229
	6 cm	5000	555	536	520	487	449	403	358	306	253	201
	5 cm	6000	496	479	465	436	401	360	320	273	226	179
	4.2 cm	7000	449	434	421	395	363	326	290	247	205	162
	3.75 cm	8000	412	398	386	362	333	299	266	227	188	149
	3.3 cm	9000	380	367	356	334	307	276	245	209	173	137
	3 cm	10.000	352	340	330	309	284	255	227	194	160	127
	2.5 cm	12.000	310	299	290	272	250	225	200	171	141	112

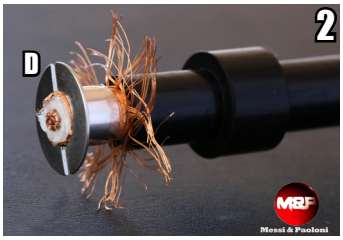
WATT

Connector assembly

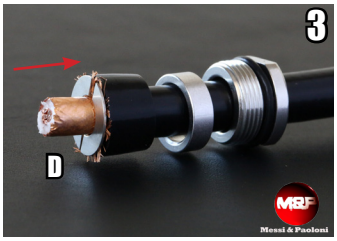
Connector “N” type : C.N.UF13M-S



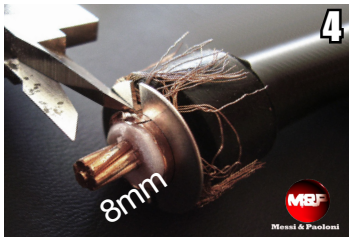
Insert in the cable components A, B, C and immediately after, make a circular cut on the black PVC jacket at the indicated length shown in the caliber (in mm). Subsequently remove it.



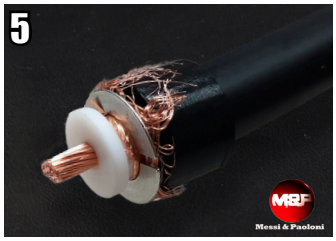
Insert component D after having opened the braid as shown in the picture. Push component D between the foil and the braid until it stops against the black PVC jacket.



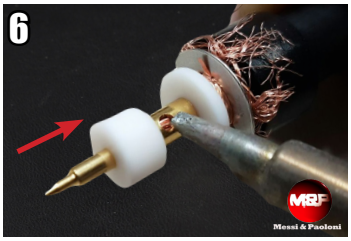
Flatten the wires as shown in the picture and cut the excess.



Cut and remove the tape and dielectric for a length as shown in the picture (8mm).



Insert the first teflon disc like in the above picture.



Insert the second teflon disc like in the above picture and subsequently the central pin. Solder the pin to the inner conductor, inserting tin in the provided hole. Avoid heating the pin for a too long time in order not to damage with excessive heat the cable dielectric (which is not made in teflon!)

Insert the connector and fasten accurately until the o-ring present in component A, will be pressed against the connector body. Inside, the rubber component C (pic. 1) will expand, granting optimal sealing against moisture and a perfect contact to ground.

RG 214 A/U
Mil C17-F

Ham Radio Pro Cables
MESSI & PAOLONI

High resistance **"tear proof"** PVC jacket.
PVC Ø 10,8 ± 0,15 mm (0,425 inches)

Double special screen made of a silver plated copper **BRAID** (**CuAg**). Exceptional long lasting performance: silver oxide has even better conductivity than silver itself. Resulting is an outstanding operative life, expecially nearby the sea. The braiding process is operated by means of **24 spools** braiding machines. Highly effective against low frequency impulsive noises.

2° screen : 168 wires with 98% coverage

1° screen : 144 wires with 96% coverage

Solid polyethylene
DIELECTRIC
PE Ø 7,25 ± 0,05 mm

Inner conductor made of 7X0,75 stranded geometric and concentric silver plated copper wires.
Purity 99,99% annealed.
(annealed = thermal softening process)
(7x0,029 inches)
CuAg 7X0,75 mm
Ø 2,25 mm (0,088 inches)

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>30 dB
1200-2000 MHz	>25 dB

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	1,2	0,36
3,5 MHz	1,4	0,43
7,0 MHz	1,8	0,55
10 MHz	2,0	0,61
14 MHz	2,3	0,70
21 MHz	2,9	0,88
28 MHz	3,4	1,04
50 MHz	4,6	1,40
100 MHz	6,2	1,88
144 MHz	8,3	2,53
200 MHz	10,0	3,04
400 MHz	14,5	4,41
430 MHz	15,4	4,70
800 MHz	21,6	6,58
1000 MHz	25,3	7,71
1296 MHz	31,8	9,69

ELECTRICAL DATA

Impedance:	50 Ohm ± 3
Minimum bending radius:	
Multiple bends/single bend	120/60 mm
Capacitance:	101 pF/m ± 2
Velocity ratio:	66 %
Screening efficiency:	
100-900 MHz	>80 dB
Inner conductor resistance:	5,5 Ohm/Km
Outer conductor resistance:	4 Ohm/Km
Tension test (spark test):	8 kV
Weight (100m):	20 Kg
Maximum peak power:	16 KW

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP
1,8 MHz	5533 W
3,5 MHz	3429 W
7,0 MHz	4000 W
10 MHz	3600 W
14 MHz	3130 W
21 MHz	2483 W
28 MHz	2118 W
50 MHz	1565 W
100 MHz	1161 W
144 MHz	867 W
200 MHz	720 W
400 MHz	497 W
430 MHz	468 W
800 MHz	333 W
1000 MHz	285 W
1296 MHz	226 W

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

For step by step assembly instructions of connectors, please visit our website www.messi.it

Ham Radio Pro Cables

M&P

MESSI & PAOLONI

RG 213/U

Mil C17

High resistance **"tear proof"** PVC jacket.

PVC Ø 10,2 ± 0,15 mm (0,401 inches)

High resistance copper screen (**Cu**) made by means of **24 spools** braiding machines. (50% more crossovers if compared to traditional 16 spools machines.) This braid is **HIGHLY EFFECTIVE AGAINST LOW FREQUENCY IMPULSIVE NOISES.**

SCREENING PERCENTAGE: 91,5% 240 wires

CE

Pb

RoHS COMPLIANT 2002/95/EG

Solid polyethylene
DIELECTRIC
PE Ø 7,25 ± 0,05 mm

Inner conductor made of 7X0,75 stranded geometric and concentric copper wires.
Purity 99,99% annealed.
(annealed = thermal softening process)
(7x0,029 inches)
Cu 7x0,75 mm
Ø 2,25 mm (0,088 inches)

SRL

0,3-600 MHz	>30 dB
600-1200 MHz	>25 dB
1200-2000 MHz	>25 dB

ELECTRICAL DATA

Impedance:	50 Ohm ± 3
Minimum bending radius:	
Multiple bends/single bend	120/60 mm
Capacitance:	101 pF/m ± 2
Velocity ratio:	66 %
Screening efficiency:	
100-900 MHz	>55 dB
Inner conductor resistance:	5,8 Ohm/Km
Outer conductor resistance:	5,7 Ohm/Km
Tension test (spark test):	8 kV
Weight (100m):	13,8 Kg
Maximum peak power:	16 KW

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	0,98	0,30
3,5 MHz	1,3	0,40
7,0 MHz	1,8	0,55
10 MHz	2,1	0,64
14 MHz	2,5	0,76
21 MHz	3,0	0,91
28 MHz	3,45	1,05
50 MHz	4,5	1,37
100 MHz	6,1	1,86
144 MHz	7,5	2,29
200 MHz	9,0	2,74
400 MHz	13,5	4,11
430 MHz	14,1	4,30
800 MHz	20,5	6,25
1000 MHz	23,5	7,16
1296 MHz	27,6	8,41

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP
1,8 MHz	7347 W
3,5 MHz	5538 W
7,0 MHz	4000 W
10 MHz	3429 W
14 MHz	2880 W
21 MHz	2400 W
28 MHz	2087 W
50 MHz	1600 W
100 MHz	1180 W
144 MHz	960 W
200 MHz	800 W
400 MHz	533 W
430 MHz	511 W
800 MHz	351 W
1000 MHz	306 W
1296 MHz	261 W

For step by step assembly instructions of connectors, please visit our website www.messi.it

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)

RG 58 C/U

Mil C17-F

Ham Radio Pro Cables

MESSI & PAOLONI

High resistance **"tear proof"** PVC jacket.

PVC Ø 5 ± 0,15 mm

(0,197 inches)

High resistance screen made of a tinned copper **BRAID** (**CuSn**). The braiding process is operated by means of **16 spools** braiding machines. Highly effective against low frequency impulsive noises.

SCREENING PERCENTAGE: 92% 112 wires

Solid polyethylene dielectric

PE Ø 2,95 ± 0,05 mm

Inner conductor made of 19x0,18 stranded geometric and concentric tinned copper (**CuSn**).

