

Rosenberger



PASSIVE SYSTEMS

www.RosenbergerAP.com



Rosenberger HQ, Bavaria, Germany

INTRODUCTION

Rosenberger Hochfrequenztechnik GmbH & Co. was founded in Germany in 1958 and ranks among the leading manufacturers of high-speed interconnect solutions worldwide. To serve the continuous growth and demand of the global market, Rosenberg Asia Pacific Electronic Co., Ltd. was established in China in 1997. With its long tradition of excellence and providing creative solutions, Rosenberg Asia Pacific has excelled and earned an outstanding reputation in the Asia Pacific region.

Rosenberger Asia Pacific provides products and solutions for Telecommunication, Automotive Electronics, Information Technology, Test & Measurement, Aviation, and Medical & Industries.

A sales network covering the entire Asia Pacific region generates an annual turnover close to 450 million USD. Reliability and competitiveness are the cornerstones of this sustainable growth, resulting in long term partnerships with most of the leading companies in their respective industries.



Rosenberger Asia Pacific:

- A: Beijing – Headquarters, R&D, and Production
- B: Kunshan, Jiangsu – R&D and Production
- C: Pudong, Shanghai – R&D and Production
- D: India – R&D and Production
- E: Dongguan – R&D and Production

Rosenberger Asia Pacific maintains 6 modern manufacturing and R&D base locations in Beijing, Kunshan, Shanghai, and Dongguan in China; and New Delhi & Goa in India, the largest of its kind in the Asia Pacific Region. Rosenberger Asia Pacific is an ISO 9001 quality system, ISO 14001 environmental system, and ISO/TS16949 automotive industry system certified company. Equipped with advanced machining, electronic plating, assembly and testing centers and staffed by a large group of more than 300 R&D engineers, Rosenberger Asia Pacific has developed first class production assembly lines and exercises stringent product and quality control.

Presently, Rosenberger Asia Pacific maintains a far reaching network of R&D, Production, Sales and Service which extends to the whole Asia Pacific and Middle East area. For 60 years Rosenberger has established its brand all over the world. In the future, Rosenberger Asia Pacific will continue to provide excellent product solutions and services for its customers in the entire region.



MISSION STATEMENT

- Design, manufacture and deploy total solutions for telecommunication networks worldwide
- Create value for our customers through innovative products, customized services and cost effective solutions
- Maintain the highest quality standards, state-of-the-art manufacturing facilities and employ reliable supply chain management to achieve and exceed customer expectations
- Be socially responsible to our community and environment
- Be committed to employee's personnel development

CORE VALUE

- Value Innovation
- Customer Focus
- Sustainable Growth
- Social Responsibility

PRODUCT PORTFOLIOS

Telecommunication

Antenna Systems
Active Systems
Passive Systems
Feeder Systems
Microwave Backhaul Solutions
RF In-cabinet Solutions
Passive Intermodulation Measurement Systems
FTTA/FTTH Optical Fiber Solutions
OSP Fiber Optic Outdoor Plant Solutions
In-building Optical Network Connectivity Solutions
Low Frequency Cables and Components
Network Optimization Services

IT/Data Communication

Premise Network Cabling Products
Data Center/Cloud Computing Solutions
Intelligent Infrastructure Management System

Testing and Measurement

Test Cables
Precision Connectors
Calibrations
Accessories and Tools

Automotive

FAKRA Connectors and Cable Assemblies
HSD® System

Medical & Industries

Non-Magnetic RF Connectors
Non-Magnetic RF Cable Assemblies
Data/RF/Power/DC Hybrid Connectors and Assemblies
Customized Data/Power Connectivity System
Fiber Optic Connectivity Products

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ROSENBERGER PASSIVE COMPONENTS TECHNOLOGY

With the development of modern wireless communication technology such as GSM, CDMA, DCS, WLAN, UMTS, WiMAX and LTE network, more and more mobile wireless networks are deployed requiring wideband universal passive components. Rosenberger supplies complete passive components for wireless Distribution Antenna System(DAS) in the in-building coverage system including Couplers, Splitters, Hybrid Couplers, Duplexers, Filters, Diplexers and Triplexers. With the latest advanced technology of dielectric ceramic, Rosenberger offers customized high performance TE mode 2X2 and 4x4 Tx/Rx filter combiners for both TDD and FDD LTE systems.



PASSIVE SYSTEMS

COMBINERS

Main Features

- Suitable for co-siting purposes
- Reduce infrastructure cost
- Enable feeder sharing
- Suitable for indoor and outdoor applications
- Available as a single unit, or for Xpol antennas as double units
- Can be used as a combiner or in reciprocal function
- Wall or pole mounting
- Low insertion loss
- DC stop available as an accessory

Combiner Part Numbering Format

X x - x X - x X - x X - x X
① ② ③ ④ ⑤

①	②	③	④	⑤
CB: Cavity Combiner	2: 2-inputs	C: 800MHz	NF: N Connector, Female	Series No.
DCB: Dual Cavity Combiner	3: 3-inputs	G: 900MHz	DF: DIN Connector, Female	
	...	D: 1800MHz	NM: N Connector, Male	
		P: 1900MHz	DM: DIN Connector, Male	
		U: 2100MHz	SF: SMA Connector, Female	
		POI: POI	SM: SMA Connector, Male	

Note: The third "XX" can be single or multiple, for example: CB-3-GDU-DF-04, GDU consists of G, D and U, means the combiner supports 900MHz, 1800MHz, and 2100MHz.



PASSIVE SYSTEMS

850MHz & 900MHz Diplexer

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN. CB-2-CG-DF-17

Electrical Specifications

Frequency	CH1: 824~880MHz CH2: 885~960MHz
Return loss	< -18dB
Insertion loss	≤ 1.0dB
Isolation	≥ 50dB
Power capacity	300W
Intermodulation(3rd order)	< -150dBc@2x20W
DC/AISG characteristic	DC bypass for all ports
Impedance	50Ω

Environmental Specifications

Operating temperature range	-25°C~+65°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	265x201.8x68(mm)
Weight	≤ 6.5kg
Connector type	DIN female
Mounting	Wall or pole
Packing	1Pce in box

700MHz & 900MHz Diplexer

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN.

CB-2-LG-DF-07

Electrical Specifications

Frequency	CH1: 876~960MHz CH2: 694~862MHz
VSWR	≤ -19dB
Insertion loss	≤ 0.5dB(room temperature) ≤ 0.6dB(full temperature)
Isolation Band1 ↔ Band2	≥ 30dB
Intermodulation(3 rd order)	≤ -150dBc@2x20W
Input power per port	300W
DC characteristic	DC bypass for CH1, DC stop for CH2
Impedance	50Ω

Environmental Specifications

Operating temperature range	-40°C~+60°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	220x275x202(mm)
Weight	6.5kg
Connectors type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

1800MHz & 2100MHz & 2300MHz Triplexer, 4.3-10 Interface

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN.

CB-3-DWE-64F-05

Electrical Specifications

Frequency	CH1: 1710~1880MHz CH2: 1920~2170MHz CH3: 2300~2690MHz
VSWR	≤ -19dB
Insertion loss	≤ 0.3dB(room temperature) ≤ 0.4dB(full temperature)
Isolation CH1 & CH2 & CH3	≥ 30dB
Power handling	300W
Intermodulation(3 rd order)	≤ -150dBc@2x20W
DC characteristic	DC bypass for CH1, DC stop for CH2 and CH3
Impedance	50Ω

Environmental Specifications

Operating temperature range	-35°C~+60°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	282x168 x110(mm)
Weight	4kg
Connectors type	4.3-10 female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

800/900MHz & 1800/2100MHz & 2300/2600MHz Triplexer

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN.

