

## HIGH INSULATION BI-DIRECTIONAL COUPLER

### (Coupled - Balun) – DBS Series

#### Main features

In RF cabling system with a grounded conductor (normally the screen of a coaxial cable) is sometime necessary to connect both ends of the cable to different grounds. It is frequent the case of radiating cables for cellular extenders, installed inside road or railway tunnels, where the radiofrequency's supply of the radiant cable is done from both sides of the tunnel and where the two cell's repeaters are connected to ground in completely different sites (imagine the case of a 15 km long tunnel).

In the above mentioned applications is necessary to transport the radiofrequency signals, coming from outside, in the middle of the tunnel on both cables to provide the so called 'hand-over action'; it is besides necessary to warrant that the two conductors of the two coaxial cables will be strongly insulated between them. The only solution is the installation of the High Insulation Bi-Directional Coupler that permits the travel of the two signals along both cables.

#### Electrical features

The main parameters that characterize this type of coupler are the following.

##### Insulation

On two conductors

##### Insulation voltage between the coaxial cables

Better than 4kVac

##### Characteristic impedance

50 ohm

##### Maximum applied power

46 dBm

##### RF Frequency field

800 – 1000 MHz

##### Bi-directional insertion losses

Less than 1,5 dB in band

##### GSM band (60 MHz) flatness

Less than 0,5 dB

##### Return losses on two ports

Better than 20 dB

#### Mechanical features

The mechanical construction, in plastic enclosure with protection degree IP65, permits the installation of this type of coupler along the track of road or railway tunnels. For maintenance's reasons the apparatus will be installed at man's height and connected to the main coaxial cable, that may be of standard or radiating type, by means of jumpers with male-male connectors.

The main mechanical characteristics are the following.

##### Enclosure

Plastic material

##### Protection degree

IP65

##### Connectors

2 x 7/16 Female  
2 x 4,1/9,5 Female

##### Approximative dimensions

Width = 100 mm  
Lenght = 220 mm  
Height = 100 mm

#### Available options

To equalize the coupler to various demands of the plant, it is possible to install on board the following accessories.

- High insulation transformer for 132-455 kHz tele signalling.
- DC 24-70 V current inserter
- Radiofrequency Test Points
- Extended RF band 400 – 1000 MHz
- Extended RF band 800 – 2000 MHz
- Plastic material double enclosure to isolate the connectors to avoid persons' accidental contacts
- ½ inch certified cable jumpers with double male-male connectors

## Mechanical dimensions



**DBS-77-0810-50**

