

Hughes Electronics are a centre of excellence in passive communication product design and manufacture. Our business stream includes the seamless design and development process and the J.I.T. supply of cables, connectors, pre-terminated channels, cross connects, jumper leads, looms and kits including passive inter-media modulation products, we can also provide turnkey integration. A small example of our range of Cellular products are listed below.

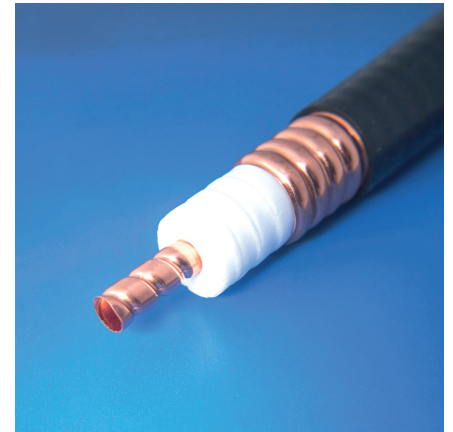
## Corrugated Low Loss Cables

Hughes corrugated waveguide cables are high performing low loss cables mainly used in Cellular telecom and Broadcast applications. Benefits of corrugated cables over smooth walled cables are:

- **Extremely flexible**
- **Low Passive Intermodulation (PIM)**
- **Managed thermal expansion**

Available in many sizes with standard polyethylene PE sheath or flame retardant Low

Hughes Part Number			Description
Male	Female	Right Angle Male	
08-RF21301	08-RF21302	08-RF21303	7/16 connector to suit RG213
08-RF01401	08-RF01402	08-RF01403	7/16 connector to suit 1/4 inch Superflex
08-RF03801	08-RF03802	08-RF03803	7/16 connector to suit 3/8 inch Superflex
08-RF01201	08-RF01202	08-RF01203	7/16 connector to suit 1/2 inch Superflex
08-RF07801	08-RF07802	08-RF07803	7/16 connector to suit 7/8 inch flex
08-RF11401	08-RF11402	08-RF11403	7/16 connector to suit 1 1/4 inch flex



## Jumper Cables

Hughes super flexible low PIM jumper cables are specially designed for GSM and CDMA base stations, manufactured to critical standards of excellence and adopting the best mechanical principles for radio frequency and reliability performance each assembly undergoes two VSWR test processes during manufacture to ensure outstanding PIM performance.

- **Excellent VSWR and PIM performance (-162dBc typical)**
- **Low stable IM3 distortion**
- **Designed for outdoor application**
- **IP68 water immersion tested transversely and longitudinally**



Hughes Part Number			Description
1/4"	3/8"	1/2"	
25-RF507M7M14/XX	25-RF507M7M38/XX	25-RF507M7M12/XX	7/16 Straight Male to Male
25-RF507R7R14/XX	25-RF507R7R38/XX	25-RF507R7R12/XX	7/16 Right Angle Male to Right Angle Male
25-RF507M7F14/XX	25-RF507M7F38/XX	25-RF507M7F12/XX	7/16 Straight Male to Female
25-RF50NMNM14/XX	25-RF50NMNM38/XX	25-RF50NMNM12/XX	N Type Straight Male to Male
25-RF50NRNR14/XX	25-RF50NRNR38/XX	25-RF50NRNR12/XX	N Type Right Angle Male to Right Angle Male
25-RF50NMNF14/XX	25-RF50NMNF38/XX	25-RF50NMNF12/XX	N Type Straight Male to Female

replace XX with length required. i.e 02 for 2M

## Connectors

### N type

N Series coaxial connectors are medium- sized, threaded coupling connectors designed for use from DC to 12.4 GHz. Their consistently low broadband VSWR have made them popular over the years. Applications include : Antenna , Base Stations, Microwave Components, Transmitters, Broadcast, Receivers, Radar, Test & Measurement, Instrumentation and LANs.



