

# SPINNER PMR / TETRA Portfolio



Reliable Components  
for Critical Communication

HIGH FREQUENCY PERFORMANCE WORLDWIDE  
[www.spinner-group.com](http://www.spinner-group.com)





## Reliable Components for Critical Communications

**Worldwide there is a growing need for essential services like police forces, fire departments, and disaster and emergency management teams. Communication within and between these organizations needs to be reliable and free of glitches, especially when they go into action. The technology involved also has to meet demanding requirements, because lives can be at stake.**

Professional Mobile Radio (PMR) or Terrestrial Trunked Radio (TETRA) networks are subject to the laws and regulations of individual countries and can therefore be implemented in different ways. Some networks are completely separate from commercial mobile networks, while in other cases the two types are combined.

Especially in the case of in-building networks, PMR services may be delivered together with other mobile communication services via the same Distributed Antenna System (DAS). Here it's especially important to use high-quality components, because issues like passive inter-

modulation can cause considerable problems in voice and data communications. All SPINNER combining solutions are passive, which eliminate most potential sources of errors. This is an important prerequisite for ensuring highly reliable operation.

At SPINNER we have been setting standards with our RF technology products for more than 75 years, helping to drive progress in the information age. We are dedicated to consistently providing top-quality products and outstanding service, which are crucial for ensuring satisfied customers.

# PMR / TETRA Portfolio

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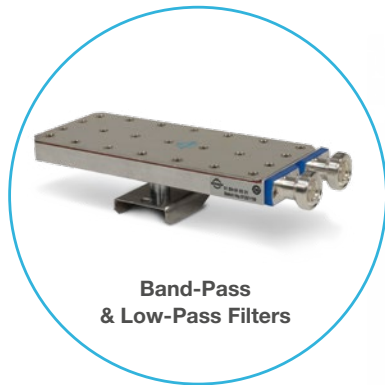
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For more information on PMR/TETRA products, please use our [Product Finder](#).

# Reliable Components for Critical Communication





**Multiband  
Combiners**



**Multiband Combining  
Systems**



**Loads  
and Attenuators**



**RF Connectors**



**Directional  
Couplers**

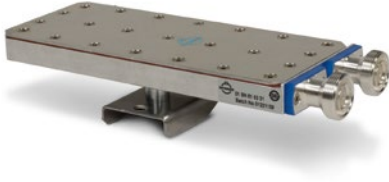


**Jumpers**

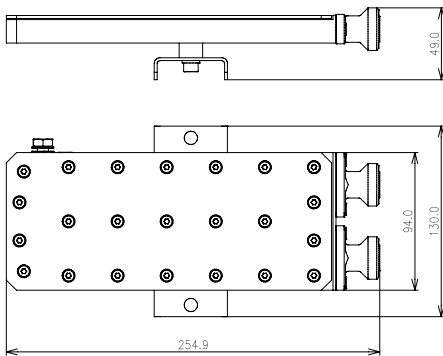


**Adapters**

## Filters



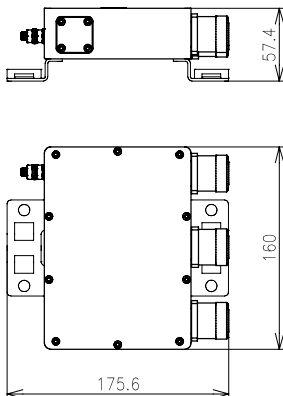
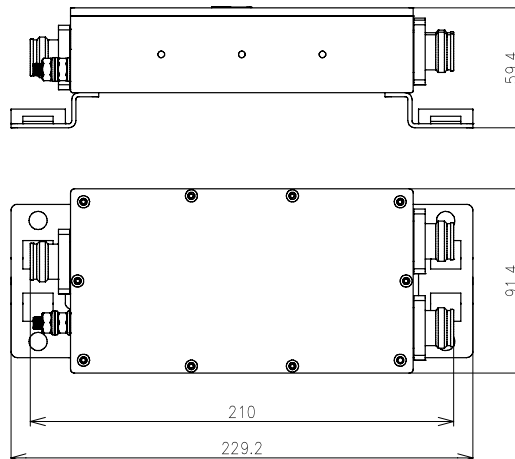
**BN 616331 / BN 616439**



### Low-Pass Filters

| Part Number (BN)                         | 616331                                                        | 616439                                                                                         |
|------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Pass-band                                | 0 - 500 MHz                                                   | 0 - 614 MHz                                                                                    |
| Pass-band loss                           | $\leq 0.20$ dB                                                |                                                                                                |
| Stop-band                                | 800 - 2200 MHz                                                | 800 - 2170 MHz                                                                                 |
| Stop-band loss                           | $\geq 45$ dB @ 800 - 876 MHz<br>$\geq 55$ dB @ 876 - 2200 MHz | $\geq 30$ dB @ 800 - 860 MHz<br>$\geq 40$ dB @ 860 - 960 MHz<br>$\geq 70$ dB @ 1710 - 2170 MHz |
| Passive intermodulation (IM3) @ 2 x 20 W | $\leq -150$ dBc; typ. $\leq -160$ dBc                         |                                                                                                |
| VSWR                                     | $\leq 1.25$ @ 0 - 380 MHz<br>$\leq 1.14$ @ 380 - 500 MHz      | $\leq 1.40$ @ 0 - 380 MHz<br>$\leq 1.15$ @ 380 - 614 MHz                                       |
| Power rating                             | $\leq 150$ W                                                  |                                                                                                |
| Connectors                               | 7-16 female                                                   |                                                                                                |
| Temperature range                        | $-40$ °C ... $+65$ °C                                         |                                                                                                |
| Degree of protection (mated)             | IP 65                                                         |                                                                                                |
| Weight                                   | ~ 1.4 kg                                                      |                                                                                                |
| Mounting brackets                        | Included                                                      |                                                                                                |

## Combining

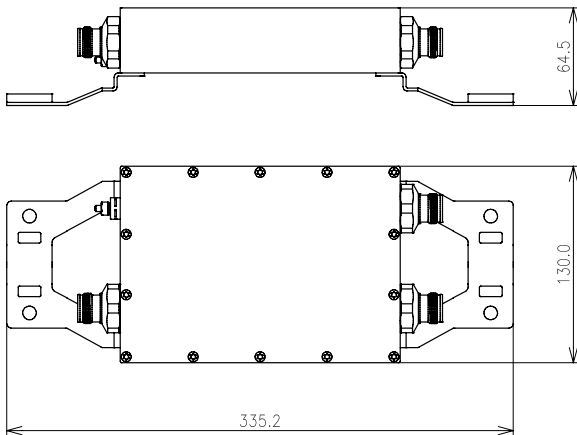
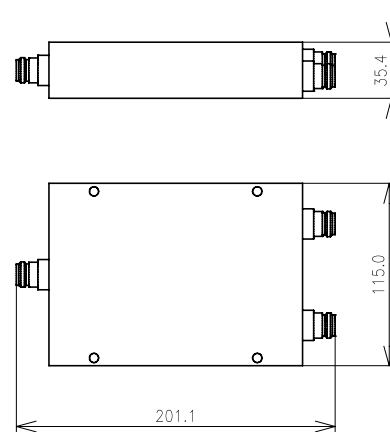
**BN 572674****BN 570732**

### Multiband Combiners - Diplexers

| Part Number (BN)                              | 572674                                     | 572677   | 572668             | 572669   | 570732                                     | 570756  |
|-----------------------------------------------|--------------------------------------------|----------|--------------------|----------|--------------------------------------------|---------|
| Version                                       | Single                                     | Double   | Single             | Double   | Single                                     | Double  |
| Frequency range<br>Port 1<br>Port 2<br>Port 3 | DC - 2170 MHz<br>2496 - 2690 MHz<br>Common |          |                    |          | DC - 2700 MHz<br>3300 - 3800 MHz<br>Common |         |
| Insertion loss<br>Port 1 -> port 3            | ≤ 0.30 dB                                  |          |                    |          | ≤ 0.50 dB                                  |         |
| Isolation                                     | ≥ 50 dB                                    |          |                    |          |                                            |         |
| Passive intermodulation<br>(IM3) @ 2 x 20 W   | ≤ -160 dBc                                 |          |                    |          | ≤ -155 dBc                                 |         |
| VSWR                                          | ≤ 1.25                                     |          |                    |          |                                            |         |
| Power rating*<br>Port 1<br>Port 2             | ≤ 600 W<br>≤ 100 W                         |          | ≤ 500 W<br>≤ 100 W |          | ≤ 300 W<br>≤ 60 W                          |         |
| DC and AISG                                   | 1 A (port 1 -> port 3)                     |          |                    |          |                                            |         |
| Connectors                                    | 7-16 female                                |          | 4.3-10 female      |          |                                            |         |
| Temperature range                             | -40 °C ... +55 °C                          |          |                    |          |                                            |         |
| Degree of<br>protection (mated)               | IP 67                                      |          |                    |          | IP 65                                      |         |
| Weight                                        | ~ 2.5 kg                                   | ~ 5.5 kg | ~ 2.5 kg           | ~ 5.5 kg | ~ 6 kg                                     | ~ 12 kg |
| Mounting bracket                              | Included                                   |          |                    |          |                                            |         |

