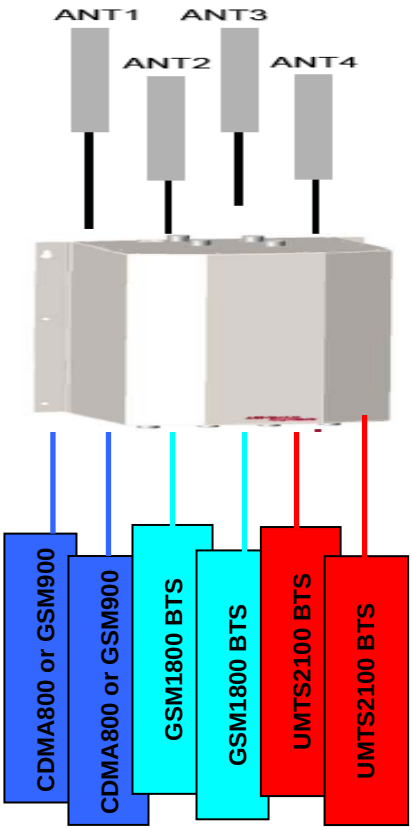
Multi-Network Combiner

Product Code : PW-SMOC-10I4O-A



Save money by installing our Multi-Network Combiners

By utilizing Pacific Wave's Multi Network Combiner, you will reduce the cost of antennas, feeders and installation. It eliminates the cost in-efficient need to make one antenna installation for each system. By simply connecting the BTS's into combiner, it will immediately render you all the benefits of antenna sharing.

Safe from interference

This Multi-Network combiner constructed using Duplex-Filter & Hybrid system which able to provide adequate in-band isolation and out-band isolation to avoid channel interference.

Low Insertion Loss & High Power Rating

The Combiner capable of 100watt for each input port with maximum 8-dB insertion loss.

Combiners upto 10 BTS into 4 antenna ports

This Multi-Network combiner enable 10 (Ten) Base Transceiver Station connect to the Combiner

2 CDMA800/GSM900 Base Tranceiver Station
4 GSM1800 Base Tranceiver Station
4 UMTS2100 Base Tranceiver Station

It combine RF Signal from BTS to 4 antenna ports or split the signal to 10 BTS in the Receiving direction.

This is a highly important function when designing shared antenna system wishing to connect multiple RBS's to the shared antenna.

TECHNICAL SPECIFICATION FOR MULTI-NETWORK COMBINER

(Below are some Typical data. Please contact us for more detail information)

Electrical Specification

Product Code	PW-SMOC-10I4O-A
Passband - Input port :	
Port 1, 2 : CDMA800-GSM900	806 - 960Mhz
Port 5, 6, 7, 8 : GSM1800	1710 - 1880Mhz
Port 9,10,11,12 : UMTS2100	1920 - 2170Mhz
Number of Output Port	4 Port (ANT1 to ANT4)
Insertion Loss :	≤ 1.5dB
Coupling Loss :	
Port 1,2,3,4 : CDMA800 to ANT 1-4	< 6.5dB
Port 5,6,7,8 : GSM1800 to ANT 1-4	< 6.5dB
Port 9,10,11,12: UMTS2100 to ANT 1-4	< 6.5dB
Input Return Loss	>18dB
Isolation between system :	
CDMA800 & GSM900 Vs GSM1800	> 80 dB
CDMA800 & GSM900 Vs UMTS2100	> 80 dB
GSM1800 Vs UMTS2100	> 80 dB
Isolation between same system	> 20 dB
Inter-modulation 2 x +43dB	≤ -140dBc
Maximum input power/port	100watt
Impedance in/out	50 Ohm

Mechanical Specification

Dimension (WxLxD)	41x39x23 cm
Weight (Max) :	<20 Kg
Connector for input & output	N-female
Connector for Monitoring Port	N-female or SMA-female

Environmental Specification

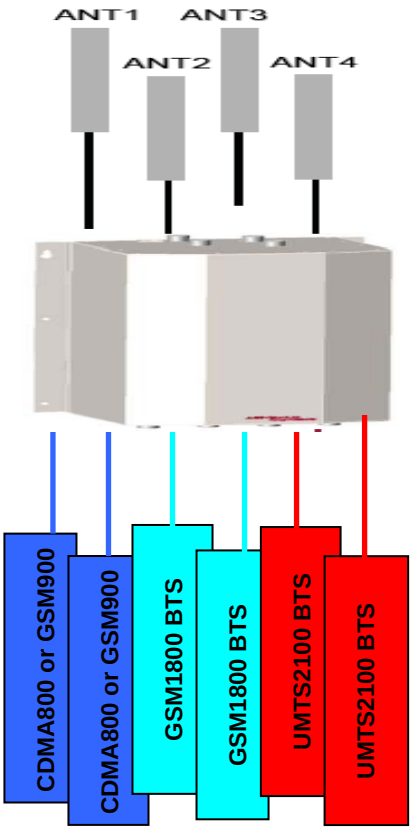
Temperature Range (normal operation)	-30 to +65 ^{0}C
Ingress Protection Class	IP40 for Indoor
Humidity	Relative 5-100%

Factory reserves the right to change product specification at any time (if found necessary).