Hughes Part Number		Description
Male	Female	
13-RF01201	13-RF01202	N Type to suit RG213
13-RF01401	13-RF01402	N Type to suit 1/4 inch Superflex
13-RF03801	13-RF03802	N Type to suit 3/8 inch Superflex
13-RF01201	13-RF01202	N Type to suit 1/2 inch Superflex

Hughes electronics stock a large number of different types on N Type connectors for many various cable types. Please call our sales team if your requirement is not listed above

### 7/16

Your channel or system performance is almost always limited by the performance of the connector/product deployed. Hughes 7/16ths connector design benefit from our unique work in physics and signal processing and GSM/CDMA applications to deliver optimum performance for type. Inter-modulation distortion is consistently low, - 168 dBc typical

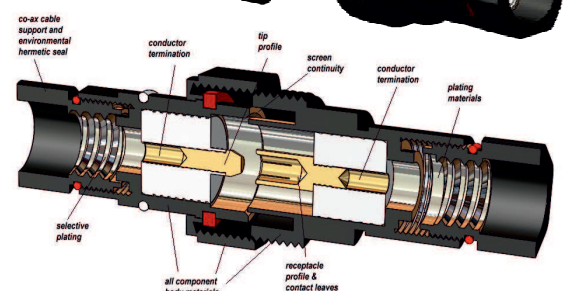


- *Low IMD and low VSWR provides improved system performance.*
- *Designed for ease of installation with standard hand tool.*
- *IEC 169 dust (P68) and water (IP68) proof.*
- *Reduced assembly reduces resistance, reflections and sources of IMD.*
- *White bronze-plated bodies deliver a high conductivity and corrosion resistance.*

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08-RF11401	08-RF11402	08-RF11403	7/16 connector to suit 1 1/4 inch Superflex

Hughes design the best performing connectors in the industry, our Research and Development programme in physics, electronics and signal processing allows Hughes to understand the effects of connector design on IMD and PIM generation. Our exclusive knowledge base and mission goal to simply 'make things better' are the foundation stones for our next generation Ultra Low PIM connector series;

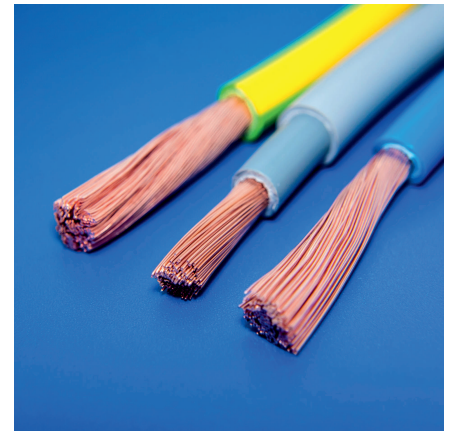
- |                              |  |
|------------------------------|--|
| • <i>Zero Harmonics</i>      | • <i>Zero Magnetics</i>                    |
| • <i>Vibration dampening</i> | • <i>Single forward and return pathway</i> |
| • <i>Ultra low PIM</i>       | • <i>Waveguide electromagnetic screen</i>  |
| • <i>Ultra low torquing</i>  | • <i>Innate lightning protection</i>       |
| • <i>Lightweight</i>         | • <i>Easy field termination</i>            |
| • <i>Non corrodible</i>      | • <i>Legacy compatible to 7/16ths</i>      |
| • <i>IP 68</i>               | • <i>Unparalleled performance</i>          |



## Power Cable

Hughes offers a full range of power cables including Armoured cable, Panel Cable, SY Control Cable, YY Control Cable, 3183Y Flexible cable, Tri-Rated cable, Double Insulated cable and Rubber Flex cable. All power cables supplied by Hughes are independently tested and conform to the relevant BS standards. Most cable types are available from 0.75mm to 50mm conductor both in single and multiple cores with the option of PVC or LSZH sheaths and in various colour options. Listed below are the more popular options but please call our sales team if your requirement is not listed below.

