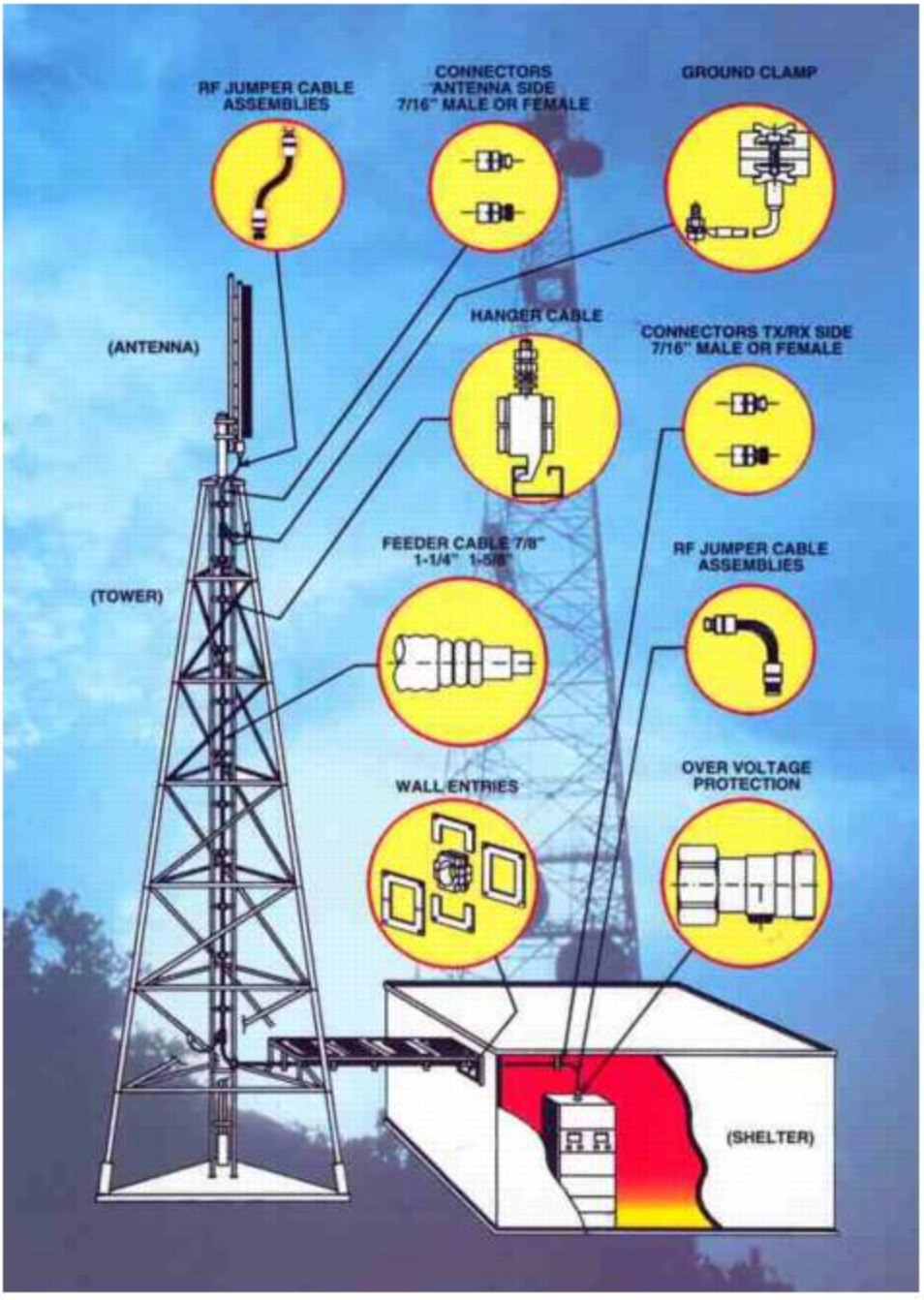
RF COMPONENTS



cpe italia

CPE ITALIA S.p.A. - Componenti Professionali per l'Elettronica