\* (CW) max. per input port

## Combining

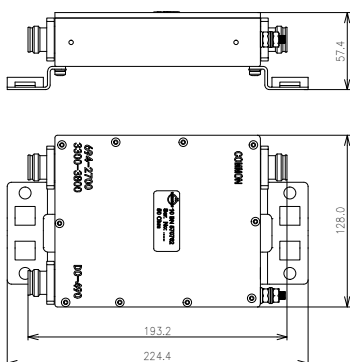
**BN 570744****BN 572924**

### Multiband Combiners - Diplexers

| Part Number (BN)                              | 570744                                     | 570785 | 572924                                   |
|-----------------------------------------------|--------------------------------------------|--------|------------------------------------------|
| Version                                       | Single                                     | Double | Single                                   |
| Frequency range<br>Port 1<br>Port 2<br>Port 3 | 350 - 960 MHz<br>1710 - 3800 MHz<br>Common |        | 440 - 475 MHz<br>870 - 960 MHz<br>Common |
| Insertion loss                                | $\leq 0.50$ dB; typ. $\leq 0.30$ dB        |        | $\leq 0.20$ dB                           |
| Isolation                                     | $\geq 50$ dB; typ. $\geq 60$ dB            |        | $\geq 60$ dB                             |
| Passive intermodulation<br>(IM3) @ 2 x 20 W   | $\leq -155$ dBc; typ. $\leq -160$ dBc      |        | $\leq -150$ dBc; typ. $\leq -160$ dBc    |
| VSWR                                          | $\leq 1.25$ ; typ. $\leq 1.20$             |        | $\leq 1.15$                              |
| Power rating*                                 | $\leq 250$ W                               |        | $\leq 50$ W                              |
| DC and AISG                                   | 1 A (port 1 -> port 3)                     |        | N/A                                      |
| Connectors                                    | 4.3-10 female                              |        | N female                                 |
| Temperature range                             | $-20$ °C ... $+60$ °C                      |        | $-40$ °C ... $+70$ °C                    |
| Degree of protection (mated)                  | IP 67                                      |        | IP 60                                    |
| Weight                                        | ~ 2.0 kg                                   |        | ~ 1.3 kg                                 |
| Mounting brackets                             | Included                                   |        | N/A                                      |

\* (CW) max. per input port

## Combining

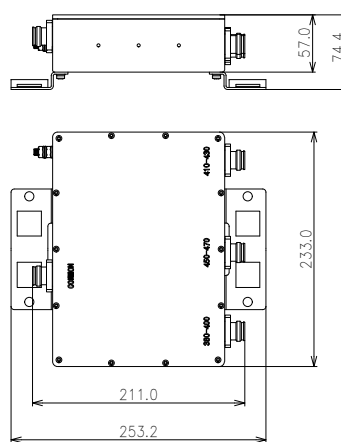
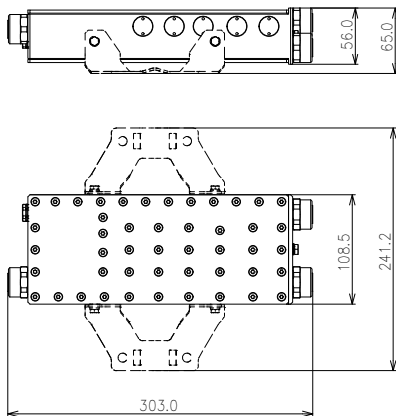
**BN 570762**

### Multiband Combiners - Diplexers

| Part Number (BN)                                                                          | 570762                                                           | 570763   | 576124                                             | 576125   |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------|----------------------------------------------------|----------|
| Version                                                                                   | Single                                                           | Double   | Single                                             | Double   |
| Frequency range<br>Port 1,3<br>Port 2,4                                                   | DC - 490 MHz<br>694 - 270 MHz & 3300 - 3800 MHz                  |          | 350 - 960 MHz<br>1421 - 2700 MHz & 3300 - 3800 MHz |          |
| Insertion loss<br>Port 1 -> port 3<br>Port 2 -> port 3                                    | ≤ 0.3 dB                                                         |          | ≤ 0.4 dB                                           |          |
| Isolation<br>Port 1 -> port 2<br>Port 3 -> port 4                                         | ≥ 50 dB                                                          |          |                                                    |          |
| Passive intermodulation (IM3)<br>3rd order @ 2 x 20 W                                     | ≤ -155 dBc; typ. ≤ -160 dBc<br>N/A @ DC - 490 MHz                |          | ≤ -155 dBc; typ. ≤ -160 dBc<br>@ 700 - 2700 MHz    |          |
| VSWR                                                                                      | ≤ 1.25                                                           |          |                                                    |          |
| Power rating*                                                                             | ≤ 500 W                                                          |          |                                                    |          |
| DC and AISG<br>Port 1 -> port 5 / port 3 -> port 6<br>Port 2 -> port 5 / port 4 -> port 6 | Max. 1A per input max. 60V DC (AISG standard, 2.0, § 6.4)<br>N/A |          |                                                    |          |
| Connectors                                                                                | 4.3 - 10 female                                                  |          |                                                    |          |
| Temperature range                                                                         | -40 °C ... +65 °C                                                |          | -40 °C ... +55°C                                   |          |
| Degree of protection (mated)                                                              | IP 65 (outdoor)                                                  |          |                                                    |          |
| Weight                                                                                    | ~ 2.1 kg                                                         | ~ 4.5 kg | ~ 1.5 kg                                           | ~ 3.1 kg |
| Mounting brackets                                                                         | Included                                                         |          |                                                    |          |

\* (CW) max. per input port

## Combining

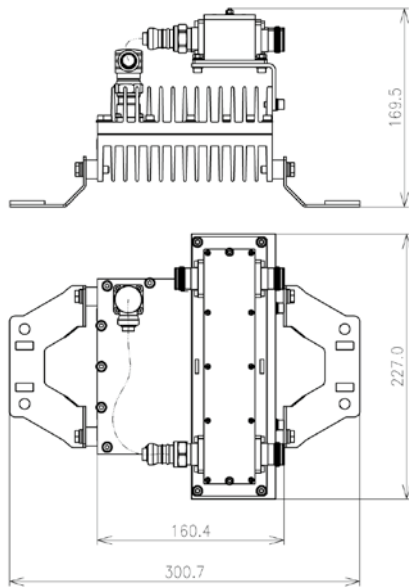
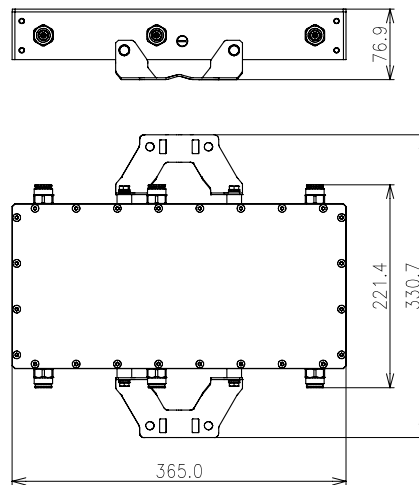
**BN 570605****BN 570759**

### Multiband Combiners - Diplexers & Triplexer

| Part Number (BN)                                      | 570605                                | 570792                                            | 570759                                          |
|-------------------------------------------------------|---------------------------------------|---------------------------------------------------|-------------------------------------------------|
| Frequency range<br>Port 1<br>Port 2<br>Port 3         | 380 - 400 MHz<br>410 - 430 MHz<br>N/A | 380 - 400 MHz<br>410 - 470 & 700 - 900 MHz<br>N/A | 380 - 400 MHz<br>410 - 430 MHz<br>450 - 470 MHz |
| Insertion loss                                        | $\leq 1.2$ dB                         |                                                   | $\leq 0.7$ dB                                   |
| Isolation                                             | $\geq 80$ dB                          |                                                   | $\geq 60$ dB                                    |
| Passive intermodulation (IM3)<br>3rd order @ 2 x 20 W | $\leq -155$ dBc; typ. $\leq -160$ dBc | $\leq -155$ dBc @ 700 - 900 MHz                   | $\leq -145$ dBc                                 |
| VSWR                                                  | $\leq 1.25$                           |                                                   |                                                 |
| Power rating*                                         | $\leq 200$ W                          |                                                   | 100 W                                           |
| Connectors                                            | 7-16 female                           |                                                   | 4.3-10 female                                   |
| Temperature range                                     | -5 °C ... +60 °C                      | -40 °C ... +65 °C                                 | -45 °C ... +45 °C                               |
| Degree of protection (mated)                          | IP 65 (outdoor)                       |                                                   |                                                 |
| Weight                                                | ~ 4 kg                                | ~ 4.5 kg                                          | ~ 4 kg                                          |
| Mounting brackets (BN)                                | B23905                                | B23515                                            | Included                                        |

\* (CW) max. per input port

## Combining

**BN 753388****BN 570754**

### 2 : 1 / 3 : 3 Multiband Combining Systems

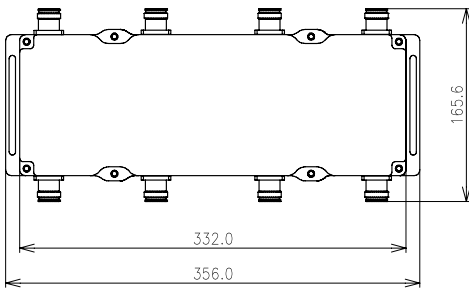
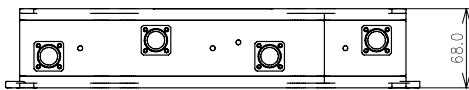
| Part Number (BN)                         | 753388                                                  | 570754                      | 570754F001    |
|------------------------------------------|---------------------------------------------------------|-----------------------------|---------------|
| Version (input : output)                 | 2 : 1                                                   | 3 : 3                       |               |
| Frequency range                          | 350 - 2700 MHz                                          | 380 - 3800 MHz              | 88 - 3800 MHz |
| Insertion loss                           | 3.0 dB ± 0.9 dB                                         | 5.0 dB ± 1.2 dB             |               |
| Isolation                                | ≥ 23 dB                                                 | ≥ 28 dB; typ. ≥ 30 dB       |               |
| Passive intermodulation (IM3) @ 2 x 20 W | ≤ 140 dBc @ 350 - 694 MHz<br>≤ 150 dBc @ 694 - 2700 MHz | ≤ -160 dBc; typ. ≤ -165 dBc |               |
| VSWR                                     | ≤ 1.25                                                  |                             |               |
| Power rating*                            | ≤ 80 W                                                  | ≤ 500 W                     |               |
| Connectors                               | 4.3-10 female                                           |                             |               |
| Temperature range                        | -40 °C ... +50 °C                                       | -40 °C ... +55 °C           |               |
| Degree of protection (mated)             | IP 65                                                   |                             |               |
| Weight                                   | ~ 3.7 kg                                                | ~ 6.6 kg                    |               |
| Mounting brackets                        | Included                                                |                             |               |