Hughes Part Number			Description
Tri-Rated 6381Y	Double Insulated 6381Y	3Core SWA BS6724	Conductor size mm <sup>2</sup>
21-41015XX	21-31015XX	21-SWA-3X1.5	1.50
21-41025XX	21-31025XX	21-SWA-3X2.5	2.50
21-4104XX	21-3104XX	21-SWA-3X4.0	4.00
21-4106XX	21-3106XX	21-SWA-3X6.0	6.00
21-4110XX	21-3110XX	21-SWA-3X10.0	10.00
21-4116XX	21-3116XX	21-SWA-3X16.0	16.00
21-4125XX	21-3125XX		25.00
21-4135XX	21-3135XX		35.00
21-4150XX	21-3150XX		50.00



## Breakers

Hughes distribute the Acti 9 range of products manufactured by Schneider Electric.

Acti 9 helps you meet developing energy efficiency and environmental certifications or requirements, now and in the future. It minimises impact from the design stage, through the installation's lifetime of use and eventual recycling. Through both design and technology, Acti 9 provides you with the key combination of less impact and more efficiency that is necessary for the environment today. The full range of Acti 9 products are available to view at:-

<http://www.schneider-electric.co.uk/documents/electrical-distribution/en/local/acti-9/Acti9-Launch-Catalogue.pdf>



## Attenuators

Hughes high grade fixed RF Attenuators help lower voltage, dissipates power and improves impedance matching. Available in various wattage and attenuation, Hughes low VSWR attenuators provides excellent efficiency.

- **Low Insertion Loss**
- **Low DC power Consumption**
- **Accurate Attenuation**

Hughes Part Number		Description
2Watt	5Watt	
35-RF2W01	35-RF5W01	N Type Male to Female Attenuator 3dB
35-RF2W02	35-RF5W02	N Type Male to Female Attenuator 6dB
35-RF2W03	35-RF5W03	N Type Male to Female Attenuator 10dB



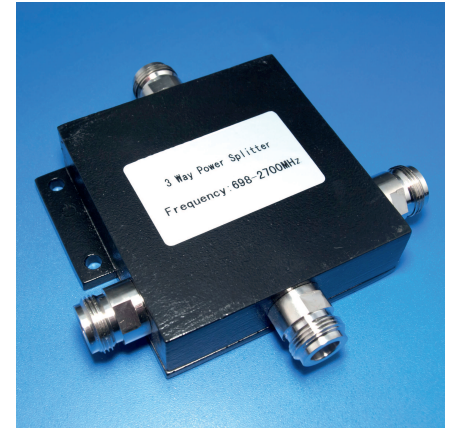


## Power Dividers / Splitters

Power dividers / splitters are used in a wide variety of applications and can satisfy almost any requirement where a signal needs to be distributed or combined.

- *Minimal insertion loss*
- *High isolation between output ports*
- *Exceptional phase and amplitude balance.*

Hughes Part Number		Description
2 Way	3 Way	
35-PS2W01	35-PS3W01	N Type 700-2700 MHz Power Splitter
35-PS2W02	35-PS3W02	N Type 800-2700 MHz Power Splitter
35-PS2W03	35-PS2W03	N Type 700-3500 MHz Power Splitter



## Directional Couplers

Directional Couplers are passive devices used in the field of radio technology. They couple a defined amount of the electromagnetic power in a transmission line and provide it to an ancillary port where it can be deployed in another circuit. An essential feature of directional couplers is that they only couple power flowing in one direction.

Hughes Part Number		Description
35-CDS51	N Type 700-2700 MHz	
35-CDS61	N Type 700-2700 MHz	6dB Directional Coupler
35-CDS101	N Type 700-2700 MHz	10dB Directional Coupler
35-CDS151	N Type 700-2700 MHz	15dB Directional Coupler
35-CDS201	N Type 700-2700 MHz	20dB Directional Coupler



## Antennas

Hughes offers a full range of Antennas from indoor domed ceiling mount to external high gain pole mount. All antennas undergo comprehensive environmental and performance test to ensure that they meet the all relevant standards.

Please contact our sales team with your requirement.