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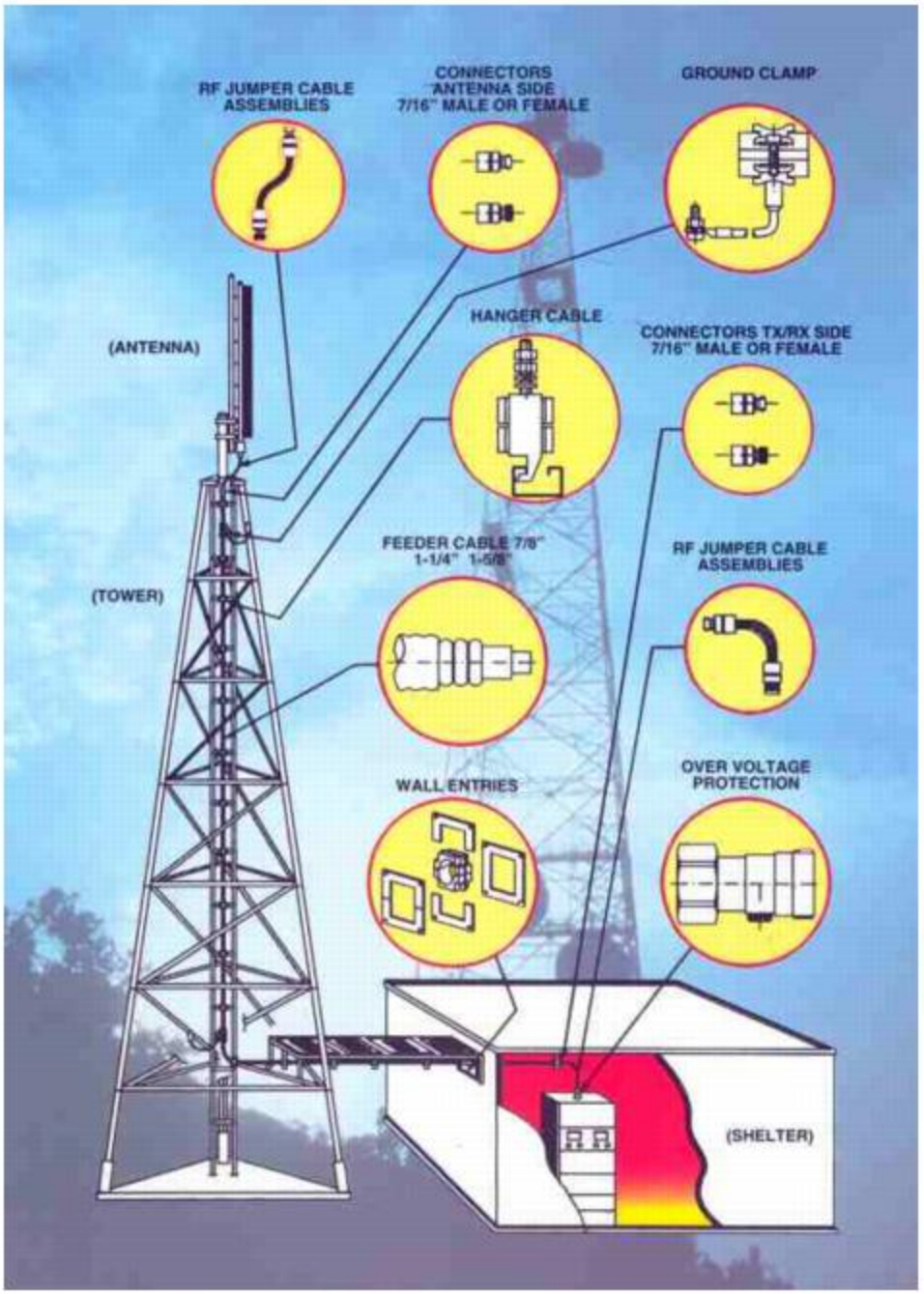
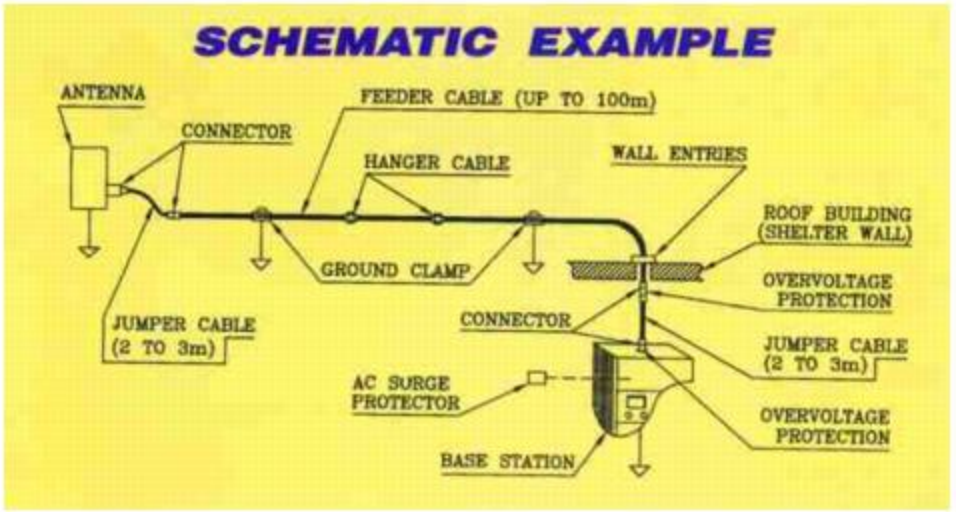
BASE STATION: GSM-UMTS-VHF-UHF-FM