CuSn 19x0,18 mm (19x0,007 inches)

Ø 0,90 mm (0,035 inches)

ATTENUATION at 20°C

FREQUENCY	dB/100m	dB/100ft
1,8 MHz	2,1	0,64
3,5 MHz	2,9	0,88
7,0 MHz	3,9	1,19
10 MHz	4,7	1,43
14 MHz	5,6	1,71
21 MHz	6,7	2,04
28 MHz	7,9	2,41
50 MHz	10,8	3,29
100 MHz	15,8	4,81
144 MHz	19,3	5,88
200 MHz	22,1	6,73
400 MHz	33,3	10,14
430 MHz	34,9	10,64
800 MHz	51,1	15,57
1000 MHz	58.0	17,67
1296 MHz	63,0	19,20

ELECTRICAL DATA

Impedance @200MHz :		50 Ohm ± 3
Minimum bending radius:		
Multiple bends/single bend:		50/25 mm
Temperature:	installation	-40° to +60° C
	operative	-55° to +85° C
Capacitance:		101 pF/m ± 2
Velocity ratio:		66 %
Screening efficiency:		
100-900 MHz		>55 dB
Inner conducotr resistance:		37 Ohm/Km
Outer conductor resistance:		15 Ohm/Km
Tension test (spark test):		4 kV
Weight (100m):		3,7 Kg
Maximum peak power:		2000 WATT

SRL

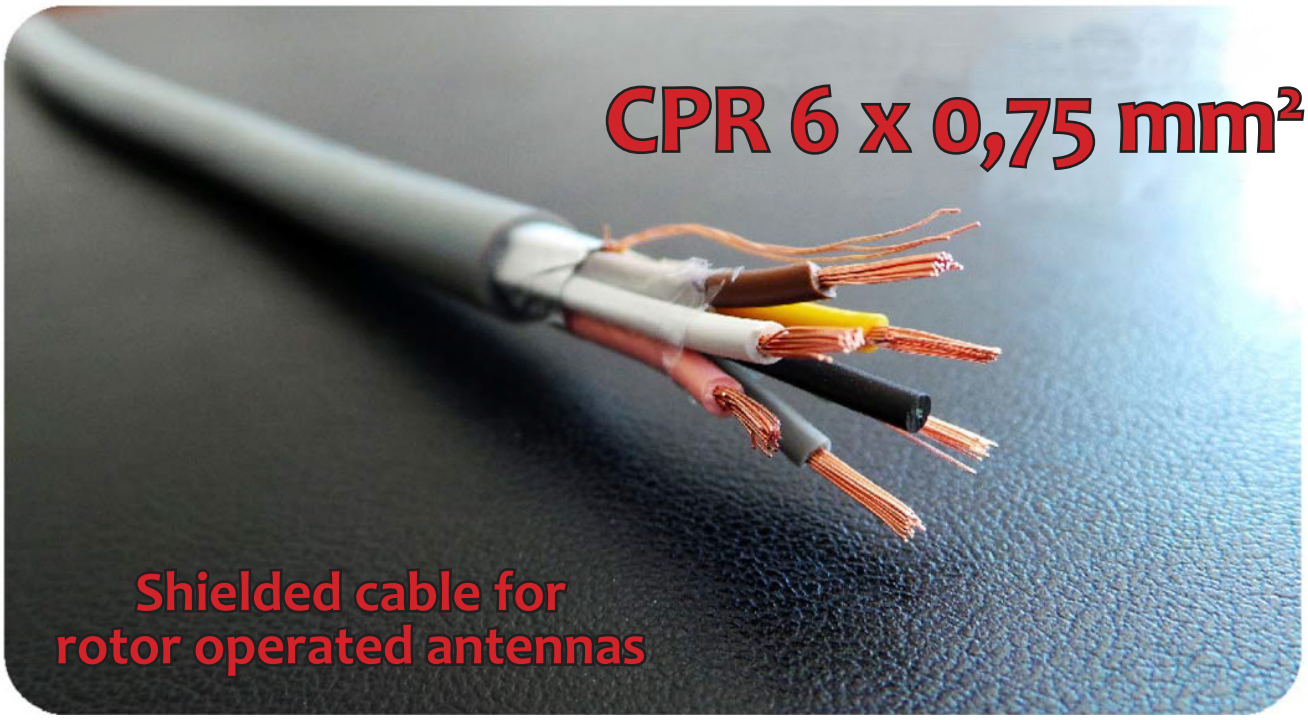
0,3-600 MHz	>35 dB
600-1200 MHz	>30 dB
1200-2000 MHz	>30 dB

POWER HANDLING (at 40C°/104 F°)

FREQUENCY	MAXP
1,8 MHz	1321 W
3,5 MHz	1138 W
7,0 MHz	846 W
10 MHz	702 W
14 MHz	589 W
21 MHz	493 W
28 MHz	418 W
50 MHz	306 W
100 MHz	209 W
144 MHz	171 W
200 MHz	149 W
400 MHz	99 W
430 MHz	95 W

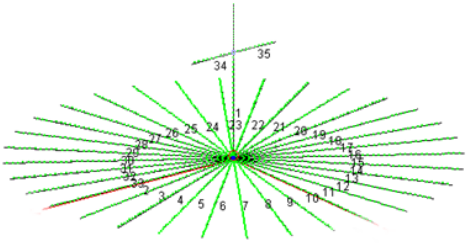
For step by step assembly instructions of connectors, please visit our website www.messi.it

Our products are manufactured in compliance with: CEI 46-1 (construction parameters); EN 50117(screening efficiency); CEI EN 50289(SA test methods); IEC 60332-1-2(cables with LSZH jacket)



DATASHEET	
Number of conductors:	6 (+ one PVC cilinder for centering the cable)
Section of each conductor:	0,75 mmq^2
Conductor colors:	White
	Brown
	Green
	Grey
	Yellow
	Pink
Shielding:	Alluminium tape matched with a polyesther film
	(+ flexible earth conductor)
External insulation:	Dark grey PVC Jacket - FLAME RETARDANT - Ø 7,6mm
Packaging:	Coils 100m
	Coils 50m

Cable for radial grounding - GR 163



Inner conductor	pure copper 99,99 %
diameter	1,63 mm - (2,1 mm^2)
Conductor resistance (Ohm/Km)	7,8
Jacket	black PE
diameter	2,9 mm

Doesn't fear neither water nor corrosion and if well sealed on both ends, can be buried underground and it is virtually eternal. (Remember to seal the ends)