CB-3-GDL-DF-02G

Electrical Specifications

Frequency	CH1: 790~960MHz CH2: 1710~2170MHz CH3: 2270~2700MHz
Return loss	≤ -20dB
Insertion loss	≤ 0.5dB
Isolation	≥ 70dB
Intermodulation(3 rd order)	≤ -150dBc@2×20W
Power handling	300W
DC option	DC bypass for all ports
Impedance	50Ω

Environmental Specifications

Operating temperature range	-10°C~+65°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	200×200×52(mm)
Weight	≤ 4.5kg
Connectors type	DIN female
Installation hoop	90~110mm
Mounting	Wall or pole

700/800/900MHz & 1800MHz & 2100MHz Triplexer, 4.3-10 Interface

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN. CB-3-GDU-64F-10

Electrical Specifications

Frequency	CH1: 698~960MHz CH2: 1710~1880MHz CH3: 1920~2170MHz
Return loss	≤ -20dB
Insertion loss	≤ 0.4dB
Isolation	≥ 50dB
Power handling	300W
Intermodulation(3rd order)	≤ -150dBc@2x20W
DC/AISG characteristic	DC bypass for all ports
Impedance	50Ω

Environmental Specifications

Operating temperature range	-10°C~+60°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	204×208×52.5(mm)
Weight	2.8kg
Connectors type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

700/800/900MHz & 1800MHz & 2100MHz & 2300/2600MHz Quadplexer, 4.3-10 Interface

Main Features

- High rejection, low VSWR and loss
- High power handling
- Low PIM
- Simple installation



PN. CB-4-GDWE-64F-01

Electrical Specifications

	CH1	CH2	CH3	CH4
Frequency	698~960MHz	1710~1880MHz	1920~2170MHz	2500~2700MHz
Return loss	≤ -20dB	≤ -20dB	≤ -20dB	≤ -20dB
Insertion loss	≤ 0.3dB	≤ 0.3dB	≤ 0.3dB	≤ 0.3dB
Isolation(dB)	≥ 50@1710~1880MHz ≥ 50@1920~2170MHz ≥ 50@2500~2700MHz	≥ 50@698~960MHz ≥ 50@1920~2170MHz ≥ 50@2500~2700MHz	≥ 50@698~960MHz ≥ 50@1710~1880MHz ≥ 50@2500~2700MHz	≥ 50@698~960MHz ≥ 50@1710~1880MHz ≥ 50@1920~2170MHz
Intermodulation (3rd order)	≤ -160dBc@2X20W			
Power handling	300W			
DC Characteristic	DC bypass for all ports			
Impedance	50Ω			

Environmental Specifications

Operating temperature range	-20°C~+65°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	222×270×52(mm)
Weight	6.0kg
Connector type	4.3-10 female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

700/800/900MHz & 1800MHz & 2100MHz & 2300MHz & 2600MHz Pentaplexer

Main Features

- High power handling
- Low insertion loss
- Low PIM
- Simple installation



PN. CB-5-GDULE-DF-16G

Electrical Specifications					
	CH1	CH2	CH3	CH4	CH5
Frequency	698~960MHz	1710~1880MHz	1920~2170MHz	2300~2390MHz	2500~2690MHz
Return loss	≥ 20dB	≥ 20dB	≥ 20dB	≥ 20dB	≥ 20dB
Insertion loss	≤ 0.5dB	≤ 0.5dB	≤ 0.5dB	≤ 0.5dB	≤ 0.5dB
Isolation	≥ 50dB				
Intermodulation (3rd order)	≤ -150dBc@2x20W				
Impedance	50Ω				
Power	300W				
DC/AISG Bypass	DC bypass for CH5, DC stop for other ports				
Environmental Specifications					
Operating temperature range	-10°C~+65°C				
Storage temperature range	-40°C~+85°C				
Relative humidity	5%~95%				
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted				
Barometric pressure	55KPa~106KPa				
Applications	IP67				
Mechanical Specifications					
Dimensions, L×W×H	254x240x54.5(mm)				
Net weight	≤ 6.0kg				
Connector type	7/16 female				
Mounting	Wall or pole				
Installation hoop	90~110mm				
Packing	1Pcs in box				

LTE1800MHz & GSM1800MHz Diplexer

Main Features

- Compact, low weight
- Low PIM
- Simple installation
- Double units



PN. DCB-2-DD-DF-01

Electrical Specifications

Frequency	CH1: 1710~1750/1805~1845MHz CH2: 1760~1785/1855~1880MHz
Return loss	≤ -18dB
Insertion loss	≤ 1.0dB
Isolation Band-1~Band-2	≥ 40dB
Power handling	300W
Intermodulation(3 rd order)	≤ -150dBc@2×20W
Impedance	50Ω
DC characteristic	DC bypass for all ports

Environmental Specifications

Operating temperature range	-30°C~+65°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

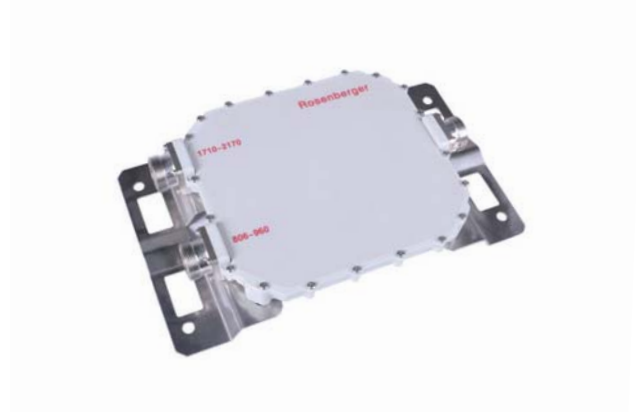
Mechanical Specifications

Dimension	213x289x92(mm)
Weight	<9.5kg
Connector type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

800/900MHz & 1800/2100MHz Diplexer

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN.	CB-2-CU-DF-H
Electrical Specifications	
Frequency	CH1: 790~960MHz CH2: 1710~2170MHz
Return loss	≤ -20dB
Insertion loss	CH1: ≤ 0.2dB CH2: ≤ 0.25dB
Isolation CH1 & CH2	≥ 48dB
Power handling	300W
Intermodulation(3 rd order)	≤ -150dBc@2×20W
Impedance	50Ω
DC characteristic	DC bypass for all ports
Environmental Specifications	
Operating temperature range	-40°C~+60°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67
Mechanical Specifications	
Dimension	291x176x49(mm)
Weight	1.7kg
Connector type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

380/700/800/900MHz & 1800/2100/2300/2600MHz Wide Band Diplexer

Main Features

- Compact, low weight
- High power handling
- Low PIM
- Simple installation



PN.

CB-2-LH-DF-02

Electrical Specifications

Frequency	CH1: 380~960MHz CH2: 1710~2700MHz
VSWR	≤ -18dB
Insertion loss	≤ 0.25dB
Isolation CH1 & CH2	≥ 50dB
Power handling	300W
Intermodulation(3 rd order)	≤ -150dBc@2×20W
DC characteristic	DC Bypass for CH1 & CH2
Impedance	50Ω

Environmental Specifications

Operating temperature range	-20°C~+70°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	181x103x52(mm)
Weight	1.7kg
Connector type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

1800MHz & 2100MHz & 2300/2600MHz Triplexer

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN. CB-3-DWE-DF-A02

Electrical Specifications

Frequency	CH1: 1710~1880MHz CH2: 1920~2170MHz CH3: 2300~2700MHz
Return loss/VSWR	≤ -20dB
Insertion loss	≤ 0.5dB
Isolation	≥ 50dB
Power handling	300W
Intermodulation(3 rd order)	≤ -153dBc@2×20W
DC characteristic	DC bypass for all ports
Impedance	50Ω

Environmental Specifications

Operating temperature range	-40°C~+65°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	204×185×54(mm)
Weight	≤ 4.0kg
Connector type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

700/800/900MHz & 1800MHz & 2100MHz Triplexer

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN. CB-3-GDU-DF-10

Electrical Specifications

Frequency	CH1: 698~960MHz CH2: 1710~1880MHz CH3: 1920~2170MHz
Return loss	≤ -20dB
Insertion loss	≤ 0.4
Isolation	≥ 50dB
Power handling	300W
Intermodulation(3 rd order)	≤ -150dBc@2×20W
DC characteristic	DC bypass for all ports
Impedance	50Ω

Environmental Specifications

Operating temperature range	-10°C~+60°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	204×208×52.5(mm)
Weight	2.8kg
Connector type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

700/800/900MHz & 1800MHz & 2100MHz & 2300/2600MHz Quadplexer

Main Features

- Compact, low weight
- High reliability
- Low PIM
- Simple installation



PN.