CPE Italia can supply all what it is necessary to set-up a correct RF link between antenna and base station in telecommunication systems (GSM, radio link, broadcast, military, etc.) with the guarantee of maximum performances for:

- Low RF loss
- Low VSWR
- Feeder cables
- Connectors
- Shielding
- RF emission
- Overvoltage protection
- Lighting protection
- Rugged construction

This thanks to the high electromechanical characteristics of the components confirmed by the optimum results of the test that were carried out on:

- Connectors intermodulation products
- Saline atmosphere
- Lightning
- Burn-in
- Shock/vibration

obtained by strict quality controls during the manufacturing process and the good material employed.

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N COAXIAL CONNECTORS

N connector is probably the most used connector in the telecommunication field, since many years, for general applications in carring RF signals, with high reliability, between equipments and inside them.
CPE Italia has developed a line of N connectors for a large range of RF coaxial cables, from the **semirigid** and **flexible** up to the **corrugated** copper tube types (medium and large size) mainly used to interconnect equipments and for feeder line, all with good electrical characteristics up to 10 GHz.
For all cables entry versions is with solder center contact and clamp, crimp, or solder outer contact, to fulfill the different user necessities, except for the corrugated types cables, where the interconnection is completely done by direct soldering of the connector body and the inner contact onto the cable due to the fact that for the "base station" of radiotelephone digital cellular network the elimination of intermodulation products is of the utmost importance.
Specific connectors for the "**hiflex**" corrugated cable, having the possibility to be assembled with no soldering parts and with electrical performances in agree with the custom request, have been also developed to solve some installation problems.

"N" TYPE CONNECTORS			
FOAM DIELECTRIC CABLES	**PLUG**		**JACK**
	STRAIGHT	RIGHT ANGLE	STRAIGHT
1/4" FOAM SOLDER	20.300.191-324	20.300.391-325	20.300.091-323
3/8" FOAM SOLDER	20.300.191-317	20.300.391-318	20.300.091-319
1/2" FOAM SOLDER	20.300.191-314	20.300.391-313	20.300.091-315
1/2" FOAM SOLDER	20.300.130-043		20.300.030-044
7/8" FOAM CLAMP	20.300.130-048		20.300.030-047
1 1/4" FOAM CLAMP	20.300.130-049		20.300.030-050
1 5/8" FOAM CLAMP	20.300.130-080		20.300.030-081