COMPARISON CHART
ATTENUATION-POWER RATIO

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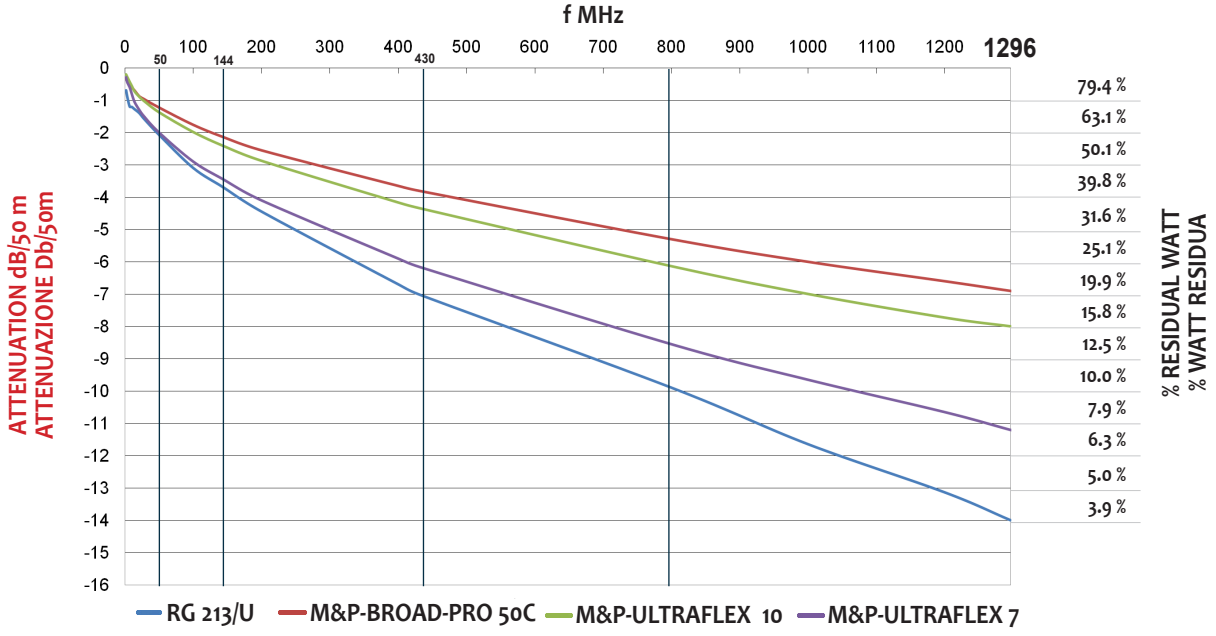
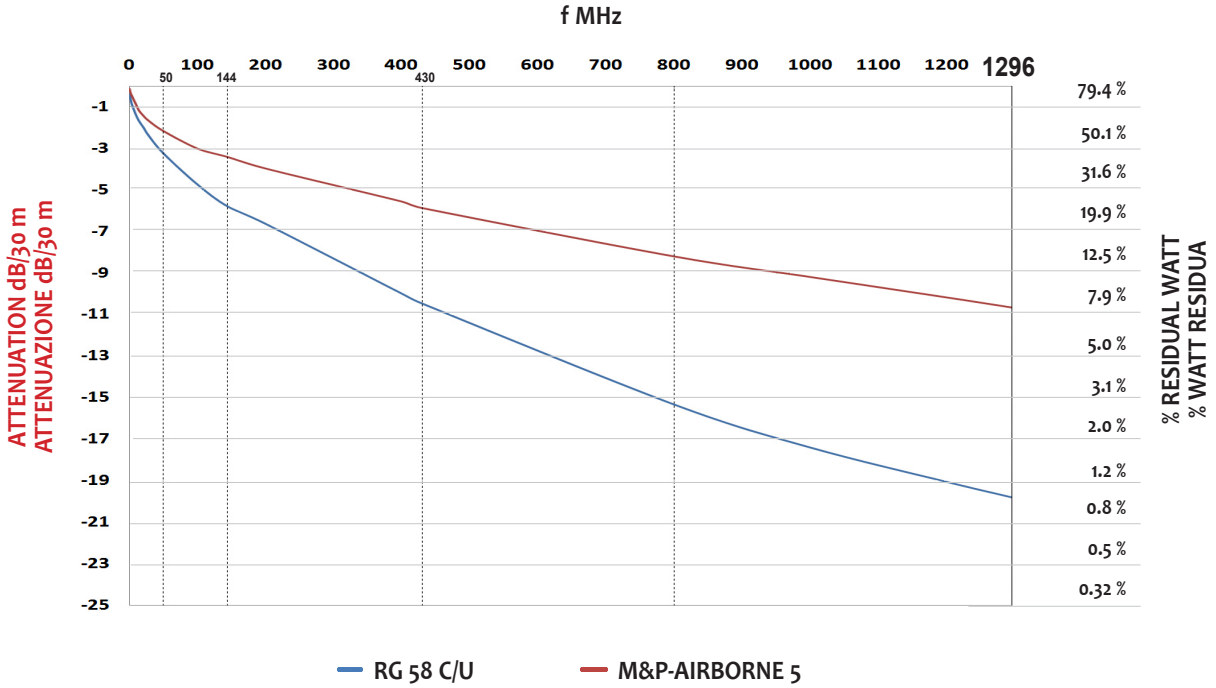
The graphs below give a clear view of the behavior of our top models on a 50 m stretch, compared to the old fashioned RG 213/U. Note that the M&P-ULTRAFLEX 7 despite being just 7.3 mm (compared with 10.3 mm of RG213/U), outclasses this old item in every parameter. Graphs can be used to calculate the power loss in any way and for any Messi & Paoloni cable. Let's take an example: Model M&P-AIRBORNE 5 Attenuation at 430 MHz 19 dB/100m.
If the cable stretch is 25m long, calculate 19 dB divided by 4 = 4.75 dB.
Let us watch on the left side of the table (dB/50m) and positioning with a ruler at the 4.75 dB position, we can observe the other end in the right column (PERCENT RESIDUAL WATT) the percentage residual output of the cable.



Example of the power loss in a 30m stretch between model M&P-AIRBORNE 5 and the traditional RG 58 C/U.



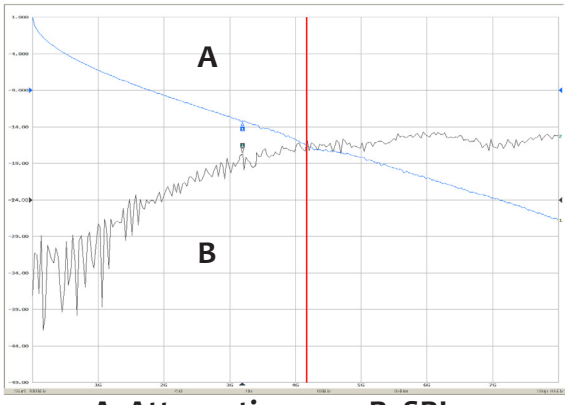
Implementation of the Messi & Paoloni research and development laboratory (Roberto Moroni) in collaboration with Marco Olivieri (IW6DCN) ARI Ancona

ATTENUATION/SRL RATIO

When designing a transmission line, it is necessary to carefully choose the cable to be used, based on the frequency and the distance between the transmitter and the antenna. We assume that the impedance matching between the various components has been treated with the utmost diligence.

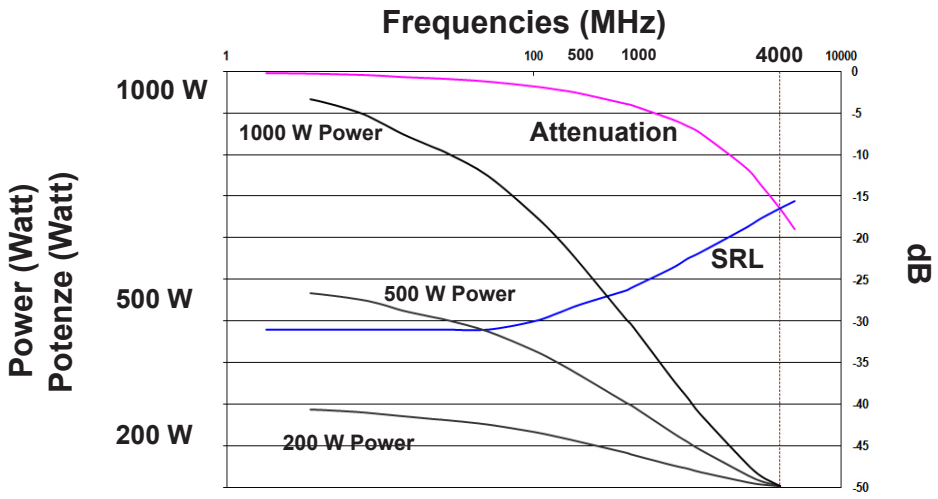
Everyone knows how important is to buy a REALLY low-loss cable, but not everyone reminds that -3dB = ½ the power available. It is also important to verify that the difference between the value of SRL and attenuation should be as wide as possible. In fact, as seen in the picture, it is inevitable that the two curves will cross each other. With increasing frequency, the attenuation curve (A) is approaching more and more to the reflected waves one (B). Comes the point where the attenuation value in dB and that of SRL meet each other. Starting from this frequency and beyond, the output signal will be ZERO, regardless of the input power value.

The example concerns a test on the cable **M&P-ULTRAFLEX 7**, (a 35 meters long coil). In these conditions the signal is **reduced to zero** at the frequency of 4.2 GHz (in transmission only). It is clearly inadvisable to use such a cable length at this frequency, but the chart clearly indicates that at all frequencies lower than 4.2 GHz, the transmission line works in an excellent manner. Increasing the cable length, inevitably increases the attenuation so that the intersection with the SRL curve, will happen before (at a lower frequency). Differently, shortening the cable length will assure a correct use at higher frequencies.



A: Attenuation **B: SRL**

In the following chart we can see how the SRL affects the power. The graph is showing a **50m long**, perfectly tuned transmission line. The cable used is **M&P-BROAD-PRO 50C**. The red curve is the attenuation, the blue curve is the SRL. The three black curves, are 3 different input powers: 200, 500 and 1000 Watts. As previously said, regardless of the input power, when the SRL dB values are equivalent to attenuation values, there is no more output signal. Please note that as soon as the SRL value increases, (for example due to an impedance mismatch), the output power quickly collapses. Although an optimal SRL (**S**tructural **R**eturn **L**oss, in simple words, attenuation on the reflected wave) is typically between -40 and -30 dB, we can say that until -18 dB there are no considerable losses. Increasing the SRL to higher values, the closer the SRL values are to 0, the more the effects evolve from troublesome to destructive. In the presence of strong SRL, (dB values close to zero), along the cable will occur overvoltage and overcurrent.



Implementation of the Messi & Paoloni research and development laboratory (Roberto Moroni) in collaboration with Marco Olivieri (IW6DCN) ARI Ancona and Stefano Magnarello (IK6EIW)

Peak Voltage

It is the maximum peak voltage applied between the conductors of the cable in order to prevent the dielectric piercing (breakdown voltage). This depends exclusively on the characteristics of the insulating dielectric.
The formula for determining the Peak Voltage is as follows: Ed * Ri * ln (Re / Ri)
Where "Ed" is the dielectric strength of the insulation, "Ri" is the inner radius of the dielectric and "Re" the outer radius.