\* (CW) max. per input port

## Combining



BN 570680



### 4 : 4 Multiband Combining Systems

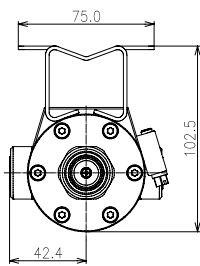
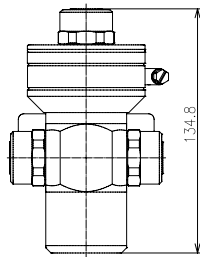
| Part Number (BN)                         | 570755                      | 570755F001    | 570680             | 570680F001                  |
|------------------------------------------|-----------------------------|---------------|--------------------|-----------------------------|
| Version (input : output)                 | 4 : 4                       |               |                    |                             |
| Frequency range                          | 380 - 3800 MHz              | 88 - 3800 MHz | 350 - 2700 MHz     |                             |
| Insertion loss                           | 6.1 dB ± 1.2 dB             |               | 6.0 dB ± 1.5 dB    |                             |
| Isolation                                | ≥ 28 dB; typ. ≥ 30 dB       |               | ≥ 23 dB            |                             |
| Passive intermodulation (IM3) @ 2 x 20 W | ≤ -160 dBc; typ. ≤ -165 dBc |               | ≤ -155 dBc         | ≤ -160 dBc; typ. ≤ -165 dBc |
| VSWR                                     | ≤ 1.25                      |               | ≤ 1.25; typ. ≤ 1.2 |                             |
| Power rating*                            | ≤ 500 W                     |               | ≤ 400 W            |                             |
| Connectors                               | 4.3-10 female               |               |                    |                             |
| Temperature range                        | -40 °C ... +55 °C           |               | -25 °C ... +65 °C  |                             |
| Degree of protection (mated)             | IP 65                       |               |                    |                             |
| Weight                                   | ~ 6.2 kg                    |               | ~ 3.6 kg           |                             |
| Mounting brackets                        | Included                    |               |                    |                             |

\* (CW) max. per input port

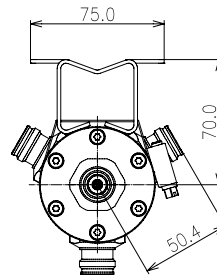
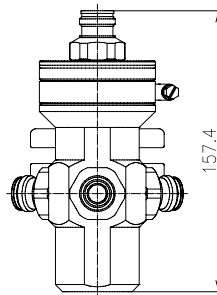
## Distribution



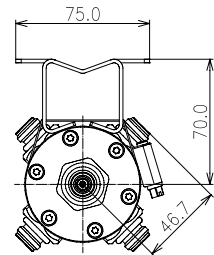
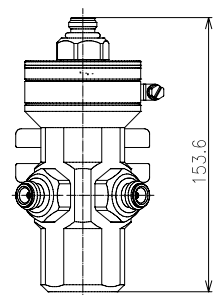
BN 818289



BN 818293



BN 923091

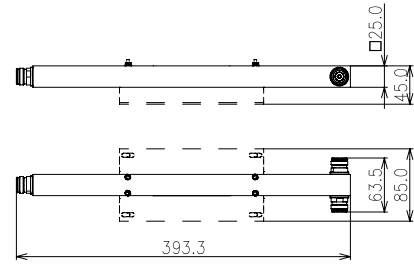


## Symmetric Splitters

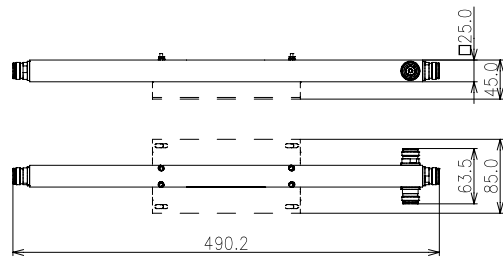
| Part Number (BN)                            | 818289            | 818290   | 818291   | 818292          | 818293   | 818294   | 923089   | 923090   | 923091   |
|---------------------------------------------|-------------------|----------|----------|-----------------|----------|----------|----------|----------|----------|
| Version (outputs)                           | 2                 | 3        | 4        | 2               | 3        | 4        | 2        | 3        | 4        |
| Frequency range                             | 330 - 2700 MHz    |          |          |                 |          |          |          |          |          |
| Insertion loss                              | ≤ 3.2 dB          | ≤ 5.0 dB | ≤ 6.5 dB | ≤ 3.2 dB        | ≤ 5.0 dB | ≤ 6.5 dB | ≤ 3.2 dB | ≤ 5.0 dB | ≤ 6.5 dB |
| Passive intermodulation (IM3)<br>@ 2 x 20 W | ≤ -160 dBc        |          |          |                 |          |          |          |          |          |
| VSWR                                        | ≤ 1.20            |          |          |                 |          |          |          |          |          |
| Power rating                                | ≤ 450 W           |          |          |                 |          |          | ≤ 250 W  |          |          |
| Connectors                                  | 7-16 female       |          |          | 4.3 - 10 female |          |          | N female |          |          |
| Temperature range                           | -40 °C ... +75 °C |          |          |                 |          |          |          |          |          |
| Degree of protection (mated)                | IP68              |          |          |                 |          |          |          |          |          |
| Weight                                      | ~ 1.1 kg          |          | ~ 1.2 kg | ~ 1.1 kg        |          | ~ 1.2 kg | ~ 1.1 kg |          | ~ 1.2 kg |
| Mounting brackets                           | Included          |          |          |                 |          |          |          |          |          |

## Distribution

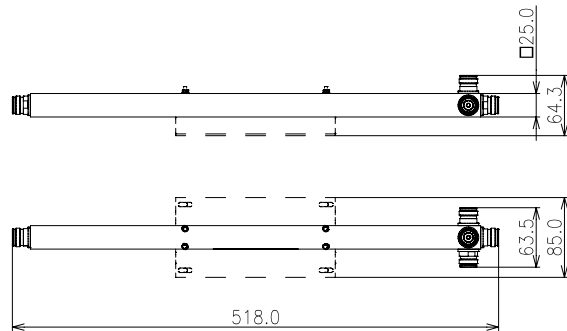
BN 818269



BN 818273



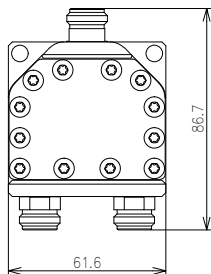
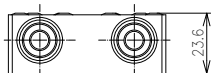
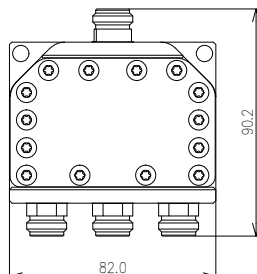
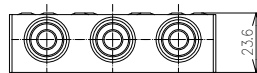
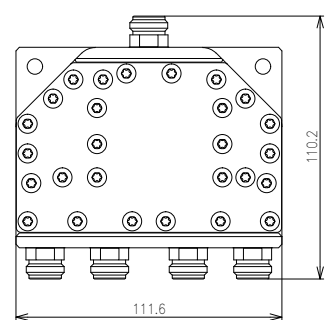
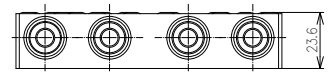
BN 818274



## Symmetric Splitters

| Part Number (BN)                            | 818269                      | 818269F001    | 818273         | 818273F001    | 818274         | 818274F001    |
|---------------------------------------------|-----------------------------|---------------|----------------|---------------|----------------|---------------|
| Version (outputs)                           | 2                           |               | 3              |               | 4              |               |
| Frequency range                             | 350 - 3800 MHz              | 88 - 3800 MHz | 350 - 3800 MHz | 88 - 3800 MHz | 350 - 3800 MHz | 88 - 3800 MHz |
| Insertion loss                              | ≤ 3.3 dB                    |               | ≤ 5.2 dB       |               | ≤ 6.6 dB       |               |
| Passive intermodulation (IM3)<br>@ 2 x 20 W | ≤ -155 dBc; typ. ≤ -160 dBc |               |                |               |                |               |
| VSWR                                        | ≤ 1.25                      |               |                |               | ≤ 1.35         |               |
| Power rating                                | ≤ 400 W                     |               |                |               |                |               |
| Connectors                                  | 4.3-10 female               |               |                |               |                |               |
| Temperature range                           | -30 °C ... +65 °C           |               |                |               |                |               |
| Degree of protection (mated)                | IP 65                       |               |                |               |                |               |
| Weight                                      | ~ 1.0 kg                    |               |                |               | ~ 1.1 kg       |               |
| Mounting brackets (BN)                      | B30342                      |               |                |               |                |               |