Customer should provide Band Pass Filter between CDMA 800Mhz & GSM 900Mhz if both frequency are used together.

Multi-Operator Combiner

Product Code : PW-SMOC-12I4O-A



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Safe from interference

This Multi-Network combiner constructed using Duplex-Filter & Hybrid system which able to provide adequate in-band isolation and out-band isolation to avoid channel interference.

Low Insertion Loss & High Power Rating

The Combiner capable of 100watt for each input port with maximum 8-11dB insertion loss.

Combiners upto 12 BTS into 4 antenna ports

This Multi-Network combiner enable 12 (Twelve) Base Transceiver Station connect to the Combiner

2 CDMA800/GSM900 Base Tranceiver Station
5 GSM1800 Base Tranceiver Station
5 UMTS2100 Base Tranceiver Station

It combine RF Signal from BTS to 4 antenna ports or split the signal to 12 BTS in the Receiving direction.

This is a highly important function when designing shared antenna system wishing to connect multiple RBS's to the shared antenna.

TECHNICAL SPECIFICATION FOR MULTI-NETWORK COMBINER

(Below are some Typical data. Please contact us for more detail information)

Electrical Specification

Product Code	PW-SMOC-12I4O-A
Passband - Input port :	
Port 1,2 : CDMA800-GSM900	806 - 960Mhz
Port 3, 4, 5, 6, 7 : GSM1800	1710 - 1880Mhz
Port 8,9,10,11,12 : UMTS2100	1920 - 2170Mhz
Number of Output Port	4 Port (ANT1 to ANT4)
Insertion Loss :	≤ 1.2dB
Coupling Loss :	
Port 1,2 :CDMA800/GSM900 to ANT 1-4	< 6dB
Port 3,4,5, : GSM1800 to ANT 1-4	< 6dB
Port 6,7 : GSM1800 to ANT 1-4	< 9dB
Port 8,9,10 : UMTS2100 to ANT 1-4	< 6dB
Port 11, 12 : UMTS2100 to ANT 1-4	< 9dB
Input Return Loss	>18dB
Isolation between system :	
CDMA800, GSM900 Vs GSM1800	> 80 dB
CDMA800, GSM900 Vs UMTS2100	> 80 dB
GSM1800 Vs UMTS2100	> 80 dB
Isolation between same system	>23 dB
Inter-modulation 2 x +43dB	≤ -140dBc
Maximum input power/port	100watt
Impedance in/out	50 Ohm

Mechanical Specification

Dimension (WxLxD)	41x39x23 cm
Weight (Max) :	< 21Kg
Connector for input & output	N-female
Connector for Monitoring Port	N-female or SMA-female

Environmental Specification

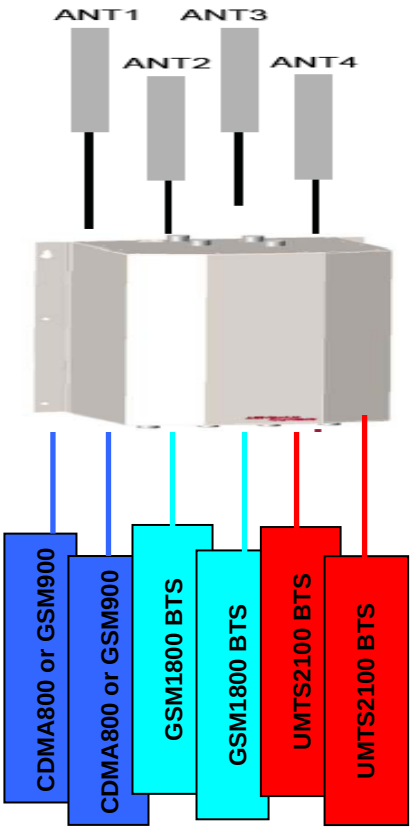
Temperature Range (normal operation)	-30 to +65 ^{0}C
Ingress Protection Class	IP40 for Indoor

Factory reserves the right to change product specification at any time (if found necessary).