CB-4-GDWE-DF-08G

Electrical Specifications

	CH1	CH2	CH3	CH4
Frequency	698~960MHz	1710~1880MHz	1920~2170MHz	2270~2700MHz
Return loss/VSWR	≤ -20dB	≤ -20dB	≤ -20dB	≤ -20dB
Insertion loss	≤ 0.5dB	≤ 0.5dB	≤ 0.5dB	≤ 0.5dB
Isolation	≥ 50dB			
Power handling	300W			
Intermodulation(3 rd order)	≤ -155dBc@2×20W			
DC characteristic	DC bypass for all ports			
Impedance	50Ω			

Environmental Specifications

Operating temperature range	-30°C~+70°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	239.5x158.5x51.5(mm)
Weight	≤ 4.5kg
Connector type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

700MHz & 800/900MHz Double Units Diplexer

Main Features

- Compact, low weight
- High power handling
- Low PIM
- Simple installation



PN. DCB-2-CG-DF-18

Electrical Specifications

Frequency	CH1: 698~803 MHz CH2: 824~960MHz
Return loss	≤ -18dB
Insertion loss	≤ 0.8dB
Isolation	≥ 50dB
Power handling	300W
Intermodulation(3 rd order)	≤ -150dBc@2×20W
DC characteristic	DC bypass for all ports
Impedance	50Ω

Environmental Specifications

Operating temperature range	-25°C~+65°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	204x165x128(mm)
Weight	≤ 7kg
Connector type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

1800MHz & 2300MHz Double Units Diplexer

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN.

DCB-2-LG-DF-01

Electrical Specifications

Frequency	CH1: 1710~1880MHz CH2: 2300~2400MHz
Return loss	≤ -20dB
Insertion loss	≤ 0.4dB
Isolation CH1 & CH2	≥ 50dB
Power handling	300W
Intermodulation(3 rd order)	≤ -150dBc@2×20W
Impedance	50Ω

Environmental Specifications

Operating temperature range	-10°C~+60°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	83x145x84(mm)
Weight	2.6kg
Connector type	DIN female
Mounting	Wall or pole
Installation hoop	90~110mm
Packing	1Pce in box

700MHz & 900MHz Double Units Diplexer

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN. DCB-2-LG-DF-11

Electrical Specifications

Frequency	CH1: 703~803MHz CH2: 885~960MHz
Return loss	≤ -20dB
Insertion loss	≤ 1.0dB
Rejection	≥ 50dB
Power handling	300W
Intermodulation(3 rd order)	≤ -155dBc@2x20W
Impedance	50Ω

Environmental Specifications

Operating temperature range	-30°C~+65°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Lightning protection	5kA(8/20us) RF ports, M6 earth stud fitted
Barometric pressure	55KPa~106KPa
Applications	IP67

Mechanical Specifications

Dimension	245X128x127.7(mm)
Weight	7kg
Connector type	DIN female
Mounting	Wall or pole
Structure	90~110mm
Packing	1Pce in box

FILTERS

Main Features

- Suitable for indoor and outdoor applications
- Available as a single unit, or for Xpol antennas as double units
- Wall or pole mounting
- Low insertion loss
- DC stop available as an accessory
- Dielectric technology to achieve high rejection with low insertion loss

Filter Part Numbering Format

X x - x X - x X - x X - x X

① ② ③ ④ ⑤

①

FT: filter

BS: Band Stop Filter

②

08: 800MHz

09: 900MHz

18: 1800MHz

19: 1900MHz

21: 2100MHz

③

Bandwidth

④

NF: N Connector, Female

DF: DIN Connector, Female

NM: N Connector, Male

DM: DIN Connector, Male

SF: SMA Connector, Female

SM: SMA Connector, Male

⑤

Series No.



PASSIVE SYSTEMS

Band Pass Filter

800MHz Double Units Filter

Main Features

- Compact, low weight
- High reliability
- Low PIM
- Simple installation



PN. **DFT-08-56-DF-A02**

Electrical Specifications

Frequency	824~880MHz
Return loss	$\leq -18\text{dB}$
Insertion loss	$\leq 0.55\text{dB}@875\sim 880\text{MHz}$ $\leq 0.3\text{dB}@824\sim 875\text{MHz}$
Rejection	$\geq 50\text{dB}@885\sim 960\text{MHz}$
Power handling	$\leq 150\text{W AVG}$ for TX band
Intermodulation(3 rd order)	$\leq -153\text{dBc}@2\times 20\text{W}$
DC bypass	Support
Impedance	50 Ω

Environmental Specifications

Operating temperature range	0°C~+55°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP67

Mechanical Specifications

Dimension	263x139x152(mm)	
Weight	6.7kg	
Connectors type	BTS	DIN female
	ANT	DIN female
Mounting	Wall or pole	
Structure	Double units	
Packing	1Pce in box	

900MHz Double Units Filter with Minimum Guard Band

Main Features

- Compact, low weight
- High reliability
- Low PIM
- Simple installation



PN.

DFT-09-55-DF-02

Electrical Specifications

Frequency	895~950MHz
Return loss	≤ -18dB
Insertion loss	≤ 3.0dB@895~897.5MHz ≤ 1.1dB@897.5~898.5MHz ≤ 0.5dB@898.5~905MHz ≤ 0.5dB@940~950MHz
Rejection	≥ 45dB@790~894MHz
Power handling	200W AVG for TX band
Intermodulation(3 rd order)	≤ -150dBc@2x20W
DC bypass	Support
Impedance	50Ω

Environmental Specifications

Operating temperature range	0°C~+55°C
Storage temperature range	-40°C~+85°C
Relative humidity	0%~95%
Barometric pressure	55KPa~106KPa
Application	IP67

Mechanical Specifications

Dimension	263x139x152(mm)	
Weight	≤ 8kg	
Connectors type	BTS	DIN female
	ANT	DIN female
Mounting	Wall or pole	
Structure	Double units	
Packing	1Pce in box	

900MHz Double Units Filter with High Rejection

Main Features

- Compact, low weight
- High reliability
- Low PIM
- Simple installation



PN. **DFT-09-75-DF-A01**

Electrical Specifications

Frequency	885~960MHz
Return loss	≤ -18dB
Insertion loss	≤ 1.3dB@885~890MHz ≤ 0.3dB@905~960MHz
Rejection	≥ 65dB@869~880MHz ≥ 55dB@824~869MHz
Power handling	150W AVG for TX band
Intermodulation(3 rd order)	≤ -153dBc@2x20W
DC bypass	Support
Impedance	50Ω

Environmental Specifications

Operating temperature range	0°C~+55°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP67

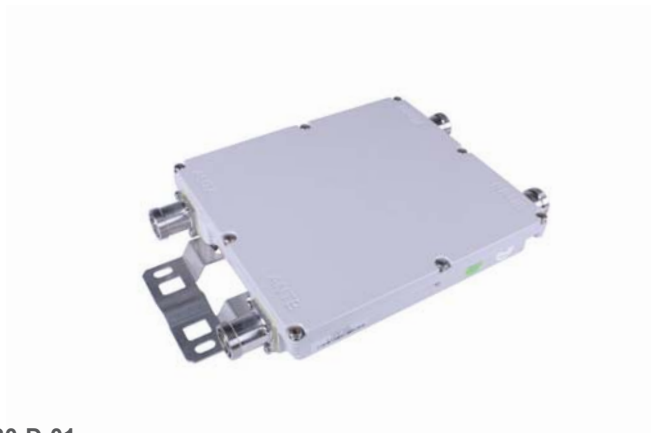
Mechanical Specifications

Dimension	263x139x152(mm)	
Weight	6.7kg	
Connectors type	BTS	DIN female
	ANT	DIN female
Mounting	Wall or pole	
Structure	Double units	
Packing	1Pce in box	

Customized 900MHz Filter

Main Features

- Compact, low weight
- High reliability
- Low PIM
- Simple installation



PN.

DFT-09-30-D-01

Electrical Specifications

Frequency	885~915MHz/930~960MHz
Return loss	≤ -16dB
Insertion loss	≤ 1.0dB
Rejection	≥ 40dB@10~880MHz
Power handling	150W AVG for TX band
Intermodulation(3 rd order)	≤ -150dBc@2×20W
Impedance	50Ω

Environmental Specifications

Operating temperature range	-40°C~+55°C
Storage temperature range	-40°C~+75°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP67

Mechanical Specifications

Dimension	252x220x44(mm)	
Weight	4kg	
Connectors type	BTS	DIN female
	ANT	DIN female
Mounting	Wall or pole	
Structure	Double units	
Packing	1Pce in box	

DUPLEXERS

Main Features

- High isolation, low VSWR and insertion loss, to ensure that the downlink signals will not affect the uplink signals
- Available for indoor and outdoor applications
- Easy installation

Duplexer Part Numbering Format

X X - x X - x X - x X - x X
① ② ③ ④ ⑤

①	②	③	④	⑤
DX: Duplexer	08: 800MHz	Band Width	NF: N Connector, Female	Series No.
DDX: Dual Duplexer	09: 900MHz		DF: DIN Connector, Female	
	18: 1800MHz		NM: N Connector, Male	
	19: 1900MHz		DM: DIN Connector, Male	
	21: 2100MHz		SF: SMA Connector, Female	
	24: 2400MHz		SM: SMA Connector, Male	



PASSIVE SYSTEMS

800MHz Duplexer

Main Features

- Compact, low weight
- High reliability
- Low PIM
- Simple installation



PN.