Peak Power

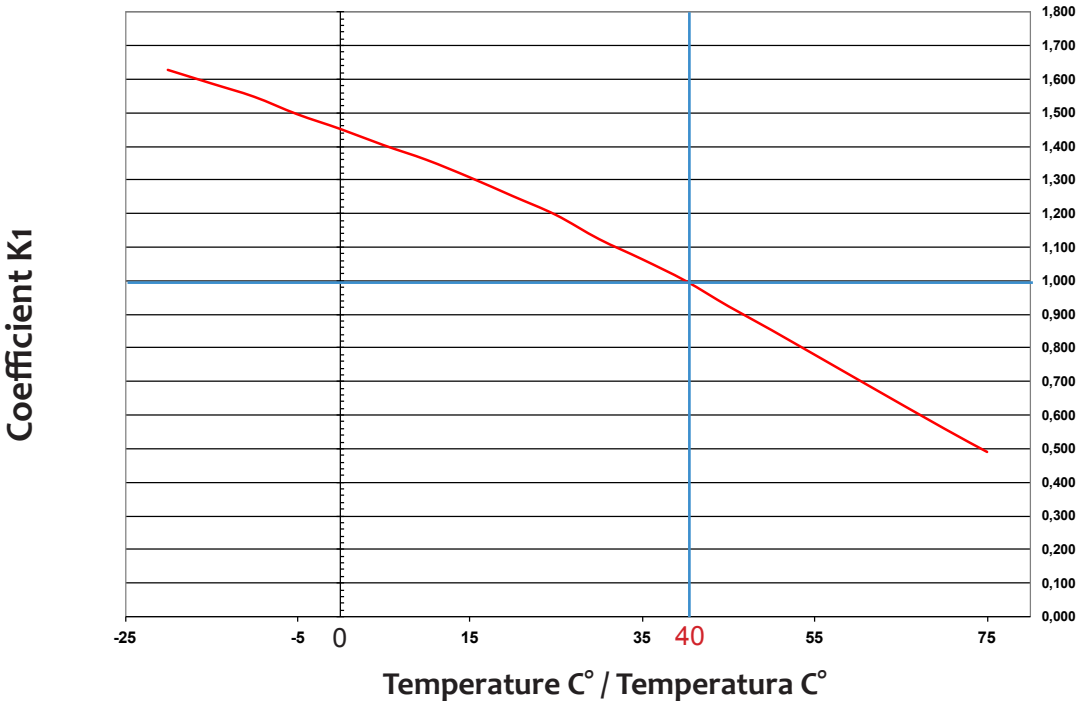
By Peak voltage and the Impedance is obtained Peak Power, which is independent from frequency.
It is calculated as: $(V \text{ peak max})^2 / (2 * Zo)$, where Zo is the impedance of the cable. This value must never be exceeded.

Power Handling

The power Handling indicates the parameters for power in which a cable can operate, depends on the characteristics of the conductors (inner / outer), but especially by the ability of the dielectric to dissipate heat. The power handling depends strongly on the frequency of use and is inversely proportional to this.
The values stated in the tab, refer to the temperature **detected on the surface of the cable** at 40 C°/104 F°(please take in consideration that when exposed to direct sunlight, the cable overheats), a VSWR of less than 1.5 and an altitude of 0-300m above sea level.
The higher is the operating temperature (ambient t.), the lower the chances to dissipate the heat generated inside the cable towards the outside. Conversely, with low temperatures the heat is easily dissipated so that the cable can operate at higher powers. See Table…

Graph N1

Temperature Factor K1 / Fattore Temperatura K1

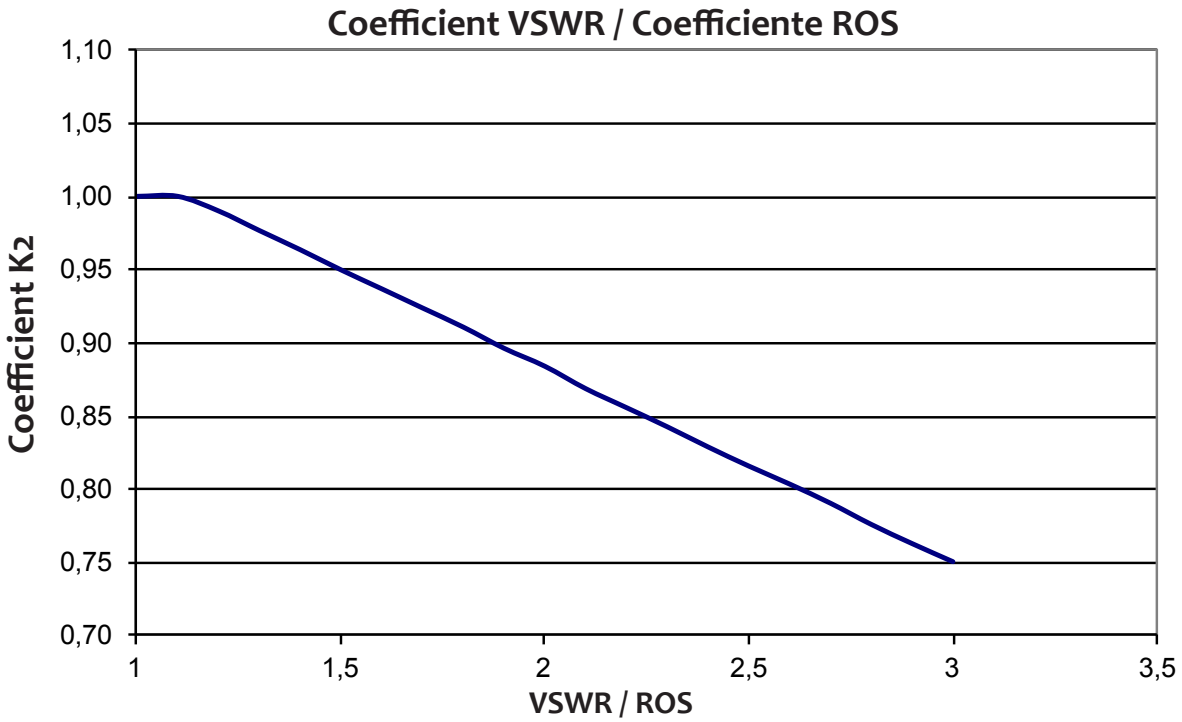


The VSWR table, has to be considered valid only for measurements taken in proximity of the antenna.

The Power Handling is calculated at the temperature of 40°C/104 F° (tested directly on the surface of the cable itself) and the variations in more or less, are leading to a decrease or increase of this value. See also all tables where this factor has been already calculated for each cable (T1,T2,T3,T4,T5,T6).

Another factor to consider, is the impedance matching of the system. If not optimal, it generates stationary waves (VSWR). At low to medium values (1 - 1.5), these do not substantially modify the power handling, but at higher values, the cable has to withstand both the incident power and the reflected one. Consequently the power handling drops. In the GRAPH 2, the coefficient K2 is obtained (VSWR), which multiplied by the value of the Power handling declared, provides the maximum allowed power for the VSWR tested in your line.

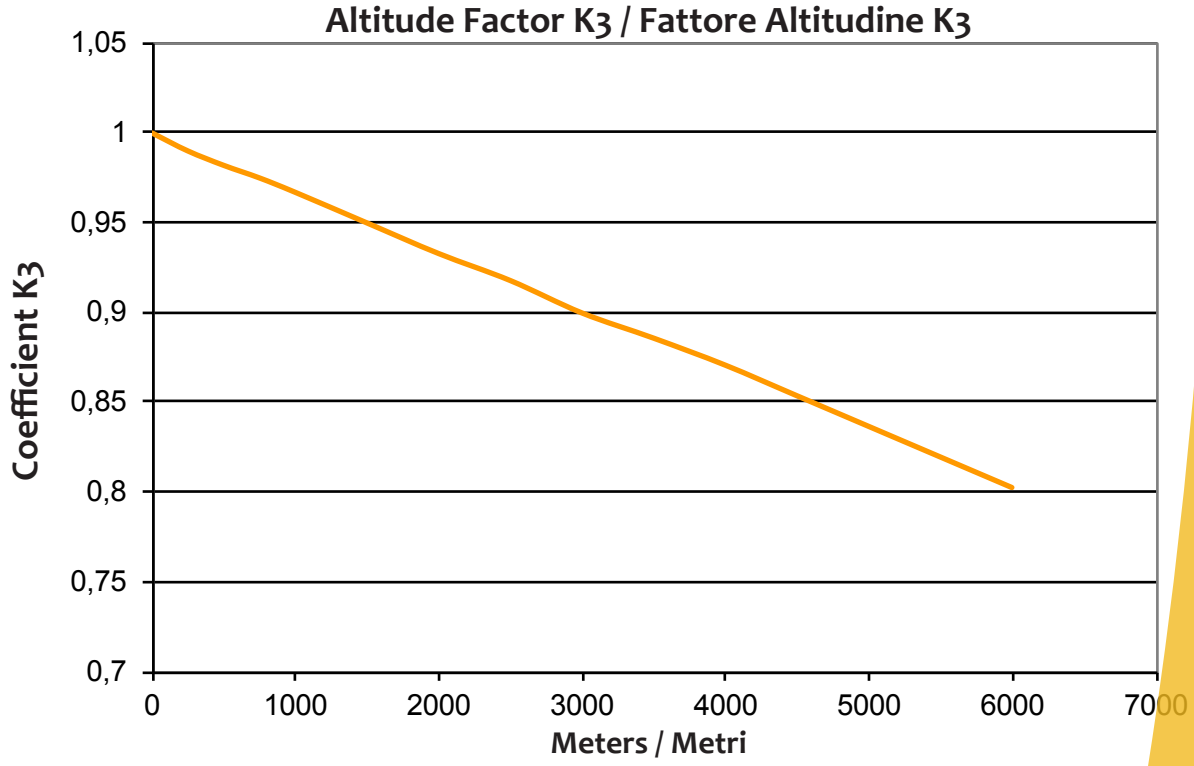
Graph N2



The VSWR table, has to be considered valid only for measurements taken in proximity of the antenna.