7/16 connector is one of the most popular connector in telecommunication systems. In fact it is widely used in the "feeders line" to guarantee the greatest reliability in the interconnection between transmission equipments and antennas and between antennas, in the array systems, thanks to his mechanical ruggedness toghether with high electrical performances up to 5 GHz.
CPE Italia has designed a complete line of types to fulfill all user needs. Connectors for RF cables employed in telecommunication systems, with very low VSWR to optimize feeder and jumper cables performances are available, with very low intermodulation products values, well knowing the importance of this parameter in the multi-channel/transmitter configurations services.

Moreover for the largerly used 1/4", 3/8", and 1/2" coaxial cables "**monolithic**" connectors have been designed in order to avoid intermodulation products normally caused by mechanically most complex connectors.
Finally to solve one problem oftein arising during installation, connectors with direct assembly onto the cables, with no soldering parts, always asuring good electrical characteristics are availables.

"7/16" TYPE CONNECTORS			
FOAM DIELECTRIC CABLES	**PLUG**		**JACK**
	STRAIGHT	RIGHT ANGLE	STRAIGHT
1/4" FOAM SOLDER	20.500.131-280	20.500.331-274	20.500.031-276
3/8" FOAM SOLDER	20.500.131-281	20.500.330-338	20.500.031-277
1/2" FOAM CLAMP	20.500.130-061		20.500.030-062
7/8" FOAM CLAMP	20.500.130-073		20.500.030-074
1 1/4" FOAM CLAMP	20.500.130-071		20.500.030-075
1 5/8" FOAM CLAMP	20.500.130-072		20.500.030-076

CABLES CLAMP

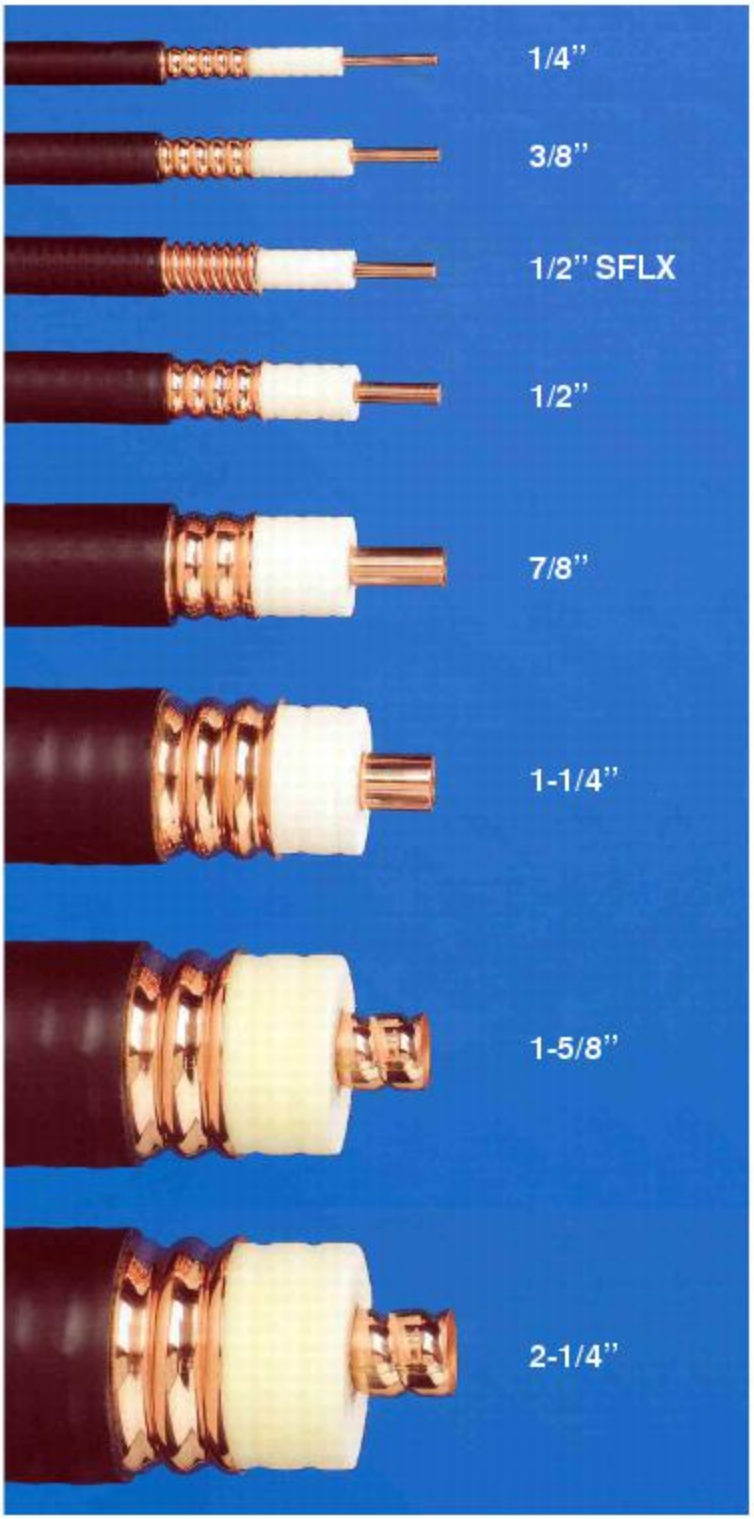
The variety of executions allows for hooking to most commercial profiles as can be found on iron fremeworks with wide reliability of seal and, at the same time, protection of fastened cables.