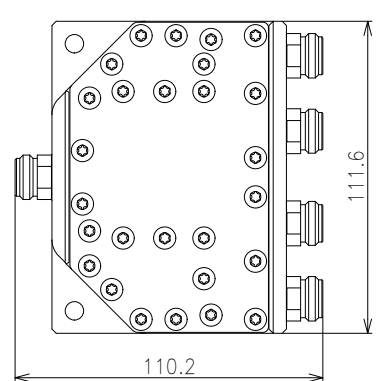
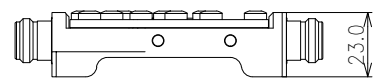
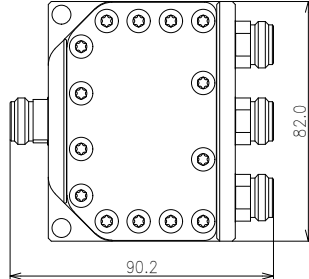
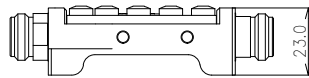
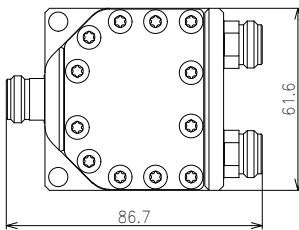
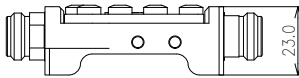
## Distribution

**BN 923067F001****BN 923068F001****BN 923069F001**

## Symmetric Splitters

| Part Number (BN)                            | 923067F001                  | 923068F001    | 923069F001    |
|---------------------------------------------|-----------------------------|---------------|---------------|
| Version (input : output)                    | 1 : 2                       | 1 : 3         | 1 : 4         |
| Frequency range                             | 88 - 2700 MHz               |               |               |
| Insertion loss (including splitting losses) | ≤ 3.6 dB                    | ≤ 6.5 dB      | ≤ 8.5 dB      |
| Return loss (Port 1)                        | ≤ -8.0 dB                   | ≤ -5.0 dB     | ≤ -4.0 dB     |
| Passive intermodulation (IM3) @ 2 x 20 W    | ≤ -160 dBc; typ. ≤ -165 dBc |               |               |
| VSWR (Port 1)                               | ≤ 2.0                       | ≤ 3.0         | ≤ 4.0         |
| Power rating                                | 300 W                       |               |               |
| Connectors                                  | N female                    |               |               |
| Temperature range                           | -25 °C ... +55 °C           |               |               |
| Degree of protection (mated)                | IP 45 indoor                |               |               |
| Weight                                      | ~ 0.20 kg                   | ~ 0.27 kg     | ~ 0.42 kg     |
| Mounting brackets (BN)                      | <b>B23655</b>               | <b>B23656</b> | <b>B23657</b> |

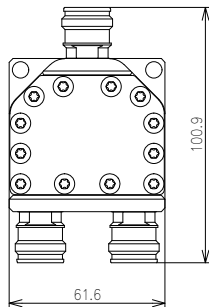
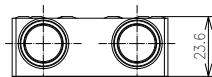
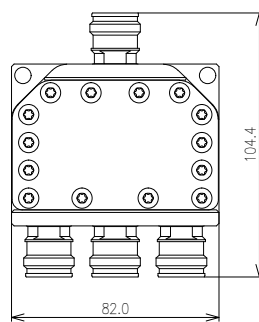
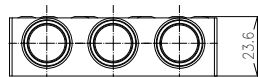
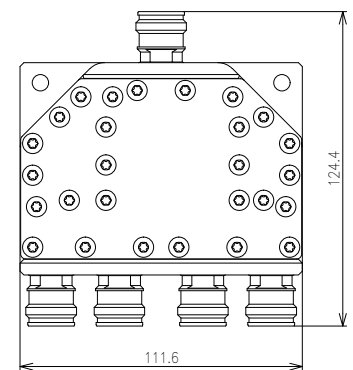
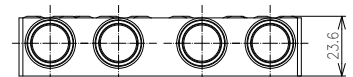
## Distribution

**BN 923077F001****BN 923078F001****BN 923079F001**

## Symmetric Splitters

| Part Number (BN)                            | 923077F001                  | 923078F001    | 923079F001    |
|---------------------------------------------|-----------------------------|---------------|---------------|
| Version (input : output)                    | 1 : 2                       | 1 : 3         | 1 : 4         |
| Frequency range                             | 88 - 2700 MHz               |               |               |
| Insertion loss (including splitting losses) | ≤ 3.6 dB                    | ≤ 6.5 dB      | ≤ 8.5 dB      |
| Return loss (Port 1)                        | ≤ -8.0 dB                   | ≤ -5.0 dB     | ≤ -4.0 dB     |
| Passive intermodulation (IM3) @ 2 x 20 W    | ≤ -160 dBc; typ. ≤ -165 dBc |               |               |
| VSWR (Port 1)                               | ≤ 2.0                       | ≤ 3.0         | ≤ 4.0         |
| Power rating                                | 300 W                       |               |               |
| Connectors                                  | N female                    |               |               |
| Temperature range                           | -25 °C ... +55 °C           |               |               |
| Degree of protection (mated)                | IP 65 outdoor               |               |               |
| Weight                                      | ~ 0.20 kg                   | ~ 0.27 kg     | ~ 0.42 kg     |
| Mounting brackets (BN)                      | <b>B23655</b>               | <b>B23656</b> | <b>B23657</b> |

## Distribution

**BN 433000F001****BN 433001F001****BN 433002F001**

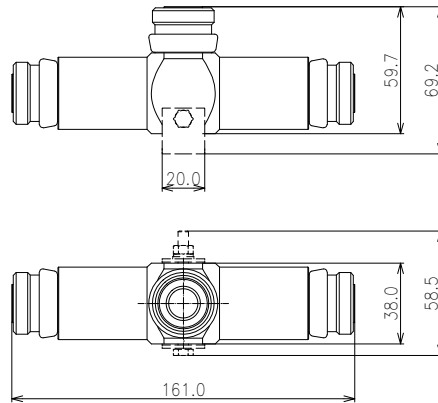
## Symmetric Splitters

| Part Number (BN)                            | 433000F001                            | 433001F001          | 433002F001          |
|---------------------------------------------|---------------------------------------|---------------------|---------------------|
| Version (input : output)                    | 1 : 2                                 | 1 : 3               | 1 : 4               |
| Frequency range                             | 88 - 2700 MHz                         |                     |                     |
| Insertion loss (including splitting losses) | 3.1 dB $\pm$ 0.2 dB                   | 4.8 dB $\pm$ 0.4 dB | 6.1 dB $\pm$ 0.6 dB |
| Return loss (Port 1)                        | $\leq$ -17.7 dB                       |                     |                     |
| Passive intermodulation (IM3) @ 2 x 20 W    | $\leq$ -160 dBc; typ. $\leq$ -165 dBc |                     |                     |
| VSWR (Port 1)                               | $\leq$ 1.3                            |                     |                     |
| Power rating                                | 300 W                                 |                     |                     |
| Connectors                                  | 4.3-10 female                         |                     |                     |
| Temperature range                           | -25 °C ... +55 °C                     |                     |                     |
| Degree of protection (mated)                | IP 62 indoor                          |                     |                     |
| Weight                                      | ~ 0.25 kg                             | ~ 0.33 kg           | ~ 0.53 kg           |
| Mounting brackets (BN)                      | <b>B23655</b>                         | <b>B23656</b>       | <b>B23657</b>       |

## Distribution



BN 818242



### Asymmetric Splitters (Tappers)

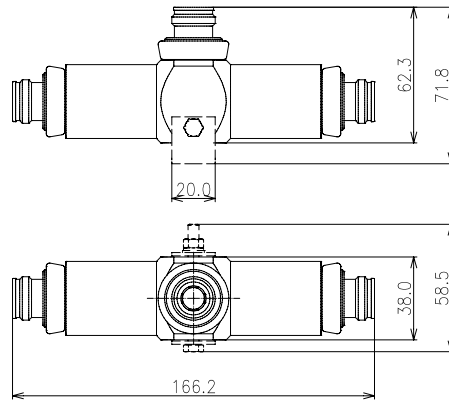
| Part Number (BN)                         | 818242                            | 818243 | 818244 | 818245  | 818246  | 818299  | 818248  | 818249   |
|------------------------------------------|-----------------------------------|--------|--------|---------|---------|---------|---------|----------|
| Version (splitting ratio)                |                                   |        |        |         |         |         |         |          |
| Secondary line                           | 1/4                               | 1/5    | 1/6    | 1/10    | 1/20    | 1/30    | 1/100   | 1/1000   |
| Main line                                | 3/4                               | 4/5    | 5/6    | 9/10    | 19/20   | 29/30   | 99/100  | 999/1000 |
| Frequency range                          | 170 – 1500 MHz<br>1710 – 2700 MHz |        |        |         |         |         |         |          |
| Insertion loss                           |                                   |        |        |         |         |         |         |          |
| Secondary line                           | 6.0 dB                            | 7.0 dB | 8.0 dB | 10.0 dB | 13.0 dB | 15.0 dB | 20.0 dB | 30.0 dB  |
| VSWR*                                    | ≤ 1.45                            | ≤ 1.35 |        | ≤ 1.2   |         |         |         |          |
| Temperature range                        | -40 °C ... +70 °C                 |        |        |         |         |         |         |          |
| Degree of protection (mated)             | IP 68                             |        |        |         |         |         |         |          |
| Weight                                   | ~ 0.6 kg                          |        |        |         |         |         |         |          |
| Mounting brackets (BN)                   | B09499                            |        |        |         |         |         |         |          |
| Passive intermodulation (IM3) @ 2 x 20 W | ≤ -155 dBc; typ. ≤ -160 dBc       |        |        |         |         |         |         |          |
| Power rating                             | ≤ 500 W                           |        |        |         |         |         |         |          |
| Connectors                               | 7-16 female                       |        |        |         |         |         |         |          |