It's interesting to know that even the altitude interacts with this data: **the higher you climb in altitude, the more the heat dissipation decreases.** The graph N3, provides the coefficient K3 related to altitude. In order to have a given absolute figure of the power handling, you must multiply the value related to the temperature (in the Tabs T1,T2,T3,T4,T5,T6) by the factor K2 (VSWR) and the result by the factor K3 (Altitude).

Graph N3



The VSWR table, has to be considered valid only for measurements taken in proximity of the antenna.

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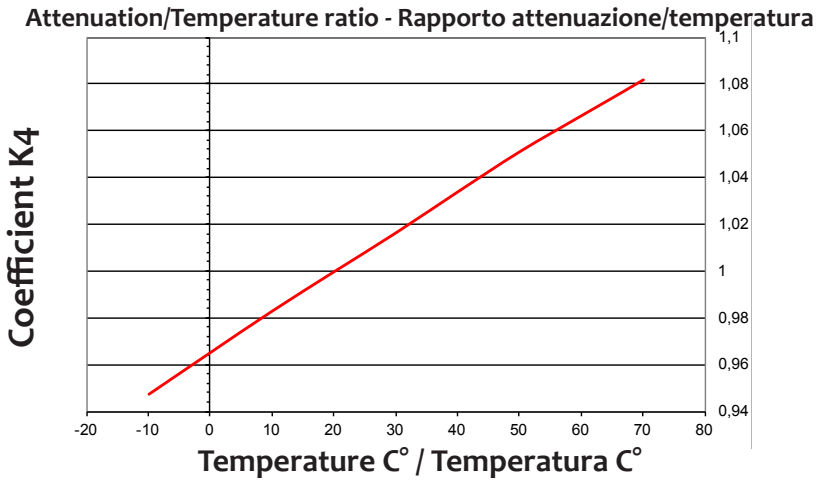
It must also be considered the type of Rx-Tx transmission (RTTY or SSB).
Physical accidental alterations and excessive VSWR values (impedance mismatch), are certainly increasing the lost power dissipated in the form of heat. Moreover unwanted stationary waves ratios, are making the situation even worse. In SSB operations a 5/6 seconds transmission time, followed by the same reception lag, is giving the chance to nearly double the power handling values. Be aware that the power should never be exceeding the declared peak power value.

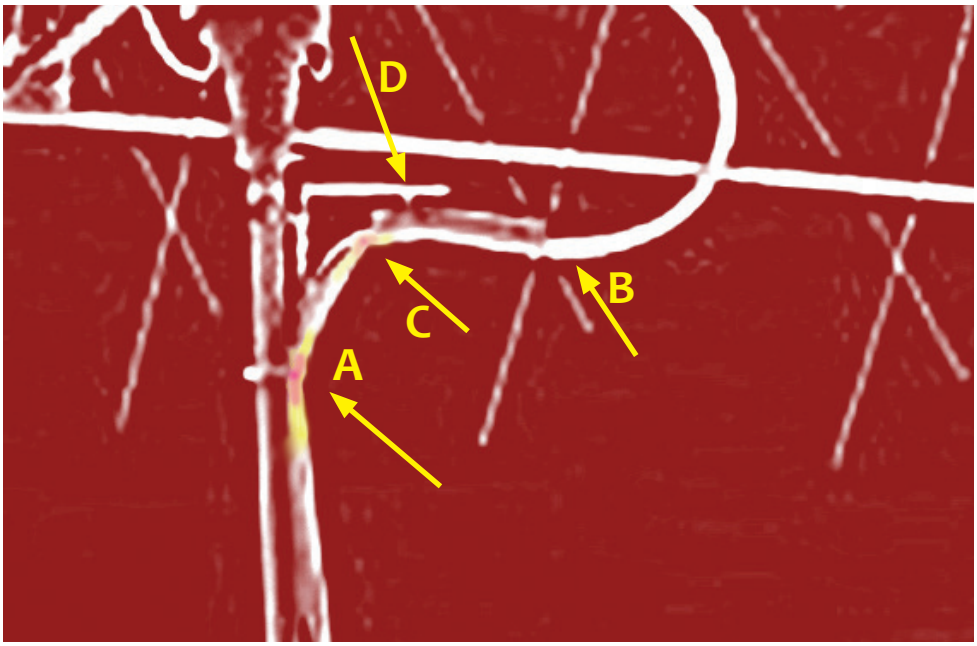
Attenuation Vs Temperature

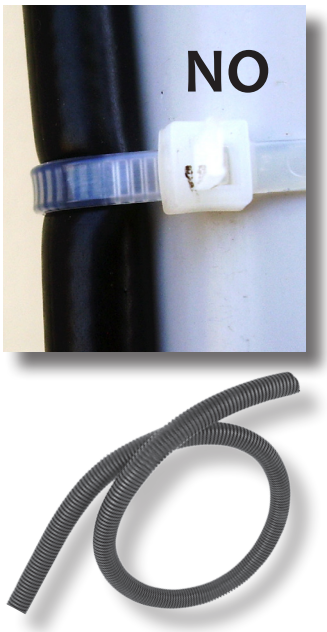
The temperature, also affects the attenuation of the cable (dB).
Also in this case, with modest temperature ranges, the variation is negligible, but if you move far away from the reference temperature (in this case 20C° / 68F°), this can lead to variations remarkable by the more scrupulous operators. If you want to know the variation of attenuation related to temperature, multiply the attenuation value by the K4 coefficient, shown in the graph 4.

Graph N4



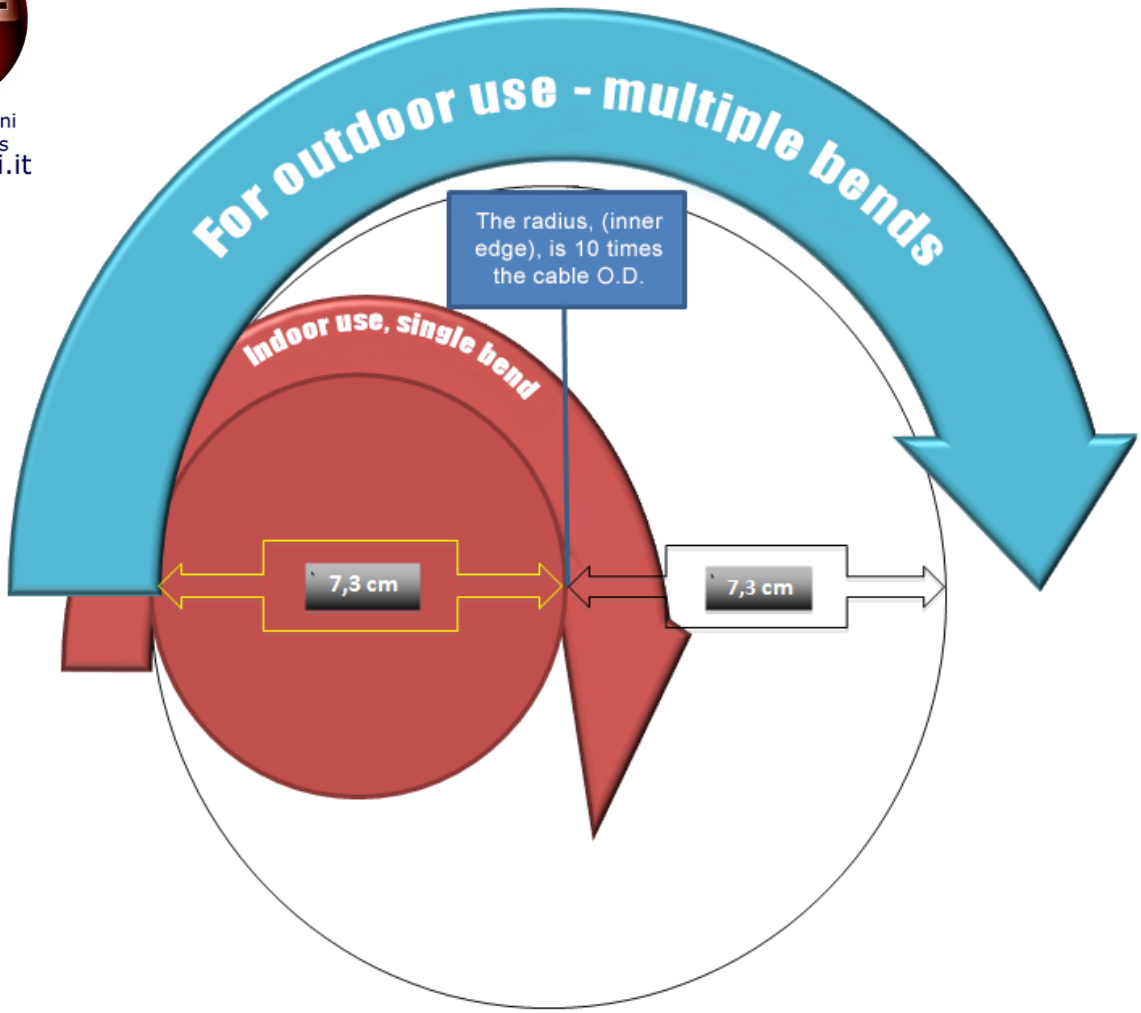
The VSWR table, has to be considered valid only for measurements taken in proximity of the antenna.