DX-08-15-NF-01

Electrical Specifications

Frequency	RX: 820~835MHz	TX: 865~880MHz
VSWR	≤ -19dB	
Insertion loss	≤ 1.0dB	
Isolation RX & TX	≥ 80dB	
Power handling	Input Power (RMS) ≥ 200W Input Power (PEP) ≥ 1000W	
Intermodulation	≤ -150dBc@2x20W	
Impedance	50Ω	

Environmental Specifications

Operating temperature range	-40°C~+55°C
Storage temperature range	-40°C~+75°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP65

Mechanical Specifications

Dimension	220x145x53(mm)
Weight	2.5kg
Connectors type	N female
Mounting	Plane
Packing	1Pce in box

900MHz Duplexer

Main Features

- Compact, low weight
- High reliability
- Low PIM
- Simple installation



PN.

DX-09-30-NF-01

Electrical Specifications

Frequency	RX: 885~915MHz	TX: 930~960MHz
VSWR	≤ -19dB	≤ -19dB
Insertion loss	≤ 1.2dB	≤ 0.8dB
Isolation	≥ 80dB	
Power handling	Input Power (RMS) ≥ 200W Input Power (PEP) ≥ 1000W	
Intermodulation	≤ -150dBc@2x20W	
Impedance	50Ω	

Environmental Specifications

Operating temperature range	-40°C~+55°C
Storage temperature range	-40°C~+75°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP65

Mechanical Specifications

Dimension	200x165x53(mm)
Weight	≤ 2.5kg
Connectors type	N female
Mounting	Plane
Packing	1Pce in box

1800MHz Duplexer

Main Features

- Compact, low weight
- High reliability
- Low PIM
- Simple installation



PN.

DX-18-75-NF-15

Electrical Specifications

Frequency	RX:1710~1785MHz	TX: 1805~1880MHz
VSWR	≤ -19dB	≤ -19dB
Insertion loss	≤ 1.2dB	≤ 0.8dB
Isolation CH1 & CH2	≥ 80dB	
Power handling in TX path	Input Power (RMS) ≥ 200W Input Power (PEP) ≥ 1000W	
Intermodulation	≤ -150dBc@2×20W	
Impedance	50Ω	

Environmental Specifications

Operating temperature range	-40°C~+55°C
Storage temperature range	-40°C~+75°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP65

Mechanical Specifications

Dimension	184x168x48(mm)
Weight	≤ 1.9kg
Connectors type	N female
Mounting	Plane
Packing	1Pce in box

2100MHz Duplexer

Main Features

- Compact, low weight
- High reliability
- Low PIM
- Simple installation



PN.

DX-21-60-NF-10

Electrical Specifications

Frequency	RX: 1920~1980MHz	TX: 2110~2170MHz
VSWR	≤ 1.25	≤ 1.25
Insertion loss	≤ 1.2dB	≤ 0.8dB
Isolation	≥ 80dB	
Power handling	Input Power (RMS) ≥ 200W Input Power (PEP) ≥ 1000W	
Intermodulation	≤ -150dBc@2x20W	
Impedance	50Ω	

Environmental Specifications

Operating temperature range	-40°C~+55°C
Storage temperature range	-40°C~+75°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP65

Mechanical Specifications

Dimension	144x133x43(mm)
Weight	≤ 1.5kg
Connectors type	N female
Mounting	Plane
Packing	1Pcs in box

COUPLERS

Main Features

- Covering from 5dB to 40dB
- Modular architecture for design flexibility
- Enhanced feature for easy installation and maintenance
- High performance and reliability
- Compact size for minimized environmental and visual impact

Coupler Part Numbering Format

X x - - x X - - x X - - x X - - x X

① ② ③ ④ ⑤

①	②	③	④	⑤
DC: Cavity Directional Coupler	5: 5dB 6: 6dB 7: 7dB 8: 8dB 10: 10dB 12: 12dB 13: 13dB 15: 15dB 20: 20dB 25: 25dB 30: 30dB 40: 40dB	4F: 1710~2500MHz 5F: 800~2200MHz 6F: 800~2500MHz 7F: 800~2700MHz 8F: 350~2700MHz AF: 800~960MHz BF: 1710~2170MHz CF: 700~960MHz DF: 300~500MHz EF: 120~240MHz FF: 300~900MHz	NF: N Connector, Female DF: DIN Connector, Female NM: N Connector, Male DM: DIN Connector, Male SF: SMA Connector, Female SM: SMA Connector, Male	Void

Coupler Series

Main Features

- Guaranteed PIM performance
- High isolation, low VSWR and loss
- High power handling



PN.		DC-XX-7F-NF	DC-XX-7F-NF-01	DC-XX-8F-64F-T
Electrical Specifications				
Frequency		800~2700MHz	698~2700MHz	698~2700MHz
Return loss		≤ -19dB	≤ -19dB	≤ -19dB
5dB Coupler	Coupling attenuation	5 ± 1.0dB	5 ± 1.0dB	5 ± 1.0dB
	Insertion loss	1.7 ± 0.5dB	≤ 2.1dB	≤ 2.1dB
6dB Coupler	Coupling attenuation	6 ± 1.0dB	6 ± 1.0dB	6 ± 1.0dB
	Insertion loss	1.3 ± 0.4dB	≤ 1.6dB	≤ 1.6dB
7dB Coupler	Coupling attenuation	7 ± 1.0dB	7 ± 1.0dB	7 ± 1.0dB
	Insertion loss	1.2 ± 0.3dB	≤ 1.5dB	≤ 1.5dB
8dB Coupler	Coupling attenuation	8 ± 1.0dB	8 ± 1.0dB	8 ± 1.0dB
	Insertion loss	1.1 ± 0.3dB	≤ 1.05dB	≤ 1.05dB
10dB Coupler	Coupling attenuation	10 ± 1.0dB	10 ± 1.0dB	10 ± 1.0dB
	Insertion loss	0.5 ± 0.3dB	≤ 0.7dB	≤ 0.7dB
13dB Coupler	Coupling attenuation	13 ± 1.1dB	13 ± 1.0dB	13 ± 1.0dB
	Insertion loss	0.4 ± 0.2dB	≤ 0.6dB	≤ 0.6dB
15dB Coupler	Coupling attenuation	15 ± 1.2dB	15 ± 1.0dB	15 ± 1.0dB
	Insertion loss	0.2 ± 0.2dB	≤ 0.4dB	≤ 0.4dB
20dB Coupler	Coupling attenuation	20 ± 1.5dB	20 ± 1.0dB	20 ± 1.0dB
	Insertion loss	0.1 ± 0.1dB	≤ 0.2dB	≤ 0.2dB
30dB Coupler	Coupling attenuation	30 ± 1.5dB	30 ± 1.5dB	30 ± 1.5dB
	Insertion loss	0.1 ± 0.1dB	≤ 0.2dB	≤ 0.2dB
40dB Coupler	Coupling attenuation	40 ± 1.5dB	40 ± 1.5dB	40 ± 1.5dB
	Insertion loss	≤ 0.2dB	≤ 0.2dB	≤ 0.2dB
Directivity		20dB	20dB	20dB
Intermodulation(3 rd order)		≤ -150dBc@2×20W	≤ -150dBc@2×20W	≤ -161dBc@2×20W
Impedance		50Ω	50Ω	50Ω
Power handling		200W	200W	300W
Environmental Specifications				
Operating temperature range		-35°C~+75°C	-35°C~+75°C	-35°C~+75°C
Relative humidity		0~95%	0~95%	0~95%
Application		IP65	IP65	IP65
Mechanical Specifications				
Dimension		119 × 57 × 22(mm)	119 × 57 × 22(mm)	121×54×30(mm)
Weight		370g	370g	550g
Connector type		N female	N female	4.3-10 female