\* According to DIN 14024-1

## Distribution



**BN 818342**



### Asymmetric Splitters (Tappers)

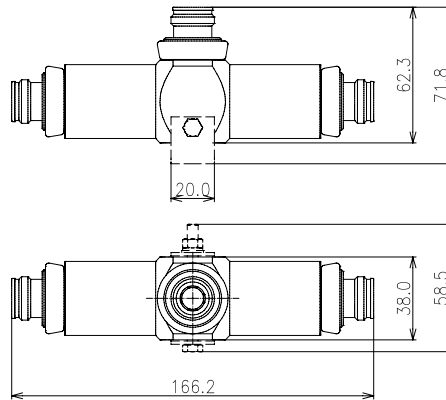
| Part Number (BN)                         | 818342                            | 818343 | 818344 | 818345  | 818346  | 818399  | 818348  | 818349   |
|------------------------------------------|-----------------------------------|--------|--------|---------|---------|---------|---------|----------|
| Version (splitting ratio)                |                                   |        |        |         |         |         |         |          |
| Secondary line                           | 1/4                               | 1/5    | 1/6    | 1/10    | 1/20    | 1/30    | 1/100   | 1/1000   |
| Main line                                | 3/4                               | 4/5    | 5/6    | 9/10    | 19/20   | 29/30   | 99/100  | 999/1000 |
| Frequency range                          | 170 – 1500 MHz<br>1710 – 2700 MHz |        |        |         |         |         |         |          |
| Insertion loss                           |                                   |        |        |         |         |         |         |          |
| Secondary line                           | 6.0 dB                            | 7.0 dB | 8.0 dB | 10.0 dB | 13.0 dB | 15.0 dB | 20.0 dB | 30.0 dB  |
| VSWR*                                    | ≤ 1.45                            | ≤ 1.35 |        | ≤ 1.2   |         |         |         |          |
| Temperature range                        | -40 °C ... +70 °C                 |        |        |         |         |         |         |          |
| Degree of protection (mated)             | IP 68                             |        |        |         |         |         |         |          |
| Weight                                   | ~ 0.6 kg                          |        |        |         |         |         |         |          |
| Mounting brackets (BN)                   | B09499                            |        |        |         |         |         |         |          |
| Passive intermodulation (IM3) @ 2 x 20 W | ≤ -160 dBc; typ. ≤ -165 dBc       |        |        |         |         |         |         |          |
| Power rating                             | ≤ 500 W                           |        |        |         |         |         |         |          |
| Connectors                               | 4.3-10 female                     |        |        |         |         |         |         |          |

\* According to DIN 14024-1

## Distribution



**BN 818342F001**



### Asymmetric Splitters (Tappers)

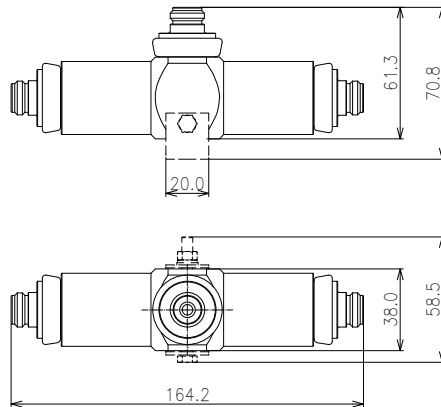
| Part Number (BN)                         | 818342F001                       | 818343F001 | 818344F001 | 818345F001 | 818346F001 | 818399F001 | 818348F001 | 818349F001 |
|------------------------------------------|----------------------------------|------------|------------|------------|------------|------------|------------|------------|
| Version (splitting ratio)                |                                  |            |            |            |            |            |            |            |
| Secondary line                           | 1/4                              | 1/5        | 1/6        | 1/10       | 1/20       | 1/30       | 1/100      | 1/1000     |
| Main line                                | 3/4                              | 4/5        | 5/6        | 9/10       | 19/20      | 29/30      | 99/100     | 999/1000   |
| Frequency range                          | 88 – 1500 MHz<br>1710 – 2700 MHz |            |            |            |            |            |            |            |
| Insertion loss                           |                                  |            |            |            |            |            |            |            |
| Secondary line                           | 6.0 dB                           | 7.0 dB     | 8.0 dB     | 10.0 dB    | 13.0 dB    | 15.0 dB    | 20.0 dB    | 30.0 dB    |
| VSWR*                                    | ≤ 1.45                           | ≤ 1.35     |            | ≤ 1.2      |            |            |            |            |
| Temperature range                        | -40 °C ... +70 °C                |            |            |            |            |            |            |            |
| Degree of protection (mated)             | IP 68                            |            |            |            |            |            |            |            |
| Weight                                   | ~ 0.6 kg                         |            |            |            |            |            |            |            |
| Mounting brackets (BN)                   | B09499                           |            |            |            |            |            |            |            |
| Passive intermodulation (IM3) @ 2 x 20 W | ≤ -160 dBc; typ. ≤ -165 dBc      |            |            |            |            |            |            |            |
| Power rating                             | ≤ 500 W                          |            |            |            |            |            |            |            |
| Connectors                               | 4.3-10 female                    |            |            |            |            |            |            |            |

\* According to DIN 14024-1

## Distribution



**BN 923042**



### Asymmetric Splitters (Tappers)

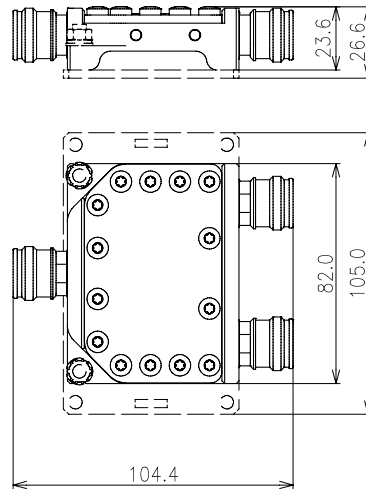
| Part Number (BN)                         | 923042                            | 923043 | 923044 | 923045  | 923046  | 923099  | 923048  | 923049   |
|------------------------------------------|-----------------------------------|--------|--------|---------|---------|---------|---------|----------|
| Version (splitting ratio)                |                                   |        |        |         |         |         |         |          |
| Secondary line                           | 1/4                               | 1/5    | 1/6    | 1/10    | 1/20    | 1/30    | 1/100   | 1/1000   |
| Main line                                | 3/4                               | 4/5    | 5/6    | 9/10    | 19/20   | 29/30   | 99/100  | 999/1000 |
| Frequency range                          | 170 – 1500 MHz<br>1710 – 2700 MHz |        |        |         |         |         |         |          |
| Insertion loss                           |                                   |        |        |         |         |         |         |          |
| Secondary line                           | 6.0 dB                            | 7.0 dB | 8.0 dB | 10.0 dB | 13.0 dB | 15.0 dB | 20.0 dB | 30.0 dB  |
| VSWR*                                    | ≤ 1.45                            | ≤ 1.35 |        | ≤ 1.2   |         |         |         |          |
| Temperature range                        | -40 °C ... +70 °C                 |        |        |         |         |         |         |          |
| Degree of protection (mated)             | IP 68                             |        |        |         |         |         |         |          |
| Weight                                   | ~ 0.6 kg                          |        |        |         |         |         |         |          |
| Mounting brackets (BN)                   | B09499                            |        |        |         |         |         |         |          |
| Passive intermodulation (IM3) @ 2 x 20 W | ≤ -150 dBc; typ. ≤ -155 dBc       |        |        |         |         |         |         |          |
| Power rating                             | ≤ 250 W                           |        |        |         |         |         |         |          |
| Connectors                               | N female                          |        |        |         |         |         |         |          |

\* According to DIN 14024-1

## Distribution



**BN 818459**



### Asymmetric Splitters (Tappers)

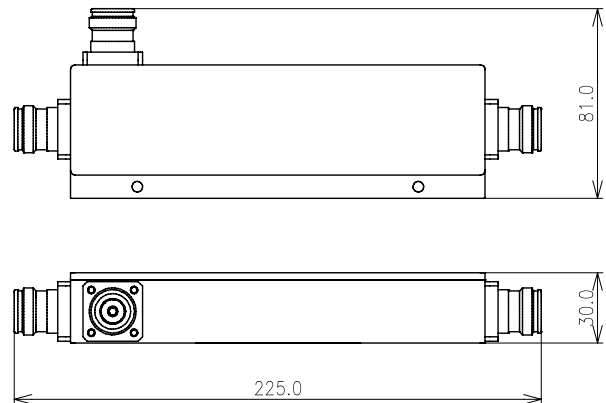
| Part Number (BN)                         | 818458                      | 818459 | 818460 | 818461 | 818462 | 818463 | 818464 | 818465 |
|------------------------------------------|-----------------------------|--------|--------|--------|--------|--------|--------|--------|
| Version (splitting ratio)                |                             |        |        |        |        |        |        |        |
| Secondary line                           | 1/3                         | 1/4    | 1/5    | 1/6    | 1/10   | 1/20   | 1/30   | 1/100  |
| Main line                                | 2/3                         | 3/4    | 4/5    | 5/6    | 9/10   | 19/20  | 29/30  | 99/100 |
| Frequency range                          | 380 – 3800 MHz              |        |        |        |        |        |        |        |
| Insertion loss                           |                             |        |        |        |        |        |        |        |
| Secondary line                           | 4.8 dB                      | 6 dB   | 7 dB   | 8 dB   | 10 dB  | 13 dB  | 15 dB  | 20 dB  |
| VSWR*                                    | ≤ 1.3                       |        |        |        |        |        |        |        |
| Temperature range                        | -40 °C ... +55 °C           |        |        |        |        |        |        |        |
| Degree of protection (mated)             | IP 65                       |        |        |        |        |        |        |        |
| Weight                                   | ~ 300 g                     |        |        |        |        |        |        |        |
| Mounting brackets (BN)                   | <b>B23656</b>               |        |        |        |        |        |        |        |
| Passive intermodulation (IM3) @ 2 x 20 W | ≤ -155 dBc; typ. ≤ -160 dBc |        |        |        |        |        |        |        |
| Power rating                             | ≤ 300 W                     |        |        |        |        |        |        |        |
| Connectors                               | 4.3 -10 female              |        |        |        |        |        |        |        |