CABLE CLAMP	CODE
1 POS FOR RG214	14.030.000-226
2 POS FOR RG214	14.031.000-227
3 POS FOR RG214	14.032.000-228
1 POS FOR 1/2"	14.030.020-229
2 POS FOR 1/2"	14.031.020-230
3 POS FOR 1/2"	14.032.020-231
1 POS FOR 7/8"	14.030.080-232
2 POS FOR 7/8"	14.031.080-233
3 POS FOR 7/8"	14.032.080-234
1 POS FOR 1-1/4"	14.030.110-235
2 POS FOR 1-1/4"	14.031.110-236
3 POS FOR 1-1/4"	14.032.110-237
1 POS FOR 1-5/8"	14.030.120-238
2 POS FOR 1-5/8"	14.031.120-239
3 POS FOR 1-5/8"	14.032.120-240

CORRUGATED COAXIAL

Antennas in mobile, cellular, microwave and broadcast systems require high quality coaxial cables, with very low loss and high power signal transmission capability, to realize the interconnection with transmission equipments with the high efficiency and reliabulity require by these services and, usually, has to be instaled in condition where weather and corrosion resistance are essential features to offer a high level of safety as well as long service life.
CPE Italia can supply a large range of coaxial cables able to fulfill all strictly mechabical and electrical characteristics require by the telecommunication system and to meet all installation problems.

- **Inner conductor of copper wire, copper tube or corrugated copper tube depending on the cable size.**
- **Outer conductor of a corrugated copper tube with annular or spiral corrugation depending on the flexibility required.**
- **Weather resistant PE outer sheath suitable for indoor, outdoor or underground installation. Also available with flame retardant halogen free material.**
- **Dielectric in cellular polyethylene foam manufactured by a unique insulation process using ozone friendly expansion gas.**
- **Low VSWR**
- **Low attenuation**
- **High power capability**
- **High screening efficiency**
- **Easy and reliable installation of connectors**
- **Very good corrosion resistance**



GROUNDING KIT

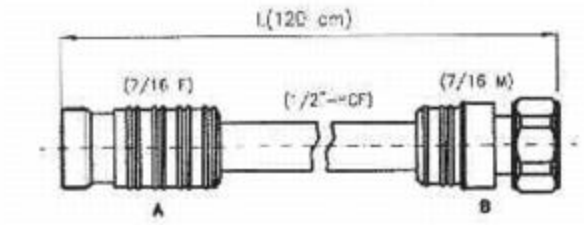
These grounding clamps represent the best solution to ground cable to the antenna tower in order to improve protection against lightnings. In fact the "one-piece" construction (clamp + ground cable) make easy and fast to install the kit without any possibility to loose parts while the rugged construction and the good materials employed assure continuos electrical and mechanical reability in any environmental conditions.