SPLITTERS

Main Features

- 2, 3, 4-way available
- Design breakthroughs for best-in-class performance and value
- Broad frequency covering from 350~3800MHz
- Excellent performance

Splitter Part Numbering Format

X X - - X X - - X X - - X X - - X X
 ① ② ③ ④ ⑤

①	②	③	④	⑤
S: Cavity Power Splitter	2: 2-way	4F: 1710~2500MHz	NF: N Connector, Female	Void
SM: Microstrip Power Splitter	3: 3-way	5F: 800~2200MHz	DF: DIN Connector, Female	
	4: 4-way	6F: 800~2500MHz	NM: N Connector, Male	
		7F: 800~2700MHz	DM: DIN Connector, Male	
		8F: 350~2700MHz	SF: SMA Connector, Female	
		9F: 698~3800MHz	SM: SMA Connector, Male	
		AF: 800~960MHz		
		BF: 1710~2170MHz		
		CF: 700~960MHz		
		DF: 300~500MHz		
		EF: 120~240MHz		
		FF: 300~900MHz		

Splitter Series

Main Features

- Guaranteed PIM performance
- Low VSWR and loss
- High power handling



PN.		S-XX-7F-NF-01	S-XX-7F-NF	S-XX-8F-64F-T
Electrical Specifications				
Frequency		698~2700MHz	800~2700MHz	698~2700MHz
VSWR	2Way	≤ 1.2	≤ 1.25	≤ 1.2
	3way	≤ 1.3	≤ 1.25	≤ 1.3
	4way	≤ 1.3	≤ 1.25	≤ 1.3
Split loss	2Way	3.0dB	3.0dB	3.0dB
	3way	4.8dB	4.8dB	4.8dB
	4way	6.0dB	6.0dB	6.0dB
Insertion loss	2Way	± 0.2dB	± 0.3dB	± 0.2dB
	3way	± 0.2dB	± 0.3dB	± 0.2dB
	4way	± 0.2dB	± 0.3dB	± 0.4dB
Power handling	2Way	300W	300W	300W
	3way	300W	300W	300W
	4way	300W	300W	300W
Intermodulation(3 rd order)		≤ -150dBc@2x20W	≤ -150dBc@2x20W	≤ -161dBc@2×20W
Impedance		50Ω	50Ω	50Ω
Environmental Specifications				
Operating temperature range			-35°C~+75°C	
Relative humidity			0~95%	
Degree of protection			IP65	
Mechanical Specifications				
Connector type		N female	N female	4.3-10 female

ATTENUATORS

Main Features

- Wide frequency band
- Power handling ratings from 5 - 200Watt
- Low VSWR
- Low PIM models available
- Flatness attenuation value
- Excellent capacity in anti-pulse and anti-burnout
- Rugged aluminum housing for long lasting, reliable performance

Attenuator Part Numbering Format

X x - x X - x X - x X - x X

① ② ③ ④ ⑤

①	②	③	④	⑤
A: Coaxial Fixed Attenuator	3: 3dB 5: 5dB 6: 6dB 10: 10dB 15: 15dB 20: 20dB 30: 30dB xx: xx dB	2: 2w limit power 5: 5w limit power 10: 10W limit power 20: 20W limit power 30: 30W limit power 50: 50W limit power xx: xx w limit power	N: N male to N female D: DIN male to DIN female	Void



PASSIVE SYSTEMS

Attenuator Series



PN.

Electrical Specifications

	Frequency Range(GHz)	Attenuation value & accuracy(dB)					Max VSWR	Power handling	PIM
		1-9	10	20	30	40			
A-XX-2-N/A-XX-5-N	DC-3GHz	±0.4	±0.5	±0.5	±0.6	±0.6	1.20	2W/5W	--
A-XX-10-N/A-XX-25-N	DC-3GHz	±0.4	±0.5	±0.6	±0.6	±1.0	1.20	10W/25W	--
A-XX-50-D	DC-3GHz	±0.6	±0.6	±0.6	±0.75	±1.0	1.20	50W	--
A-XX-50-D-T	DC-3GHz	±0.6	±0.6	±0.6	±0.75	±1.0	1.20	50W	-120dBc
A-XX-50-D-T1	698-2700MHz	±1.0	±1.0	±1.0	±1.5	±1.5	1.25	50W	-150dBc
A-XX-50-N	DC-3GHz	±0.6	±0.6	±0.6	±0.75	±1.0	1.20	50W	--
A-XX-50-N-T	DC-3GHz	±0.6	±0.6	±0.6	±0.75	±1.0	1.20	50W	-120dBc
A-XX-50-N-T1	698-2700MHz	±1.0	±1.0	±1.0	±1.5	±1.5	1.25	50W	-150dBc
A-XX-100-D	DC-3GHz	--	±0.6	±0.6	±0.75	±0.75	1.30	100W	--
A-XX-100-D-T	DC-3GHz	--	±0.6	±0.6	±0.75	±0.75	1.30	100W	-120dBc
A-XX-100-D-T1	698-2700MHz	±1.0	±1.0	±1.0	±1.5	±1.5	1.25	100W	-150dBc
A-XX-100-N	DC-3GHz	--	±0.5	±1.0	±1.2	±1.5	1.35	100W	--
A-XX-100-N-T	DC-3GHz	--	±0.5	±1.0	±1.2	±1.5	1.35	100W	-120dBc
A-XX-100-N-T1	698-2700MHz	±1.0	±1.0	±1.0	±1.5	±1.5	1.25	100W	-150dBc
A-XX-150-D	DC-3GHz	--	±1.5	±1.0	±0.8	±0.8	1.30	150W	--
A-XX-150-D-T	DC-3GHz	--	±1.5	±1.0	±0.8	±0.8	1.30	150W	-120dBc
A-XX-150-N	DC-3GHz	--	±1.5	±1.0	±0.8	±0.8	1.30	150W	--
A-XX-150-N-T	DC-3GHz	--	±1.5	±1.0	±0.8	±0.8	1.30	150W	-120dBc
A-XX-200-D	DC-3GHz	--	±1.25	±1.25	±0.8	±0.8	1.35	200W	--
A-XX-200-D-T	DC-3GHz	--	±1.25	±1.25	±0.8	±0.8	1.35	200W	-120dBc
A-XX-200-N	DC-3GHz	--	±1.25	±1.25	±0.8	±0.8	1.35	200W	--
A-XX-200-N-T	DC-3GHz	--	±1.25	±1.25	±0.8	±0.8	1.35	200W	-120dBc

XX refer to attenuation in dB

Environmental Specifications

Operating temperature -40°C~+120°C

Relative humidity 5%~95%

Application Indoor

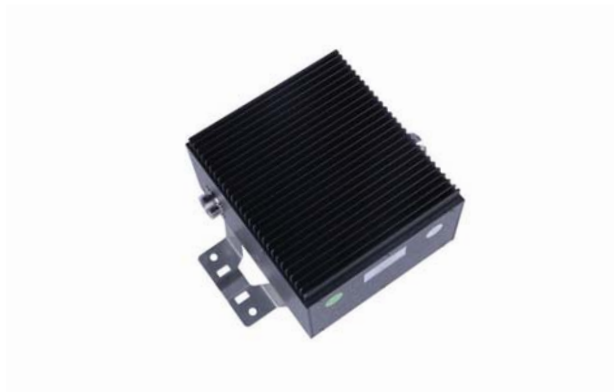
Mechanical Specifications

Connector type N male to N female/DIN male to DIN female

High Power Handling & Low PIM Attenuator

Main Features

- Flatness attenuation value
- Excellent capacity in anti-pulse and anti-burnout
- High reliability
- Low PIM