\* According to DIN 14024-1

## Distribution



BN 818431



### Asymmetric Splitters (Tappers)

| Part Number (BN)                            | 7-16<br>4.3-10              | 818440<br>818431 | 818441<br>818432 | 818442<br>818433 | 818443<br>818434 | 818444<br>818435 | 818445<br>818436 | 818446<br>818437 | 818447<br>818438 | 818448<br>818439 |
|---------------------------------------------|-----------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Version (splitting ratio)                   |                             |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Secondary line                              | 1/3                         | 1/4              | 1/5              | 1/6              | 1/10             | 1/20             | 1/30             | 1/100            | 1/1000           |                  |
| Main line                                   | 2/3                         | 3/4              | 4/5              | 5/6              | 9/10             | 19/20            | 29/30            | 99/100           | 999/1000         |                  |
| Frequency range                             | 350 – 3800 MHz              |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Insertion loss                              |                             | 4.8 dB           | 6 dB             | 7 dB             | 8 dB             | 10 dB            | 13 dB            | 15 dB            | 20 dB            | 30 dB            |
| Secondary line                              |                             |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Isolation                                   |                             | ≥ 23 dB          | ≥ 24 dB          | ≥ 25 dB          | ≥ 26 dB          | ≥ 28 dB          | ≥ 30 dB          | ≥ 32 dB          | ≥ 35 dB          | ≥ 45 dB          |
| Passive intermodulation (IM3)<br>@ 2 x 20 W | ≤ -155 dBc; typ. ≤ -160 dBc |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| VSWR*                                       | ≤ 1.3                       |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Temperature range                           | -35 °C ... +75 °C           |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Degree of protection (mated)                | IP 65                       |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Mounting brackets                           | Included                    |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Part Number (BN)                            | 7-16                        | 818440           | 818441           | 818442           | 818443           | 818444           | 818445           | 818446           | 818447           | 818448           |
| Power rating                                | ≤ 500 W                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Connectors                                  | 7-16 female                 |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Weight                                      | ~ 880 g                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Part Number (BN)                            | 4.3-10                      | 818431           | 818432           | 818433           | 818434           | 818435           | 818436           | 818437           | 818438           | 818439           |
| Power rating                                | ≤ 400 W                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Connectors                                  | 4.3 -10 female              |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Weight                                      | ~ 680 g                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |

\* According to DIN 14024-1

## Distribution



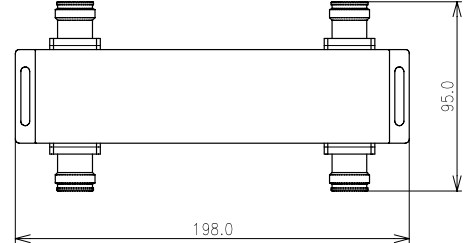
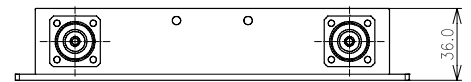
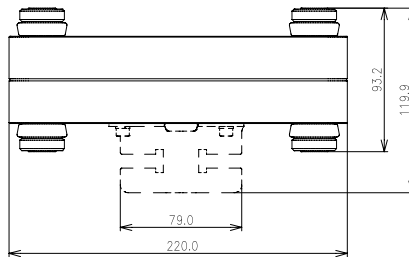
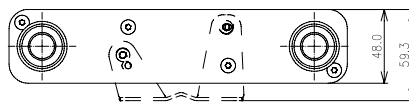
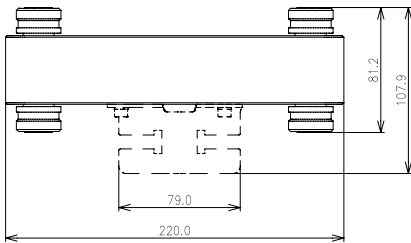
BN 753381 / BN 753382 / BN 753383



BN 753386



BN 753359



## Directional Couplers

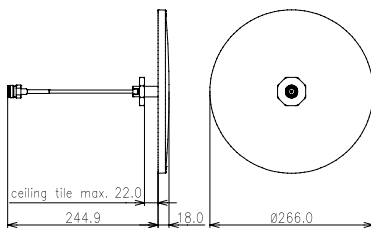
| Part Number (BN)                            | 753381            | 753382 | 753383  | 753386  | 753393                | 753393F001    | 753359                |
|---------------------------------------------|-------------------|--------|---------|---------|-----------------------|---------------|-----------------------|
| Version                                     | H-style           |        |         |         | X-style               |               |                       |
| Frequency range                             | 330 - 520 MHz     |        |         |         | 380 - 3800 MHz        | 88 - 3800 MHz | 350 - 2700 MHz        |
| Coupling attenuation                        | 3.0 dB            | 6.0 dB | 10.0 dB | 20.0 dB | 3.0 dB                |               |                       |
| Isolation                                   | ≥ 36 dB           |        | ≥ 40 dB | ≥ 50 dB | ≥ 30 dB; typ. ≥ 35 dB |               | ≥ 23 dB; typ. ≥ 25 dB |
| Passive intermodulation (IM3)<br>@ 2 x 20 W | ≤ 160 dBc         |        |         |         | ≤ 160 dBc             |               | ≤ -155 dBc            |
| VSWR                                        | ≤ 1.06            |        |         |         | ≤ 1.20                |               | ≤ 1.25                |
| Power rating*                               | ≤ 1000 W          |        |         |         | ≤ 500 W               |               | ≤ 300 W               |
| Connectors                                  | 7-16 female       |        |         |         | 4.3-10 female         |               |                       |
| Temperature range                           | -40 °C ... +70 °C |        |         |         | -40 °C ... +80°C      |               |                       |
| Degree of protection (mated)                | IP 68             |        |         |         | IP 65                 |               |                       |
| Weight                                      | ~ 1.4 kg          |        |         |         | ~ 2.1 kg              |               | ~ 0.8 kg              |
| Mounting brackets (BN)                      | B13702            |        |         |         |                       |               | Included              |

\* (CW) max. per input port

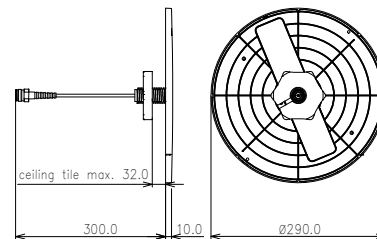
## Antennas



BN A77137C0001



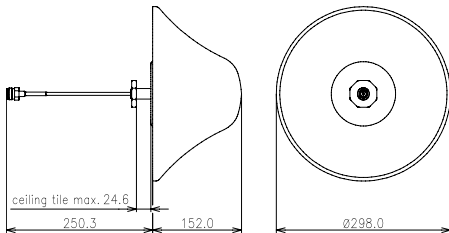
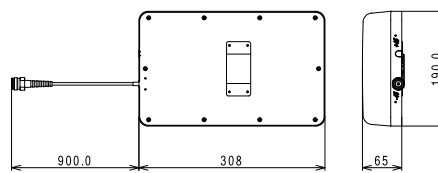
BN A77684



### Antennas

| Part Number (BN)                            | A77137C0001                                     | A77684                                           |
|---------------------------------------------|-------------------------------------------------|--------------------------------------------------|
| Type                                        | Omni thin for ceiling mount                     |                                                  |
| Polarization                                | Horizontal                                      |                                                  |
| Beamwidth                                   | 360 °                                           |                                                  |
| Frequency range                             | 380 - 2700 MHz                                  | 350 - 6000 MHz                                   |
| Ports                                       | 1                                               |                                                  |
| Gain                                        | ≥ 2.0 dBi ... ≥ 4.5 dBi                         | ≥ 3.0 dBi ... ≥ 5.0 dBi                          |
| Passive intermodulation (IM3)<br>@ 2 x 20 W | ≤ -153 dBc                                      | ≤ -153 dBc                                       |
| VSWR                                        | ≤ 2.5 @ 380 - 520 MHz<br>≤ 2.0 @ 694 - 2700 MHz | ≤ 2.0 @ 350 - 960 MHz<br>≤ 1.8 @ 1350 - 6000 MHz |
| Power rating                                | 50 W                                            |                                                  |
| Connector(s)                                | 4.3-10 female                                   |                                                  |
| Temperature range                           | -55 °C ... +60 °C                               |                                                  |
| Material and color                          | ABS, white, RAL9003                             |                                                  |
| Degree of protection                        | IP 54                                           |                                                  |
| Weight                                      | ~ 0.4 kg                                        | ~ 0.5 kg                                         |
| Mounting material                           | Included                                        |                                                  |
| Absorber (BN)                               | A77698                                          | On request                                       |
| Fire load                                   | 3.48 kWh                                        | 3.69 kW                                          |