GROUNDING KIT	CODE
GK FOR RG214	11.631.000-306
GK FOR 1/4"	11.630.600-307
GK FOR 1/2"	11.630.200-308
GK FOR 7/8"	11.630.300-309
GK FOR 1-5/8"	11.630.500-310
GK FOR 1-1/4"	11.630.400-311

JUMPER AND FEEDER CABLES

The large choice of jumper cables available solve all the interconnections problems between antenna, feed line and base station.
Available in both standard and customized length with N, 7/16" straight and 90° connectors, jumper cables are supplied on request with technical report test.

CONNECTOR	CODE	CABLE	CODE
7/16'	V	1/2" LCF	12LCF
STRAIGHT	D	1/2" HCF	12HCF
90°	R		
STRAIGHT/90° (COMBI)	X		



CONNECTORS						CABLE					L (cm)			
V	J	D	V	P	D	1	2	H	C	F	0	1	2	0
A				B										

OVERVOLTAGE PROTECTION

The family of overvoltage protectors is designed to provide for general protection (AC and RF) to the communication RF equipments from damage due to external transient and surges caused by lightning discharges, induction, switching sources and, even to some degree, EMP.
To fulfill all the user's needs either "gas discharge" or "1/4 stub" types are available with the most used connectors interconnection up to 2,5 GHz.

Features:

- instantaneous and reliable response in any environment
- easy and fast installation
- completely sealed and weatherproof construction
- very low VSWR to avoid insertion mismatches

CON STUB

Centre frequency: 1920 MHz
Bandwidth: +/-70MHz

P/N 38.005.107-021
assembly instruction: 93.100.909-059

Centre frequency: 925 MHz
Bandwidth: +/-70MHz

P/N 38.005.007-003
assembly instruction: 93.100.909-059

A SCARICA DI GAS

7/16 M/F

P/N 38.102.207-018
assembly instruction: 93.100.909-059

7/16 F/F

P/N 38.105.207-011
assembly instruction: 93.100.909-059

7/16 F/F

P/N 38.105.207-008
assembly instruction: 93.100.909-059

Standard connectors *part-number*

ELECTRICALS	
Impedance:	50 Ohm
Frequency range:	DC to 2.5GHz
VSWR:	<1.2
Insertion loss:	0.2 dB max
D.C. Sparkover voltage:	see table
Dynamic voltage:	see table
Residual voltage:	see table

MATERIALS and SURFACE FINISH		
Body:	Brass	Optalloy*
Connector:		
Center contact:	Spring Bronze	Silver Plated
Outer contact	Brass	Silver Plated
Insulator:	PTFE	
Gasket:	Silicone rubber	

ENVIRONMENTAL	
Temperature:	-40 to +100 C°
RH range:	up to 100%
Humidity and salt spray test conforming to MIL-STD 202F method 106E/101D	
NOTE: *) Optalloy is equivalent to SUCOPLATE	

GAS - TUBE SURGE PROTECTORS

P/N	Uzstat (V)	Uzdyn (V)	Is 8/20 (KA)	Us (V)	Uarc (V)
2027-09-A	90+/-25%	800	10	<100	<20
2027-23-A	230+/-20%	850	5	<100	<20
2027-35-A	350+/-20%	900	5	<100	<20
2029-47-A	470+/-20%	1000	20	<100	<20
2031-60-A	600+/-15%	1500	5	<180	<30
2031-90-A	900+/-20%	1800	5	<170	<25
732-0-0-454	1500+/-15%	3500	15	<90	<10