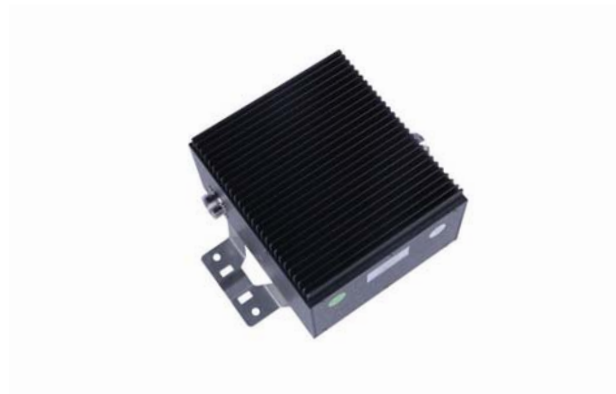


PN.	A-XX-100-D-T3									
Electrical Specifications										
Frequency	698~2700MHz									
VSWR	≤ 1.25									
Attenuation value & Accuracy	5	6	7	8	10	13	15	20	30	40
	±1.0	±1.0	±1.0	±1.0	±1.2	±1.2	±1.2	±1.5	±1.5	±1.5
Power handling	100W(20°C)									
Intermodulation(3 rd order)	≤ -160dBc@2×20W									
Environmental Specifications										
Operating temperature range	-30°C~+70°C									
Storage temperature range	-40°C~+85°C									
Relative humidity	5%~95%									
Barometric pressure	55KPa~106KPa									
Application	Indoor									
Mechanical Specifications										
Dimension	186x212x154.5(mm)									
Weight	4.2kg									
Connectors type	Din male to DIN female									
Packing	1Pce in box									

High Power Handling & Low PIM Attenuator

Main Features

- Flatness attenuation value
- Excellent capacity in anti-pulse and anti-burnout
- High reliability
- Low PIM



PN. A-XX-150-D-T3

Electrical Specifications

Frequency	698~2700MHz									
VSWR	≤ 1.25									
Attenuation value & Accuracy	3	5	6	7	8	10	15	20	30	40
	±0.6	±1.0	±1.0	±1.0	±1.0	±1.2	±1.2	±1.5	±1.5	±1.5
Power handling	150W(20°C)									
Intermodulation(3 rd order)	≤ -160dBc@2×20W									

Environmental Specifications

Operating temperature range	30°C~+70°C									
Storage temperature range	-40°C~+85°C									
Relative humidity	5%~95%									
Barometric pressure	55KPa~106KPa									
Application	IP65									

Mechanical Specifications

Dimension	186x212x154.5(mm)									
Weight	4.2kg									
Connectors type	Din male to DIN female									
Packing	1Pce in box									

HYBRIDS

Main Features

- Support all the 2G, 3G and 4G bands
- Rugged aluminum housing for long lasting, reliable performance
- Low PIM
- Low insertion loss and excellent VSWR
- Easy installation

Hybrid Part Numbering Format

X x - x X - x X - x X - x X

① ② ③ ④ ⑤

①

H: Cavity Hybrid Bridge(3dB Bridge)
HM: Microstrip Hybrid Bridge(3dB Bridge)

③

Void(for special requirements)

⑤

Void

②

4F: 1710~2500MHz
5F: 800~2200MHz
6F: 800~2500MHz
7F: 800~2700MHz
AF: 800~960MHz
BF: 1710~2170MHz
CF: 700~960MHz

④

NF: N Connector, Female
DF: DIN Connector, Female
NM: N Connector, Male
DM: DIN Connector, Male
SF: SMA Connector, Female
SM: SMA Connector, Male



PASSIVE SYSTEMS

Wide Band 2x2 Hybrid Coupler

Main Features

- Wide band design
- Low PIM
- High reliability
- Simple installation



PN.	HM-3-8F-64F-T	HM-3-7F-NF-01	HM-3-7F-DF-02
Electrical Specifications			
Frequency	698~2700MHz	698~2700MHz	698~2700MHz
Return loss, all ports	≤ -18dB	≤ -19dB	≤ -19dB
Distribution loss	3.05 ± 0.5dB	3.05 ± 0.55dB	3.05 ± 0.55dB
Isolation	≥ 23dB	≥ 20dB	≥ 20dB
Power handling	300W	200W	300W
Intermodulation(3 rd order)	≤ -161dBc@2×20W	≤ -150dBc@2×20W	≤ -150dBc@2×20W
Impedance		50Ω	
Environmental Specifications			
Operating temperature range		-35°C~+75°C	
Storage temperature range		-40°C~+85°C	
Relative humidity		5%~95%	
Barometric pressure		55KPa~106KPa	
Application		IP65	
Mechanical Specifications			
Dimension	194×57×33(mm)	138 × 47 × 26(mm)	147 × 44 × 36(mm)
Connector type	4.3-10 female	N female	DIN female
Input port	2	2	2
Output port	2	2	2

Wide Band 4x4 Hybrid Coupler

Main Features

- Wide band design
- Low PIM
- High reliability
- Simple installation



PN.	HM-6-8F-NF-01	HMP-6-8F-DF-01
Electrical Specifications		
Frequency	698~2700MHz	
Return loss	≤ -18dB	
Distribution loss	7.0dB	6.9dB
Isolation	≥ 18dB	≥ 23dB
Power handling	250W	500W
Intermodulation(3 rd order)	≤ -150dBc@2×20W	
Impedance	50Ω	
Environmental Specifications		
Operating temperature range	-25°C~+75°C	-35°C~+75°C
Storage temperature range	-40°C~+85°C	-40°C~+85°C
Relative humidity	5%~95%	5%~95%
Barometric pressure	55KPa~106KPa	
Application	Indoor	Indoor
Mechanical Specifications		
Dimension	220 × 100 × 53.5(mm)	250×94×60(mm)
Weight	2.7kg	3.2kg
Connector type	N female	DIN female
Input port	4	4
Output port	4	4
Mounting	Plane mount	

900MHz 4x2 Hybrid Combiner

Main Features

- Contains 800&900MHz band
- Low PIM
- High reliability
- Simple installation



PN. HM-3-AF-DF-04D

Electrical Specifications

Frequency	698~960MHz
Return loss	$\leq -20\text{dB}$
Distribution loss	$3.1\pm 0.3\text{dB}$
Isolation	$\geq 30\text{dB}$
Power handling	100W per port(room temperature)
Intermodulation(3 rd order)	$\leq -150\text{dBc}@2\times 20\text{W}$
Impedance	50Ω

Environmental Specifications

Operating temperature range	$-20^{\circ}\text{C}\sim +65^{\circ}\text{C}$
Storage temperature range	$-40^{\circ}\text{C}\sim +85^{\circ}\text{C}$
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP67

Mechanical Specifications

Dimension	140x200x91(mm)
Weight	$\leq 5.0\text{g}$
Connector type	DIN female
Input port	4
Output port	2
Mounting	Wall or pole
Packing	1Pce in box

1800MHz 4x2 Hybrid Combiner

Main Features

- Contains 1800&2100MHz band
- Low PIM
- High reliability
- Simple installation



PN. HM-3-BF-DF-04D

Electrical Specifications

Frequency	1710~2200MHz
Return loss	≤ -20dB
Distribution loss	3.1±0.2dB
Isolation	≥ 25dB
Power handling	100W per port(room temperature)
Intermodulation(3 rd order)	≤ -150dBc@2×20W
Impedance	50Ω

Environmental Specifications

Operating temperature range	-20°C~+65°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP67

Mechanical Specifications

Dimension	140x204x91(mm)
Weight	≤ 5.0kg
Connector type	DIN female
Input port	4
Output port	2
Mounting	Wall or pole
Packing	1Pce in box

Wide Band 2x1 Low PIM Hybrid Combiner

Main Features

- Wide band design
- Low PIM
- High reliability
- Simple installation



PN. HM-3-8F-DF-02

Electrical Specifications

Frequency	698~2700MHz	
VSWR, all ports	≤ 1.15	
Insertion loss	698~800MHz	≤ 3.1±0.5dB
	800~2700MHz	≤ 3.1±0.4dB
Isolation	≥ 25dB	
Power handling(per single Port)	100W	
Intermodulation(3 rd order)	≤ -155dBc@2×20W	
Impedance	50Ω	

Environmental Specifications

Operating temperature range	-35°C~+65°C
Storage temperature range	-40°C~+85°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP67

Mechanical Specifications

Connector type	DIN female
Input port	2
Output port	1
Mounting	Wall or pole
Packing	1Pce in box

900MHz 2x2 High Isolation Hybrid Matrix

Main Features

- Used for 900MHz band
- Low PIM
- High reliability
- Simple installation



PN. HM-3-AF-DF-05

Electrical Specifications

Frequency	880~915/925~960MHz
Return loss	≥ 18dB for Input Ports
Insertion loss	≤ 6.2dB
Isolation	≥ 40dB
Power handling	100W
Intermodulation(3 rd order)	≤ -150dBc@2×20W
Impedance	50Ω