## Antennas

**BN A77144****BN A77149C0002**

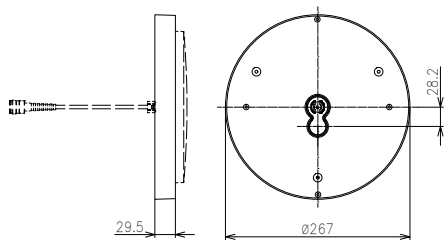
## Antennas

| Part Number (BN)                            | A77144                                                                | A77149C0002                                                                                       |
|---------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Type                                        | Omni for ceiling mount                                                | Panel for wall mount                                                                              |
| Polarization                                | Vertical                                                              |                                                                                                   |
| Beamwidth                                   | 90 ° @ 380 - 520 MHz<br>90 ° @ 698 - 960 MHz<br>35 ° @ 169 - 6000 MHz | 150 ° @ 380 - 470 MHz<br>90 ° @ 698 - 960 MHz<br>75 ° @ 1710 - 2700 MHz<br>55 ° @ 3400 - 4000 MHz |
| Frequency range                             | 380 - 6000 MHz                                                        | 380 - 4000 MHz                                                                                    |
| Ports                                       | 1                                                                     |                                                                                                   |
| Gain                                        | ≥ 2.0 dBi ... ≥ 4.0 dBi                                               | ≥ 4.0 dBi ... ≥ 7.5 dBi                                                                           |
| Passive intermodulation (IM3)<br>@ 2 x 20 W | ≤ -153 dBc                                                            | ≤ -153 dBc                                                                                        |
| VSWR                                        | ≤ 3.0 @ 380 - 520 MHz<br>≤ 2.0 @ 694 - 6000 MHz                       | ≤ 2.5 @ 380 - 520 MHz<br>≤ 2.0 @ 698 - 6000 MHz                                                   |
| Power rating                                | 50 W                                                                  |                                                                                                   |
| Connector(s)                                | 4.3-10 female                                                         |                                                                                                   |
| Temperature range                           | -55 to +60 °C                                                         |                                                                                                   |
| Material and color                          | ABS / white (RAL 9003)                                                |                                                                                                   |
| Degree of protection                        | IP 54                                                                 |                                                                                                   |
| Weight                                      | ~ 0.9 kg                                                              | ~ 0.6 kg                                                                                          |
| Mounting material                           | Included                                                              |                                                                                                   |
| Fire load                                   | 5.51 kWh                                                              | 3.29 kWh                                                                                          |

# Antennas



**BN A77698**



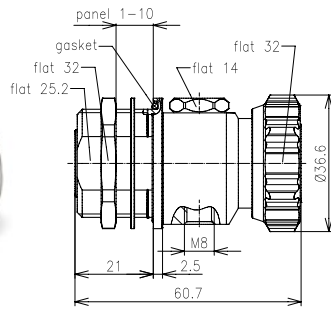
Absorber for 220 mm and 266 mm antennas

| Part Number (BN)     |                                       | A77698                                                  |
|----------------------|---------------------------------------|---------------------------------------------------------|
| Material             | Top cover<br>Bottom cover<br>Absorber | ABS, white RAL9003<br>PVC, white RAL9003<br>Carbon dust |
| Dimensions           |                                       | Ø 267 x 29.5 mm                                         |
| Weight               |                                       | 430 g                                                   |
| Degree of protection |                                       | Indoor / IP54                                           |
| RoHS                 |                                       | Compliant                                               |
| Fire load            |                                       | 4.30 kWh                                                |

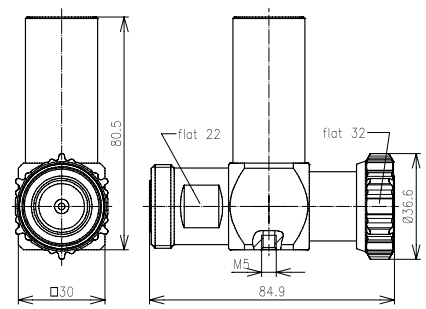
## Protection



BN 194284



BN 766419



## Surge Protectors

| Part Number (BN)              | 194284                                                                                                                                                   | 920480                      | 950880                 | 950888                   | 766419                              |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------|--------------------------|-------------------------------------|
| Version                       | Gas discharge arrestors (housing only, gas discharge arrestors see table below)                                                                          |                             |                        |                          | Quarter wave-length stub            |
| Frequency range               | 0 - 2700 MHz                                                                                                                                             |                             |                        |                          | 380 - 512 MHz                       |
| Insertion loss                | 0.1 dB @ DC to 1000 MHz<br>0.2 dB @ 1000 to 2500 MHz<br>0.3 dB @ 2000 to 2700 MHz                                                                        |                             |                        |                          | ≤ 0.1 dB                            |
| Surge current (8/20 µs)       | N/A                                                                                                                                                      |                             |                        |                          | ≤ 50 kA                             |
| Test pulse                    | N/A                                                                                                                                                      |                             |                        |                          | 4 kV (1.2/50 µs) and 2 kA (8/20 µs) |
| Residual energy at test pulse | N/A                                                                                                                                                      |                             |                        |                          | ≤ 20 µJ                             |
| Power rating                  | Dependent on gas discharge arrestor<br>BN A71307: ≤ 20 W @ 90 V<br>BN A71308: ≤ 180 W @ 230 V<br>BN A71311: ≤ 1.2 kW @ 600 V<br>BN A71313: ≤ 3 kW @ 1 kV |                             |                        |                          | ≤ 3 kW                              |
| VSWR                          | ≤ 1.1 @ 0 - 1000 MHz<br>≤ 1.2 @ 1000 - 2500 MHz<br>≤ 1.4 @ 2500 - 2700 MHz                                                                               |                             |                        |                          | ≤ 1.22                              |
| Connectors                    | 7-16 male-female bulkhead                                                                                                                                | 7-16 female-female bulkhead | N male-female bulkhead | N female-female bulkhead | 7-16 male-female                    |
| Temperature range             | -40 °C ... +85 °C                                                                                                                                        |                             |                        |                          | -45 °C ... +75 °C                   |
| Degree of protection (mated)  | IP 67                                                                                                                                                    |                             |                        |                          |                                     |
| Weight                        | ~ 270 g                                                                                                                                                  | ~ 280 g                     | ~ 160 g                | ~ 130 g                  | ~ 430 g                             |
| Grounding cable               | BN A71367                                                                                                                                                |                             |                        |                          |                                     |

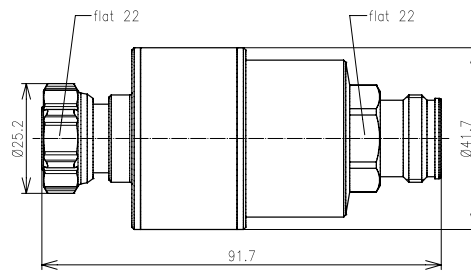
## Gas Discharge Arrestors

| Part Number                              | BN A71307   | BN A71308    | BN A71311          | BN A71313      |
|------------------------------------------|-------------|--------------|--------------------|----------------|
| Stat. sparkover voltage (100 V/s)        | 90 V ± 20 V | 230 V ± 35 V | 600 +120 V / -90 V | 1000 V ± 200 V |
| Power rating                             | ≤ 20 W      | ≤ 180 W      | ≤ 1200 W           | ≤ 3000 W       |
| Dyn. sparkover voltage (1 kV/µs)         | ≤ 700 V     | ≤ 750 V      | ≤ 1200 V           | ≤ 1600 V       |
| Surge current                            | ≤ 25 kA     |              |                    |                |
| Single (8/20 µs)                         |             |              |                    |                |
| multiple (8/20 µs)<br>5 pulses in 3 min. | ≤ 20 kA     | ≤ 10 kA      | ≤ 10 kA            | ≤ 5 kA         |
| Arc (residual) voltage                   | ≤ 25 V      |              |                    | ≤ 30 V         |

## Protection



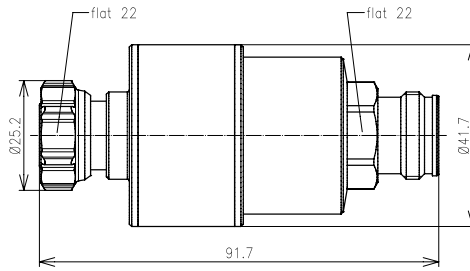
**BN 432054**



### DC Breaks

| Part Number (BN)                         | 766436                                                                                                                                                                                              | 766438                    | 432054                                 | 432067                    | 950720                              | 950721                    |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------|---------------------------|-------------------------------------|---------------------------|
| Version                                  | Inner and outer conductor separated                                                                                                                                                                 | Inner conductor separated | Inner and outer conductor separated    | Inner conductor separated | Inner and outer conductor separated | Inner conductor separated |
| Frequency range                          | 80 - 3800 MHz                                                                                                                                                                                       |                           |                                        |                           |                                     |                           |
| Insertion loss                           | ≤ 0.25 dB; typ. ≤ 0.10 dB                                                                                                                                                                           |                           |                                        |                           |                                     |                           |
| Passive intermodulation (IM3) @ 2 x 20 W | ≤ -160 dBc; typ. ≤ -165 dBc                                                                                                                                                                         |                           |                                        |                           | ≤ -155 dBc; typ. ≤ -160 dBc         |                           |
| VSWR                                     | ≤ 1.40; typ. ≤ 1.28 @ 80 – 100 MHz<br>≤ 1.30; typ. ≤ 1.22 @ 100 – 300 MHz<br>≤ 1.10; typ. ≤ 1.06 @ 300 – 1880 MHz<br>≤ 1.20; typ. ≤ 1.11 @ 1880 – 2700 MHz<br>≤ 1.25; typ. ≤ 1.19 @ 2700 – 3800 MHz |                           |                                        |                           |                                     |                           |
| Power rating                             | 1500 W @ 80 MHz<br>300 W @ 1880 MHz<br>250 W @ 2700 MHz<br>130 W @ 3800 MHz                                                                                                                         |                           |                                        |                           |                                     |                           |
| Temperature range                        | -40 °C ... +55 °C                                                                                                                                                                                   |                           |                                        |                           |                                     |                           |
| Degree of protection (mated)             | IP 67                                                                                                                                                                                               |                           |                                        |                           |                                     |                           |
| Connectors                               | 7-16 male / 7-16 female                                                                                                                                                                             |                           | 4.3-10 male screw type / 4.3-10 female |                           | N male / N female                   |                           |
| Weight                                   | ~ 0.3 kg                                                                                                                                                                                            |                           |                                        |                           |                                     |                           |
| Blocking DC voltage                      | 3000 V                                                                                                                                                                                              |                           |                                        |                           |                                     |                           |