In critical situations like this, do not tie up the cable directly on the sheath. As clearly visible in the image, it is formed a constriction which rapidly deteriorates the cable and generates overheating in case of amplification (A and C). This is because the crushing of the dielectric, brings to an impedance mismatch with resulting peak of VSWR and localized heating of the cable. Instead, use an ordinary corrugated tube, tying it along the pole up to the point B, **especially securing the bracket D**, for discharging on it the same cable weight. Free to slide inside the corrugated tube, the cable will not undergo more constrictions of any kind, extending the operational life, especially with high amplifications in play.

Minimum Bending Radius



With reference to norms: IEC 60092 and CEI 11/17 we can affirm as follows:

To determine how tightly a given cable can be bent without damage, the radius of the curve of the inner edge of any bend, shall not be less than 10 times the cable Overall Diametre (O.D.). Since the radius is one half the diameter, you can then multiply your result by 2 to get the actual diameter of the object that the cable can be safely bent around repeatedly, (for example a bobbin). In DXpeditions, there is a basic need to unwind the cable and later on to rewind it in the same bobbin. (multiple bends). For this operation, needed twice per DXpedition, please consider 20 times the cable O.D. **(this will preserve your cable for a much longer number of DXpeditions)** Solid inner conductor cables, need more attention, even though we have succeeded to make them a little more flexible (M&P-BROAD-PRO 50C). The smaller the bend radius, the greater is the material flexibility. Cables such as M&P-ULTRAFLEX 7 or M&P-ULTRAFLEX 10, having a stranded inner conductor, a strong and flexible 24 spools braid, and an excellent quality PVC jacket, ALLOW MORE, but never infringe the values in the cables datasheets. (always to be taken with good sense… careful)!

The diagram above illustrates a cable with a 7,3 centimeter bend radius (M&P-ULTRAFLEX 7). When meaning Outdoor use, we intend that the variety of harsh temperatures we could have outside, might change temporarily the physics of the cable components, requiring therefore more cautiousness. (20 times O.D.)

In case we need to effect a sharper bend, (ex. Like in a choke), we can do only if:

1) **We shall effect Just a single bend (possibly always indoor)**
2) The operation is made at temperatures never below 15° C . (59° F)
3) The cable is coiled over a Cylinder with an O.D. equal or bigger than ten times the cable O.D.

The Q CODE FOR HAM RADIO OPERATORS

Source: **Dario Grossi** (IZ4UEZ) ARI Ferrara

SIGNAL Q	QUESTION ?	ANSWER, NOTICE OR ORDER
QRA	What is the name of your station?	My name is ...
QRB	How far approximately are you from my station?	The distance between our stations is about...your nautical miles (or kilometers).
QRG	What is my exact frequency?	Your exact frequency is ... kHz (Or MHz).
QRK	What is the intelligibility of my signals	The intelligibility of your signals is ... (scale of 1 to 5).
QRL	Are you busy?	I'm busy Please do not interfere.
QRM	Are you bothered by noise?	I am disturbed by interference.
QRN	Are you bothered by noise of natural origin (storms, lightning)?	I am disturbed by natural origin noise
QRO	Shall I increase transmitter power?	Increase (or increase) the transmission power.
QRP	Shall I decrease transmitter power?	Decrease the transmission power.
QRQ	Shall I send faster?	Increase the transmission speed [... Words per minute].
QRS	Shall I send more slowly?	Send more slowly [... Words per minute].
QRT	Shall I stop transmissions?	Close (or I close) transmissions.
QRV	Are you ready?	I'm ready.
QRX	When you call me again?	I'll get back at ... on ... kHz (or MHz).
QRZ	Who is calling me?	You are called by ... on ... kHz (or MHz).
QSA	What is the strength of my signals	The strength of your signals is ... (Scale from 1 to 5).
QSB	Does my signal strength fade?	The strength of your signals varies.
QSK	Can you hear me? If so, can I interrupt you?	I hear you, speak up.
QSL	Can you receive?	Confirmed, received.
QSO	Can you communicate with ... directly or through support?	I can communicate with ... directly NOTE: It is also synonymous of direct communication or direct connection.
QSP	Will you transmit to...?	I'll transmit back to....
QSY	Should I change my transmission to another frequency?	Change transmission to another frequency.
QTH	What is your position	My position is ..... : QTH generally describes the place from which you are transmitting.
QTR	What time is it ?	It's ...

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COMPARISON CHART
ATTENUATION/POWER RATIO

TABELLE COMPARAZIONE
RAPPORTO ATTENUAZIONE/POTENZA

Residual Watts related to frequency and calculated on **1000 Watt** input power.
Watt residui in rapporto alla frequenza e calcolati su una potenza in ingresso di **1000 Watt**.

RG 213/U		
FREQ. MHz	Attenuations Attenuazioni dB/50 m	Residual WATT/50m
1,8	0,49	893
3,5	0,74	843
7	1,05	758
10	1,1	757
14	1,2	745
21	1,3	724
28	1,53	695
50	2,0	630
100	3,1	489
144	3,7	426
200	4,45	358
400	6,6	218
430	7,01	199
800	9,9	102
1000	11,6	48
1296	14,0	39

M&P-BROAD-PRO 50C		
FREQ. MHz	Att. dB/50 m	Residual WATT/50m
1,8	0,3	928
3,5	0,4	907
7	0,54	883
10	0,6	871
14	0,69	852
21	0,87	817
28	0,96	800
50	1,22	754
100	1,76	667
144	2,1	611
200	2,55	556
400	3,65	431
430	3,8	417
800	5,3	295
1000	6,0	250
1296	6,9	204
2400	9,9	102

M&P-ULTRAFLEX 10		
FREQ. MHz	Attenuations Attenuazioni dB/50 m	Residual WATT/50m
1,8	0,21	952
3,5	0,29	935
7	0,44	903
10	0,56	879
14	0,73	845
21	0,9	812
28	1,03	788
50	1,38	727
100	1,99	632
144	2,42	572
200	2,88	515
400	4,17	382
430	4,34	368
800	6,14	243
1000	7,0	199
1296	8,0	158
2400	12,4	57,5

M&P-ULTRAFLEX 7		
FREQ. MHz	Attenuations Attenuazioni dB/50 m	Residual WATT/50m
1,8	0,3	896
3,5	0,45	863
7	0,8	832
10	0,9	803
14	1,05	776
21	1,3	741
28	1,5	708
50	2,0	630
100	2,9	512
144	3,45	451
200	4,1	389
400	5,9	257
430	6,15	242
800	8,55	139
1000	9,65	108
1296	11,2	75

M&P-AIRBORNE 5		
FREQ. MHz	Attenuations Attenuazioni dB/30 m	Residual WATT/30m
1,8	0,33	926
3,5	0,44	902
7	0,69	853
10	0,89	813
14	1,17	763
21	1,43	718
28	1,65	683
50	2,15	608
100	3,0	501
144	3,40	456
200	3,96	401
400	5,55	278
430	5,86	259
800	8,19	151
1000	9,18	120
1296	10,65	86

RG 58 C/U		
FREQ. MHz	Attenuations Attenuazioni dB/30 m	Residual WATT/30m
1,8	0,63	864
3,5	0,87	818
7	1,17	763
10	1,41	722
14	1,68	679
21	2,01	629
28	2,37	579
50	3,24	474
100	4,74	335
144	5,79	263
200	6,63	217
400	9,99	100
430	10,47	89
800	15,33	29
1000	17,4	18
1296	19,8	10

Fonte / Source: **M&P Lab.** Roberto Moroni

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CONVERSION CHART
VSWR/REFLECTED POWER