Environmental Specifications

Operating temperature range	0°C~+55°C
Storage temperature range	-40°C~+85°C
Application	IP67

Mechanical Specifications

Dimension	340x220x450(mm)
Weight	18.0kg
Connector type	DIN female
Input port	2
Output port	2
Mounting	Wall
Packing	1Pce in box

850MHz 2x2 High Isolation Hybrid Matrix

Main Features

- Used for 800MHz band
- Low PIM
- High reliability
- Simple installation



PN. HM-3-AF-DF-06

Electrical Specifications

Frequency	824~849/869~894MHz
Return loss	≥ 18 dB for Input Ports
Insertion loss	≤ 5.8 dB
Isolation	≥ 40 dB
Power handling	100W
Intermodulation(3 rd order)	≤ -150 dBc@2x20W
Impedance	50 Ω

Environmental Specifications

Operating temperature range	0°C~+55°C
Storage temperature range	-40°C~+85°C
Application	IP67

Mechanical Specifications

Dimension	340x220x450(mm)
Weight	18.0kg
Connector type	DIN female
Input port	2
Output port	2
Mounting	Wall
Packing	1Pce in box

900MHz 4x4 High Isolation Hybrid Matrix

Main Features

- Used for 900MHz band
- Low PIM
- High reliability
- Simple installation



PN. HM-6-AF-DF-01

Electrical Specifications

Frequency	880~915/925~960MHz
Return loss	≥ 18dB for Input Ports
Insertion loss	≤ 9.9dB
Isolation	≥ 40dB
Power handling	100W
Intermodulation(3 rd order)	≤ -150dBc@2×20W
Impedance	50Ω

Environmental Specifications

Operating temperature range	0°C~+55°C
Storage temperature range	-40°C~+85°C
Application	IP67

Mechanical Specifications

Dimension	440x311x550(mm)
Weight	38.0kg
Connector type	DIN female
Input port	4
Output port	4
Mounting	Wall
Packing	1Pce in box

850MHz 4x4 High Isolation Hybrid Matrix

Main Features

- Used for 800MHz band
- Low PIM
- High reliability
- Simple installation



PN. HM-6-AF-DF-02

Electrical Specifications

Frequency	824~849/869~894MHz
Return loss	≥ 18dB for Input Ports
Insertion loss	≤ 9.5dB
Isolation	≥ 40dB
Power handling	100W
Intermodulation(3 rd order)	≤ -150dBc@2×20W
Impedance	50Ω

Environmental Specifications

Operating temperature range	0°C~+55°C
Storage temperature range	-40°C~+85°C
Application	IP67

Mechanical Specifications

Dimension	440x311x550(mm)
Weight	35.0kg
Connector type	DIN female
Input port	4
Output port	4
Mounting	Wall
Packing	1Pce in box

TERMINATION LOADS

Main Features

- Power handling ratings from 5 - 200Watt
- Wide frequency band
- Low VSWR
- Low PIM models available
- Excellent capacity in anti-pulse and burnout
- Easy to be installed

Termination load Part Numbering Format

X X - - x X - - x X - - x X - - x X

① ② ③ ④ ⑤

①	②	③	④	⑤
L: Termination Load	2: 2W 5: 5W 10: 10W 20: 20W 30: 30W 50: 50W xx: xxW	Void (for special requirements)	NF: N Connector, Female DF: DIN Connector, Female NM: N Connector, Male DM: DIN Connector, Male SF: SMA Connector, Female SM: SMA Connector, Male	Void



PASSIVE SYSTEMS

Termination Load Series



PN.	L-1-XX	L-2-XX	L-5-XX	L-10-XX	L-15-XX
Electrical Specifications					
Frequency			DC-3GHz		
Return loss			≤ -23dB		
Power handling	1W@25°C	2W@25°C	5W@25°C	10W@25°C	15W@25°C
Impedance			50Ω		
Environmental Specifications					
Temperature range			-35°C~+125°C		
Relative humidity			0~95%		
Application			Indoor		
Mechanical Specifications					
Connector type	N female/ N male/ SMA male	DIN male/ N male/ N female/ SMA male	DIN male/ N male/ SMA male/ SMA female	DIN male/ N male/ N female	N male/ N female

PN.	L-20-XX	L-25-XX	L-30-XX	L-50-XX
Electrical Specifications				
Frequency			DC-3GHz	
Return loss			≤ -23dB	
Power handling	20W@25°C	25W@25°C	30W@25°C	50W@25°C
Impedance			50Ω	
Environmental Specifications				
Temperature range			-35°C~+125°C	
Relative humidity			0~95%	
Application			Indoor	
Mechanical Specifications				
Connector type	N male/N female	DIN male/ N male/ N female	DIN male/ N male/ N female	DIN male/ N male/ N female

PN.	L-100-XX	L-150-XX	L-200-XX
Electrical Specifications			
Frequency		DC-3GHz	
Return loss	≤ -19dB	≤ -19dB	≤ -19dB
Power handling	100W@25°C	150W@25°C	200W@25°C
Impedance	50Ω	50Ω	50Ω
Environmental Specifications			
Temperature range	-35°C~+125°C	-35°C~+125°C	-55°C~+125°C
Relative humidity		0~95%	
Application		Indoor	
Mechanical Specifications			
Connector type	DIN male/ N male/ N female	N male	N male

PN.	L-50-XX-T	L-100-XX-T	L-50-XX-T1	L-100-XX-T1
Electrical Specifications				
Frequency	DC-3GHz	DC-3GHz	698~2700MHz	698~2700MHz
Return loss	≤ -20.8	≤ -19	≤ -20.8	≤ -19
Power handling	50W@25°C	100W@25°C	50W@25°C	100W@25°C
PIM	≤ -120dBc@2×20W	≤ -120dBc@2×20W	≤ -150dBc@2×20W	≤ -150dBc@2×20W
Impedance		50Ω		
Environmental Specifications				
Temperature range		-35°C~+125°C		
Relative humidity		0~95%		
Application		Indoor		
Mechanical Specifications				
Connector type		Din male/ DIN female/ N male/ N female		

4.3-10 Interface 2W Load

Main Features

- Wide frequency band
- Low VSWR
- Excellent capacity in anti-pulse and burnout
- Simple installation



PN.	L-2-64M
Electrical Specifications	
Frequency	DC to 3GHz
Return Loss/VSWR	≤ -23dB/1.15
Power handling	2W@25°C
Impedance	50Ω
Environmental Specifications	
Operating temperature range	-35°C~+125°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	Indoor
Mechanical Specifications	
Dimension	Φ18.5x30.9(mm)
Weight	100g
Connector type	4.3-10 male
Packing	1Pce in box

4.3-10 Interface 10W Low PIM Load

Main Features

- Wide frequency band
- Low VSWR
- Low PIM
- Excellent capacity in anti-pulse and burnout
- Simple installation



PN. L-10-64F-T1

Electrical Specifications

Frequency	698~2700MHz
Return Loss/VSWR	≤ -23dB/1.15
Power handling	10W@25°C
Intermodulation(3 rd order)	≤ -153dBc@2x2W
Impedance	50Ω

Environmental Specifications

Operating temperature range	-35°C~+125°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	Indoor

Mechanical Specifications

Dimension	70x70x67(mm)
Weight	750g
Connector type	4.3-10 female
Mounting	Plane
Packing	1Pce in box

High Power Handling & Low PIM Load

Main Features

- Wide frequency band
- Low VSWR
- Low PIM
- Excellent capacity in anti-pulse and burnout
- Simple installation



PN. L-100-DM-T3

Electrical Specifications

Frequency	698~2700MHz
Return Loss/VSWR	≤ -19dB/1.25
Power handling	100W@25°C
Intermodulation(3 rd order)	≤ -160dBc@2x20W
Impedance	50Ω

Environmental Specifications

Operating temperature range	-35°C~+125°C
Relative humidity	5%~95%
Barometric pressure	55KPa~106KPa
Application	IP65

Mechanical Specifications

Dimension	186x212x130(mm)
Weight	4.2kg
Connector type	Din male
Mounting	Plane
Packing	1Pce in box

POINT OF INTERFACE

Rosenberger offers a multi-system integration solution, which can integrate different frequency signals from different operators by the application of a Point of Interface (POI). This can avoid repeated investment of IBS for the same building by different Telecom operators; effectively integrate multi-signals to the same DAS with low insertion loss, low cost and minimum construction work.