## Protection



BN 432054

## DC Breaks

| Part Number (BN)                            | 766436F001                                                                                                                                                                                          | 766438F001                | 432054F001                                | 432067F001                | 950720F001                          | 950721F001                |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------|---------------------------|-------------------------------------|---------------------------|
| Version                                     | Inner and outer conductor separated                                                                                                                                                                 | Inner conductor separated | Inner and outer conductor separated       | Inner conductor separated | Inner and outer conductor separated | Inner conductor separated |
| Frequency range                             | 33 - 4000 MHz<br>5100 - 6000 MHz                                                                                                                                                                    |                           |                                           |                           |                                     |                           |
| Insertion loss                              | ≤ 0.25 dB; typ. ≤ 0.10 dB                                                                                                                                                                           |                           |                                           |                           |                                     |                           |
| Passive intermodulation (IM3)<br>@ 2 x 20 W | ≤ -160 dBc; typ. ≤ -165 dBc                                                                                                                                                                         |                           |                                           |                           | ≤ -155 dBc; typ. ≤ -160 dBc         |                           |
| VSWR                                        | ≤ 1.40; typ. ≤ 1.28 @ 80 – 100 MHz<br>≤ 1.30; typ. ≤ 1.22 @ 100 – 300 MHz<br>≤ 1.10; typ. ≤ 1.06 @ 300 – 1880 MHz<br>≤ 1.20; typ. ≤ 1.11 @ 1880 – 2700 MHz<br>≤ 1.25; typ. ≤ 1.19 @ 2700 – 3800 MHz |                           |                                           |                           |                                     |                           |
| Power rating                                | 1500 W @ 80 MHz<br>300 W @ 1880 MHz<br>250 W @ 2700 MHz<br>130 W @ 3800 MHz                                                                                                                         |                           |                                           |                           |                                     |                           |
| Temperature range                           | -40 °C ... +55 °C                                                                                                                                                                                   |                           |                                           |                           |                                     |                           |
| Degree of protection (mated)                | IP 67                                                                                                                                                                                               |                           |                                           |                           |                                     |                           |
| Connectors                                  | 7-16 male / 7-16 female                                                                                                                                                                             |                           | 4.3-10 male screw type /<br>4.3-10 female |                           | N male / N female                   |                           |
| Weight                                      | ~ 0.3 kg                                                                                                                                                                                            |                           |                                           |                           |                                     |                           |
| Blocking DC voltage                         | 3000 V                                                                                                                                                                                              |                           |                                           |                           |                                     |                           |

## Connectors for Radiating Cables



BN 557150



BN 557152



BN 557173

### Connectors

| Part Number (BN)             | 557150                                                                 | 557151   | 557152    | 557153      | 16305A      | 16306A              |
|------------------------------|------------------------------------------------------------------------|----------|-----------|-------------|-------------|---------------------|
| Cable size                   | RM 7/8"                                                                |          |           |             |             |                     |
| Connector type and style     | N male                                                                 | N female | 7-16 male | 7-16 female | 4.3-10 male | 4.3-10 female screw |
| VSWR, max.                   | 1.04 @ DC to 1.0 GHz<br>1.06 @ 1.0 to 2.0 GHz<br>1.08 @ 2.7 to 3.8 GHz |          |           |             |             |                     |
| Degree of protection (mated) | IP 68                                                                  |          |           |             |             |                     |
| Weight                       | 270 g                                                                  |          | 300 g     |             | 300 g       |                     |

| Part Number (BN)             | 557110                                                                                          | 557111   | 557161    | 557163      | 557173      | 557142                                                                  |
|------------------------------|-------------------------------------------------------------------------------------------------|----------|-----------|-------------|-------------|-------------------------------------------------------------------------|
| Cable size                   | RM 1/2"                                                                                         |          | RM 1 1/4" |             | RM 1 5/8"   | RM 1 5/8"                                                               |
| Connector type and style     | N male                                                                                          | N female | N female  | 7-16 female | 7-16 female | 4.3-10 male                                                             |
| VSWR, max.                   | 1.04 @ DC to 0.5 GHz<br>1.06 @ 0.5 to 1.0 GHz<br>1.08 @ 1.0 to 2.2 GHz<br>1.11 @ 2.2 to 3.0 GHz |          |           |             |             | 1.02 @ DC to 1.0 GHz<br>1.04 @ 1.0 to 2.2 GHz<br>1.06 @ 2.2 to 2.75 GHz |
| Degree of protection (mated) | IP 68                                                                                           |          |           |             |             |                                                                         |
| Weight                       | 160 g                                                                                           |          | 630 g     | 300 g       |             | 620 g                                                                   |

## Radiating Cables



**BN A73143**

### SpinnerFlex® RM7/8"-50-FR

| Part Number (BN)                 | A73143                                                                                     |                         |            |            |            |            |
|----------------------------------|--------------------------------------------------------------------------------------------|-------------------------|------------|------------|------------|------------|
| Inner conductor diameter         | 9.3 mm                                                                                     | Copper tube             |            |            |            |            |
| Outer conductor diameter         | 23.5 mm                                                                                    | Overlapping copper foil |            |            |            |            |
| Diameter over jacket             | 27.0 mm                                                                                    | PE black                |            |            |            |            |
| Nominal impedance                | 50 Ohms                                                                                    |                         |            |            |            |            |
| Propagation velocity             | 88 %                                                                                       |                         |            |            |            |            |
| Capacitance                      | 76 pF/m                                                                                    |                         |            |            |            |            |
| DC breakdown voltage             | 10 kV                                                                                      |                         |            |            |            |            |
| Insulation resistance            | > 5 x 10 <sup>3</sup> MΩ *km                                                               |                         |            |            |            |            |
| VSWR (selected frequency ranges) | ≤ 1.3                                                                                      |                         |            |            |            |            |
| Frequency                        | 75 MHz                                                                                     | 150 MHz                 | 350 MHz    | 450 MHz    | 800 MHz    | 900 MHz    |
| Nom. attenuation dB/100 m        | 1.05                                                                                       | 1.60                    | 2.77       | 2.90       | 4.48       | 5.06       |
| Coupling loss (50% / 95%)        | 51 / 64 dB                                                                                 | 58 / 64 dB              | 53 / 60 dB | 53 / 60 dB | 59 / 64 dB | 58 / 64 dB |
| Minimum bending radius (single)  | 300 mm                                                                                     |                         |            |            |            |            |
| Max. tensile force               | 1300 N                                                                                     |                         |            |            |            |            |
| Recommended clamp spacing        | 1000 mm                                                                                    |                         |            |            |            |            |
| Weight                           | 0.45 kg/m                                                                                  |                         |            |            |            |            |
| Recommended temperature range    | Storage: -30 °C to +80 °C<br>Installation: -25 °C to +60 °C<br>Operation: -30 °C to +80 °C |                         |            |            |            |            |
| CPR class                        | Dca                                                                                        |                         |            |            |            |            |
| Halogen-free                     | IEC 60754-1, IEC 60754-2                                                                   |                         |            |            |            |            |

## Cable Monitoring System

**NEW**

**BN 43366A**

- Real-time monitoring of:
  - VSWR and distance to fault
  - Short and open circuit detection
  - Accuracy  $\pm 1.5$  m
- Measurement signal between 600 and 700 MHz coupled to monitored cable
- Two cable sections up to 2 km each can be supervised
- Monitoring of measurement results via web interface and SNMP alarming

Wall mount unit with diplexer

| Part Number (BN)                | 43366A                                                                       |
|---------------------------------|------------------------------------------------------------------------------|
| Frequency range                 | 600 - 700 MHz (customizable within 30 - 4400 MHz)                            |
| Pass band BTS port – cable port | 140 - 450 MHz & 850 - 960 MHz (customizable to other systems)                |
| Pass band VNA port – cable port | 600 - 700 MHz (customizable to other systems)                                |
| Insertion loss, max.            | 1.0 dB                                                                       |
| VSWR, max.                      | 1.25                                                                         |
| Out of band rejection, min.     | 50 dB                                                                        |
| Isolation, min.                 | 50 dB                                                                        |
| Impedance                       | 50 Ohm                                                                       |
| Output power                    | -30 dBm to -5 dBm (@ diplexer output)                                        |
| PIM                             | < -155 dBc @ 400 MHz, 900 MHz                                                |
| Connectors                      | 4.3 -10 female                                                               |
| Communication interface         | 2 x RJ-45 (LAN1, LAN2), 10/100 Mbit/s, LAN2 fixed to IP-address 192.168.1.11 |
| Power rating BTS port, max.     | 50 W (CW)                                                                    |
| Power consumption, max.         | 7 W (3 W in standby)                                                         |
| Mains adaptor voltage           | 80 to 264 VAC, 47 to 63 Hz                                                   |
| IP protection level             | IP 40 per EN 60529                                                           |
| Distance to fault resolution    | 1.5 m (depends on cable velocity; 1.2 m @ 80% velocity)                      |
| Maximum DTF distance            | 2000 m (cable loss less than 2.5 dB/100 m)                                   |
| Dimensions (W x H x L)          | 291 x 188 x 332 mm (incl. pole mount)                                        |
| Weight                          | 12.7 kg (incl. 2 x diplexer)                                                 |



Notes

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Notes

Lined area for notes, consisting of multiple horizontal lines.



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