TABELLE CONVERSIONE
ROS/POTENZA RIFLESSA

VOLTAGE STANDING WAVE RATIO (VSWR) RAPPORTO ONDE STAZIONARIE (ROS)	VSWR (dB)	SRL STRUCTURAL RETURN LOSS (dB) PERDITE CUMULATIVE DI RIFLESSIONE	REFLECTED POWER (%) POTENZA RIFLESSA	TRANSMISSION LOSS (dB) PERDITA DI TRASMISSIONE	TRANSMITTED POWER (%) POTENZA TRASMESSA	MODELS M&P-BROAD-PRO 50C M&P-ULTRAFLEX 10 M&P-ULTRAFLEX 13/.500" M&P-ULTRAFLEX 7 M&P-AIRBORNE 5 M&P-AIRBORNE 10
1	0	∞	0	0	100	from 300 KHz to 450 MHz
1,1	0,83	26,44	0,227	0,01	99,773	
1,2	1,58	20,83	0,826	0,036	99,174	from 450MHz to 1 GHz
1,3	2,28	17,69	1,7	0,075	98,3	from 1 GHz to 2 Ghz
1,4	2,92	15,56	2,78	0,122	97,22	
1,5	3,52	13,98	4	0,177	96	
1,6	4,08	12,74	5,33	0,238	94,67	
1,7	4,61	11,73	6,72	0,302	93,28	
1,8	5,11	10,88	8,16	0,37	91,84	
1,9	5,58	10,16	9,6	0,44	90,4	
2	6,02	9,54	11,1	0,512	88,9	
2,1	6,44	9	12,6	0,584	87,4	
2,2	6,85	8,52	14,1	0,658	85,9	
2,3	7,23	8,09	15,5	0,732	84,5	
2,4	7,6	7,71	17	0,807	83	
2,5	7,96	7,36	18,4	0,881	81,6	
2,6	8,3	7,04	19,8	0,956	80,2	
2,7	8,63	6,76	21,1	1,03	78,9	
2,8	8,94	6,49	22,4	1,1	77,6	
2,9	9,25	6,25	23,7	1,18	76,3	
3	9,54	6,02	25	1,25	75	
3,2	10,1	5,62	27,4	1,39	72,6	
3,4	10,6	5,26	29,8	1,53	70,2	
3,6	11,1	4,96	31,9	1,67	68,1	
3,8	11,6	4,68	34	1,81	66	
4	12	4,44	36	1,94	64	
5	14	3,52	44,4	2,55	55,6	
6	15,6	2,92	51	3,1	49	
7	16,9	2,5	56,3	3,59	43,8	
8	18,1	2,18	60,5	4,03	39,5	
9	19,1	1,94	64	4,44	36	
10	20	1,74	66,9	4,81	33,1	

Fonte / Source: **Dario Grossi** (IZ4UEZ) ARI Ferrara, implementation **M&P Lab.**

Messi & Paoloni
coaxial cables
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CONVERTION TABLE
DECIBEL-VOLT-WATT (50 Ohm)

dBm	V	Po
+ 53	100.0	200 W
+ 50	70.7	100 W
+ 49	64.0	80 W
+ 48	58.0	64 W
+ 47	50.0	50 W
+ 46	44.5	40 W
+ 45	40.0	32 W
+ 44	32.5	25 W
+ 43	32.0	20 W
+ 42	28.0	16 W
+ 41	26.2	12.5 W
+ 40	22.5	10 W
+ 39	20.0	8 W
+ 38	18.0	6.4 W
+ 37	16.0	5 W
+ 36	14.1	4 W
+ 35	12.5	3.2 W
+ 34	11.5	2.5 W
+ 33	10.0	2 W
+ 32	9.0	1.6 W
+ 31	8.0	1.25 W

dBm	V	Po
+ 30	7.10	1.0 W
+ 29	6.40	800 mW
+ 28	5.80	640 mW
+ 27	5.00	500 mW
+ 26	4.45	400 mW
+ 25	4.00	320 mW
+ 24	3.55	250 mW
+ 23	3.20	200 mW
+ 22	2.80	160 mW
+ 21	2.52	125 mW
+ 20	2.25	100 mW
+ 19	2.00	80 mW
+ 18	1.80	64 mW
+ 17	1.60	50 mW
+ 16	1.41	40 mW
+ 15	1.25	32 mW
+ 14	1.15	25 mW
+ 13	1.00	20 mW
+ 12	0.90	16 mW
+ 11	0.80	12.5 mW
+ 10	0.71	10 mW

dBm	V	Po
+ 9	0.64	8 mW
+ 8	0.58	6.4 mW
+ 7	0.500	5 mW
+ 6	0.445	4 mW
+ 5	0.400	3.2 mW
+ 4	0.355	2.5 mW
+ 3	0.320	2.0 mW
+ 2	0.280	1.6 mW
+ 1	0.252	1.25 mW
0	0.225	1.0 mW
- 1	0.200	0.80 mW
- 2	0.180	0.64 mW
- 3	0.160	0.50 mW
- 4	0.141	0.40 mW
- 5	0.125	0.32 mW
- 6	0.115	0.25 mW
- 7	0.100	0.20 mW
- 8	0.090	0.16 mW
- 9	0.080	0.125 mW
- 10	0.071	0.10 mW

Abbreviations used in the HAM RADIO service

AR: End of message
BK: "Break" Signal used to interrupt a transmission in progress
CQ: Calling all stations
CW: "Continuous Wawe" continuous wave telegraphy
DE: Used to take apart the ID. from the station
K: Invitation to transmit
MSG: Message
PSE: "Please"
RTD: intelligibility, signal strength, tone
R: Received
RX: Receiver
SIG: Signal
SK: End of QSO (or even "Silent Key" = passage to a better life)
TNX: Thanks
TX: Transmitter
UR: Your
VA: end of work

Source : **Dario Grossi** (IZ4UEZ) ARI Ferrara

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DEFINITIONS OF THE ELECTRICAL FEATURES OF A CABLE

CAPACITY:

The capacity of a cable is the value that indicates the properties of the dielectric to store electrical charges between the central conductor and the screen.
The capacity is expressed in pF (picofarad, 1 pF = $1x10^{-12}$ F). The higher is the capacity the more high frequencies are attenuated along the cable. So the **best cable** is the one that has the **lowest capacity**.
(at the same impedance).

IMPEDANCE:

It indicates the opposition of a transmission line to the flow of electrons, it is expressed in Ohms and is derived from the relation between the voltage V and the current I at any point of the coaxial cable.

ATTENUATION:

It quantifies the loss of signal and is expressed in dB (Decibels). In reception and transmission (power) the attenuation is given by $10x\log_{10} (P_{in} / P_{out})$. **The signal is halved every 3 dB.**

SRL - STRUCTURAL RETURN LOSS:

It measures the intensity of reflected waves (toward the source) inside the cable. The SRL is highly affected by the imperfections of the impedance in one or more points along the transmission line.

SCREENING EFFICIENCY:

It generally indicates the ability of a screen to prevent electromagnetic interference, which can "contaminate" the signal along the cable and vice versa that the signal could be radiated outside of the cable. At high frequencies (> 30 MHz), this is expressed in **"Screening Attenuation" (SA)** and the unit of measurement is the decibel. At low frequencies (< 30 MHz), it's called **transfer impedance (Zt)** and it is expressed in mOhm/m.
The lower is the value in milliohms, the better is the cable performance.
In the old RG cables, the maximum screening efficiency obtained is 80 dB, while in our new cables is >105 dB (A++ CLASS).
The Zt in the old RG cables does not drop below 13 mΩ/m (RG 214), compared to 0.9 mΩ/m of our new cables:

- **M&P-BROAD-PRO 50C and M&P-BROAD-PRO 50C** Double Jacket
- **M&P-ULTRAFLEX 13/.500" and M&P-HYPERFLEX 13/.500"**
- **M&P-ULTRAFLEX 10**
- **M&P-HYPERFLEX 10**
- **M&P-ULTRAFLEX 7**
- **M&P-AIRBORNE 5**
- **M&P-HYPERFLEX 5**
- **M&P-AIRBORNE 10**

VELOCITY RATIO:

It's the speed which the signal travels at, along the cable, and it is expressed as a percentage of the light speed. In the cables with plain polyethylene, the best value reached is 66%, against the 85% of the cables with foamed polyethylene dielectric.

Source : M&P Lab. (**Roberto Moroni**)