It can also be easily extended and maintained. A multi-system Integration solution is usually deployed in large office buildings, public facilities, large exhibition centers, subways, railway stations, airports and government offices.

Point of Interface Part Numbering Format

X x - x X - x X - x X - x X

① ② ③ ④ ⑤

①

A:

CB: Combiner Unit

②

2: 2 input ports

3: 3 input ports

4: 4 input ports

...

③

POI

④

NF: N Connector, Female

DF: DIN Connector, Female

NM: N Connector, Male

DM: DIN Connector, Male

SF: SMA Connector, Female

SM: SMA Connector, Male

⑤

Series No



PASSIVE SYSTEMS

POI for LTE Access

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN.

CB-7-POI-DF-19

Electrical Specifications

Frequency	LTE 700MHz~WCDMA 2100MHz-1:703~2170MHz LTE 700MHz~WCDMA 2100MHz-2:703~2170MHz LTE 700MHz~WCDMA 2100MHz-3:703~2170MHz LTE 700MHz~WCDMA 2100MHz-4:703~2170MHz LTE2600:2500~2570/2620~2690MHz LTE2600:2500~2570/2620~2690MHz LTE2600:2500~2570/2620~2690MHz	
Return loss	≥ 18dB for Input Ports	
Insertion loss	LTE 700MHz~WCDMA 2100MHz	≤ 0.8dB
	LTE 2600	≤ 8.5dB
Isolation(TX↔TX)	Same bands	LTE 2600↔ LTE 2600: ≥ 25dB
	Different bands	LTE 700MHz~WCDMA 2100MHz ↔LTE 2600: ≥ 80dB
Power handling	2600MHz	150W
	LTE 700MHz~WCDMA 2100MHz	200W
Intermodulation(3 rd order)	≤ -150dBc@2x20W	
Monitor Ports	-40dB	
Impedance	50Ω	
Environmental Specifications		
Operating temperature range	0°C~+55°C	
Application	Indoor	
Mechanical Specifications		
Dimension	483x266x553(mm)	
Weight	25kg	
Connector type	DIN female	
Connector locations	All connectors on front panel	
Input ports	7	
	LTE 700MHz~WCDMA 2100MHz	4
	FDD 2600	3
Output ports	4	
	Monitor ports	1
Mounting	19" standard cabine	
Packing	1Pce in box	

POI for LTE Access

Main Features

- Compact, low weight
- Low PIM
- High reliability
- Simple installation



PN.

CB-8-POI-DF-13

Electrical Specifications

Frequency	LTE 700MHz~WCDMA 2100MHz -1:703-2170MHz LTE 700MHz~WCDMA 2100MHz -2:703-2170MHz LTE 700MHz~WCDMA 2100MHz -3:703-2170MHz LTE 700MHz~WCDMA 2100MHz -4:703-2170MHz LTE 2600(FDD):2500~2520/2620~2640MHz LTE 2600(FDD):2520~2540/2640~2660MHz 2560~2570/2680~2690MHz LTE 2600(FDD):2540~2560/2660~2680MHz LTE 2600 TDD:2575-2615MHz	
Return loss	≥ 18dB for Input Ports	
Insertion loss	LTE 700MHz~WCDMA 2100MHz	≤ 0.8dB
	LTE 2600	≤ 10.5dB
Isolation(TX↔TX)	Same bands	FDD 2600↔FDD 2600: ≥ 25dB
	Different bands	LTE 700MHz~WCDMA 2100MHz ↔LTE 2600: ≥ 80dB
		FDD 2600 ↔TDD 2600: ≥ 110dB
Power handling	2600MHz	150W
	LTE 700MHz~WCDMA 2100MHz	200W
Intermodulation(3 rd order)	≤ -150dBc@2x20W	
Monitor Ports	-40dB	
Impedance	50Ω	
Environmental Specifications		
Operating temperature range	0°C~+55°C	
Application	Indoor	
Mechanical Specifications		
Dimension	483x355x553(mm)	
Weight	37kg	
Connector type	DIN female	
Connector locations	All connectors on front panel	
Input ports	8	
	LTE 700MHz~WCDMA 2100MHz	4
	FDD 2600	3
	TDD 2600	1
Output ports	4	
Monitor ports	1	
Mounting	19" standard cabine	
Packing	1Pce in box	

Modular POI

Main Features

- Compact, low weight
- High isolation, low VSWR and loss
- High reliability
- Low PIM
- Modular design, easy for upgrading



PN.

CB-13-POI-64F-03

Electrical Specifications

Frequency		iDEN: 806~825/851~870MHz GSM-1: 900~915/945~960MHz GSM-2: 890~900/935~945MHz GSM-3: 880~890/925~935MHz DCS-1: 1710~1740/1805~1835MHz DCS-2: 1765~1785/1860~1880MHz DCS-3: 1740~1765/1835~1860MHz 3G-1: 1935.1~1950.1/2125.1~2140.1MHz 1969.9~1974.9/2159.9~2164.9MHz 3G-2: 1950.1~1969.9/2140.1~2159.9MHz 3G-3: 1920.0~1935.1/2110.3~2125.1MHz 1974.9~1979.7/2164.9~2169.7MHz LTE2600~1: 2500~2520/2620~2640MHz LTE2600~2: 2520~2540/2640~2660MHz LTE2600~3: 2540~2560/2660~2680MHz
Return loss		≤ -18dB for all ports
Insertion loss		Splitting loss+ transmission losses
iDEN		3.0dB+1.2dB Typical
GSM		3.0dB+1.7dB Typical
DCS & 3G		3.0dB+2.5dB Typical
LTE		3.0dB+1.7dB Typical
Isolation	Tx/Rx	65dB Typical(60dB Min)
	Same bands	45-50dB Typical(33dB Min)
	Different bands	100dB Typical(91dB Min) iDEN to other, 3G to other 65dB(50dB Min) GSM900 to other, GSM1800 to other
Power handling		100W
Intermodulation		≤ -155dBc(Rx band) 2x20W(TX band)
Impedance		50Ω
Environmental Specifications		
Operating temperature range		-5°C~+55°C
Storage temperature range		-25°C~+60°C
Relative humidity		5%~85%
Barometric pressure		55KPa~106KPa
Application		Indoor
Mechanical Specifications		
Connector type		4.3-10 female
BTS Ports		13
ANT Ports		2
Monitor		2x-30dB(N-Female)
Mounting		19' standard cabinet mount
Packing		1Pce in box

ROSENBERGER SERVICE

Rosenberger offers professional services that improve network design, reliability, scalability and efficiency.

Our service core competences include:

- Network optimization
- Technical consultation
- Customized product design
- Installation & commissioning
- Onsite training & supervision
- System troubleshooting
- After-sales services

In addition, we also offer professional training, technical support and workshops for distributors and agents. We are committed to offering exceptional services for our customers.

Rosenberger is much more than just a supplier – Rosenberger is a valued development partner and we will strive to meet new challenges in order to scale to new heights.

A silhouette photograph of a group of business professionals in a cityscape at sunset. The figures are standing on a reflective surface, and their reflections are visible below them. The background shows a city skyline with a prominent skyscraper.

PASSIVE SYSTEMS

Rosenberger Asia Pacific Electronic Co., Ltd.

No.3, Anxiang Street, Block B, Tianzhu Airport Industrial Zone,
Beijing, China 101300

Tel : (+86 10) 80481995

Fax : (+86 10) 80497052

Email: sales@RosenbergerAP.com

Rosenberger Technology (Kunshan) Co., Ltd.

No. 6, Shen'an Road, Dianshanhu, Kunshan,
Jiangsu, China, 215345

Tel : (+86 512) 86896789

Fax : (+86 512) 86890666

Rosenberger Asia Pacific Electronic Co., Ltd. Shanghai Division

B7, No. 509, Renqing Road, East Zone of Zhangjiang High-Tech Park,
Shanghai, China 201201

Tel : (+86 21) 58995997

Fax : (+86 21) 58995594

Rosenberger Asia Pacific Electronic Co., Ltd. Dongguan Division

No.1, 1st Road of Shanglian, Jiaoshe Village, Dongkeng Town,
Dongguan, Guangdong Province, China 523443

Tel : (+86 769) 82802098

Fax : (+86 769) 82802099

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Please visit our website: www.RosenbergerAP.com