- STANDARD PACKAGING -

MODEL	Quick description	Overall size over the jacket	Type of packaging	First value Ø Flange Second value inner flange to flange Third value Ø inner tube (bobbin)	Packing CODE	Meters per packing	Gross weight per packing unit
RG 58 C/U	In compliance with MIL-C17-F military specification	Ø 5 mm 0,197 inches	Shrinkwrapped coil. Suitable for Arianna unwinder		AR100	100	3,75 Kg
RG 58 C/U			Shrinkwrapped coil. Suitable for Arianna unwinder		AR200	200	7,45 Kg
RG 58 C/U			Plastic bobbin	mm. 345x165x130 Hole Ø 45	B500	500	19,26 Kg
RG 58 C/U			Plastic bobbin	mm. 345x325x130 Hole Ø 45	B1000	1000	37,78 Kg
RG 58 C/U			Wooden drum	mm. 500x360x160 Hole Ø 80	B2000	2000	77,35 Kg
M&P-AIRBORNE 5	**Evolution** For DXers 5mm cables: Performant waterproof lightweight	Ø 5 mm 0,197 inches	Shrinkwrapped coil. Suitable for Arianna unwinder		AR100	100	2,40 Kg
M&P-AIRBORNE 5			Shrinkwrapped coil. Suitable for Arianna unwinder		AR200	200	4,75 Kg
M&P-AIRBORNE 5			Plastic bobbin	mm. 345x165x130 Hole Ø 45	B500	500	12,51 Kg
M&P-AIRBORNE 5			Plastic bobbin	mm. 345x325x130 Hole Ø 45	B1000	1000	24,28 Kg
M&P-AIRBORNE 5			Wooden drum	mm. 500x360x160 Hole Ø 80	B2000	2000	50,35 Kg
M&P-HYPERFLEX 5	**Evolution** The best cable available in the 5mm range for attenuations and extreme flexibility	Ø 5,4 mm 0,212 inches	Shrinkwrapped coil. Suitable for Arianna unwinder		AR100	100	4,2 Kg
M&P-HYPERFLEX 5			Shrinkwrapped coil. Suitable for Arianna unwinder		AR200	200	8,4 Kg
M&P-HYPERFLEX 5			Plastic bobbin	mm. 345x165x130 Hole Ø 45	B400	400	17,56 Kg
M&P-HYPERFLEX 5			Plastic bobbin	mm. 345x325x130 Hole Ø 45	B800	800	34,38 Kg
M&P-HYPERFLEX 5			Wooden drum	mm. 500x360x160 Hole Ø 80	B2000	2000	87,35 Kg
M&P-ULTRAFLEX 7	**Evolution** For DXers 7mm cables: Performant lightweight ultraflexible	Ø 7,3 mm 0,287 inches	Shrinkwrapped coil. Suitable for Arianna unwinder		AR50	50	3,50 Kg
M&P-ULTRAFLEX 7			Shrinkwrapped coil. Suitable for Arianna unwinder		AR100	100	6,95 Kg
M&P-ULTRAFLEX 7			Plastic bobbin	mm. 345x165x130 Hole Ø 45	B200	200	14,56 Kg
M&P-ULTRAFLEX 7			Plastic bobbin	mm. 345x325x130 Hole Ø 45	B500	500	35,28 Kg
M&P-ULTRAFLEX 7			Wooden drum	mm. 500x360x160 Hole Ø 80	B1000	1000	72,35 Kg
M&P-ULTRAFLEX 7			Wooden drum	mm. 750x335x210 Hole Ø 70	B2000	2000	150,8 Kg
M&P-ULTRAFLEX 10	**Evolution** of 10mm cables: ultraflexible High performances	Ø 10,3 mm 0,405 inches	Shrinkwrapped coil.		T50	50	6,56 Kg
M&P-ULTRAFLEX 10			Plastic bobbin	mm. 345x165x130 Hole Ø 45	B100	100	13,76 Kg
M&P-ULTRAFLEX 10			Plastic bobbin	mm. 345x325x130 Hole Ø 45	B200	200	26,78 Kg
M&P-ULTRAFLEX 10			Wooden drum	mm. 500x360x160 Hole Ø 80	B500	500	68,35 Kg
M&P-ULTRAFLEX 10			Wooden drum	mm. 750x335x210 Hole Ø 70	B1000	1000	142,8 Kg
M&P-HYPERFLEX 10	**Evolution** Best in its class (10.3mm cables) for flexibility and amazing attenuations, sturdy and lightweight	Ø 10,3 mm 0,405 inches	Shrinkwrapped coil.		T50	50	5,6 Kg
M&P-HYPERFLEX 10			Plastic bobbin	mm. 345x165x130 Hole Ø 45	B100	100	11,86 Kg
M&P-HYPERFLEX 10			Plastic bobbin	mm. 345x325x130 Hole Ø 45	B200	200	23 Kg
M&P-HYPERFLEX 10			Wooden drum	mm. 500x360x160 Hole Ø 80	B500	500	58,9 Kg
M&P-HYPERFLEX 10			Wooden drum	mm. 750x335x210 Hole Ø 70	B1000	1000	123,8 Kg
M&P-BROAD-PRO 50C	**Evolution** of 10mm cables: semi-flexible Very high perform.	Ø 10,3 mm 0,405 inches	Shrinkwrapped coil.		T50	50	6,56 Kg
M&P-BROAD-PRO 50C			Plastic bobbin	mm. 345x165x130 Hole Ø 45	B100	100	13,76 Kg
M&P-BROAD-PRO 50C			Plastic bobbin	mm. 345x325x130 Hole Ø 45	B200	200	26,78 Kg
M&P-BROAD-PRO 50C			Wooden drum	mm. 500x360x160 Hole Ø 80	B500	500	68,35 Kg
M&P-BROAD-PRO 50C			Wooden drum	mm. 750x335x210 Hole Ø 70	B1000	1000	142,8 Kg
BROAD-PRO 50C LSZH	black LSZH jacket	Ø 10,3 mm	Wooden drum	mm. 750x335x210 Hole Ø 70	B1000	1000	154,8 Kg
M&P-AIRBORNE 10	**Evolution** Extraordinary performance, 45% lighter. For optimal DXpedition duty. Waterproof	Ø 10,3 mm 0,405 inches	Shrinkwrapped coil.		T50	50	3,5 Kg
M&P-AIRBORNE 10			Plastic bobbin	mm. 345x165x130 Hole Ø 45	B100	100	7,8 Kg
M&P-AIRBORNE 10			Plastic bobbin	mm. 345x325x130 Hole Ø 45	B200	200	14,8 Kg
M&P-AIRBORNE 10			Wooden drum	mm. 500x360x160 Hole Ø 80	B500	500	38,35 Kg
M&P-AIRBORNE 10			Wooden drum	mm. 750x335x210 Hole Ø 70	B1000	1000	82,8 Kg
M&P-BROAD-PROC 50	For Underground Laying with flooding.	Ø 12,4 mm 0,488 inches	Wooden drum	mm. 500x360x160 Hole Ø 80	B400	400	71,35 Kg
Double Jacket							
M&P-BROAD-PROC 50			Wooden drum	mm. 750x335x210 Hole Ø 70	B800	800	148,8 Kg
M&P-ULTRAFLEX 13 and M&P-HYPERFLEX 13	Half inch but Very flexible	Ø 12,7 mm 0,5 inches	Shrinkwrapped coil.		AR25	25	4,35 Kg
			Shrinkwrapped coil.		AR50	50	8,7 Kg
			Plastic bobbin.	mm. 400x230x200 Hole Ø 65	B100	100	20,4 Kg
			Wooden drum	mm. 500x360x160 Hole Ø 80	B300	300	55,5 Kg
			Wooden drum	mm. 750x335x210 Hole Ø 70	B800	800	152 Kg

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Unwinders are sold separately.

EXCELLENT QUALITY PROFESSIONAL CONNECTORS

Extensively tested by our laboratory they have shown, due to their high build quality, very low VSWR levels and impedance alteration.
(Referring to models with *) - For step to step assembly instructions please visit our website.

*C.N.UF13.MSL

"N" type male solderless

M&P-ULTRAFLEX 13

*C.UHF.UF13.MSL

"UHF" type male solderless

M&P-ULTRAFLEX 13

*C.N.BROAD50DJ-MS

"N" typr male soldering

M&P-BROAD-PRO 50/C Double Jacket

*C.N.BROAD50-M

"N" type male soldering

M&P-BROAD-PRO 50/C
and Double Jacket
M&P-ULTRAFLEX 10
M&P-AIRBORNE 10
M&P-HYPERFLEX 10
RG 214 A/U
RG 213/U

*C.UHF.BROAD50-M

"UHF" type male soldering

M&P-BROAD-PRO 50/C
and Double Jacket
M&P-ULTRAFLEX 10
M&P-AIRBORNE 10
M&P-HYPERFLEX 10
RG 214 A/U
RG 213/U

C.BROAD.PL259-A

"UHF" type male soldering

M&P-BROAD-PRO 50/C
and Double Jacket
M&P-ULTRAFLEX 10
M&P-AIRBORNE 10
M&P-HYPERFLEX 10
RG 214 A/U
RG 213/U

*C.BNC.BROAD50-M

"BNC" type male soldering

M&P-BROAD-PRO 50/C
and Double Jacket
M&P-ULTRAFLEX 10
M&P-AIRBORNE 10
M&P-HYPERFLEX 10
RG 214 A/U
RG 213/U

*C.TNC.BROAD50-M

"TNC" type male soldering

M&P-BROAD-PRO 50/C
and Double Jacket
M&P-ULTRAFLEX 10
M&P-AIRBORNE 10
M&P-HYPERFLEX 10
RG 214 A/U
RG 213/U

*C.N.AC5F-S

"N" type female soldering

M&P-AIRBORNE 5
RG 58 C/U

*C.N.AC5M-S

"N" type male soldering

M&P-AIRBONE 5
RG 58 C/U

*C.N.HF5M-S

"N" type male soldering

M&P-HYPERFLEX 5

*C.BNC.AC5M-S

"BNC" type male soldering

M&P-AIRBONE 5
M&P-HYPERFLEX 5
RG 58 C/U

*C.TNC.AC5M-S

"TNC" type male soldering

M&P-AIRBONE 5
RG 58 C/U

*C.UHF.AC5M-S

"UHF" type male soldering

M&P-AIRBONE 5
M&P-HYPERFLEX 5
RG 58 C/U

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"N" type female soldering

M&P-ULTRAFLEX 7

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"N" type male soldering

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M&P-ULTRAFLEX 7

QUALITY STANDARD IS OUR PHILOSOPHY
EXCELLENCE IN PRODUCTION IS OUR MISSION

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