Customer should provide Band Pass Filter between CDMA 800Mhz & GSM 900Mhz if both frequency are used together.

Multi-Operator Combiner

Product Code : PW-SMOC-12I4O-B



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Safe from interference

This Multi-Network combiner constructed using Duplex-Filter & Hybrid system which able to provide adequate in-band isolation and out-band isolation to avoid channel interference.

Low Insertion Loss & High Power Rating

The Combiner capable of 100watt for each input port with maximum 8-11dB insertion loss.

Combiners upto 12 BTS into 4 antenna ports

This Multi-Network combiner enable 12 (Twelve) Base Transceiver Station connect to the Combiner

4 CDMA800/GSM900 Base Tranceiver Station
4 GSM1800 Base Tranceiver Station
4 UMTS2100 Base Tranceiver Station

It combine RF Signal from BTS to 4 antenna ports or split the signal to 12 BTS in the Receiving direction.

This is a highly important function when designing shared antenna system wishing to connect multiple RBS's to the shared antenna.

TECHNICAL SPECIFICATION FOR MULTI-NETWORK COMBINER

(Below are some Typical data. Please contact us for more detail information)

Electrical Specification

Product Code	PW-SMOC-12I4O-B
Passband - Input port :	
Port 1, 2, 3, 4 : CDMA800-GSM900	806 - 960Mhz
Port 5, 6, 7, 8 : GSM1800	1710 - 1880Mhz
Port 9,10,11,12 : UMTS2100	1920 - 2170Mhz
Number of Output Port	4 Port (ANT1 to ANT4)
Insertion Loss :	≤ 1.5dB
Coupling Loss :	
Port 1,2,3,4 : CDMA800 to ANT 1-4	< 6.5dB
Port 5,6,7,8 : GSM1800 to ANT 1-4	< 6.5dB
Port 9,10,11,12: UMTS2100 to ANT 1-4	< 6.5dB
Input Return Loss	>18dB
Isolation between system :	
CDMA800 & GSM900 Vs GSM1800	> 80 dB
CDMA800 & GSM900 Vs UMTS2100	> 80 dB
GSM1800 Vs UMTS2100	> 80 dB
Isolation between same system	>20 dB
Inter-modulation 2 x +43dB	≤ -140dBc
Maximum input power/port	100watt
Impedance in/out	50 Ohm

Mechanical Specification

Dimension (WxLxD)	To be Advise
Weight (Max) :	<18Kg
Connector for input & output	N-female
Connector for Monitoring Port	N-female or SMA-female

Environmental Specification

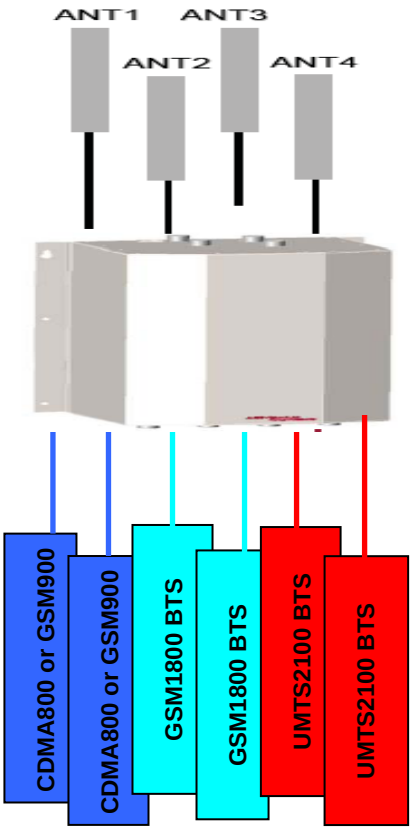
Temperature Range (normal operation)	-30 to +65 ^{0}C
Ingress Protection Class	IP40 for Indoor
Humidity	Relative 5-100%

Factory reserves the right to change product specification at any time (if found necessary).

Customer should provide Band Pass Filter between CDMA 800Mhz & GSM 900Mhz if both frequency are used together.

Multi-Operator Combiner

Product Code : PW-SMOC-13I4O-A



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Safe from interference

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Low Insertion Loss & High Power Rating

The Combiner capable of 100watt for each input port with maximum 8-11,5dB insertion loss.

Combiners upto 13 BTS into 4 antenna ports

This Multi-Network combiner enable 13 (Thirteen) Base Transceiver Station connect to the Combiner

2 CDMA800/GSM900 Base Tranceiver Station
5 GSM1800 Base Tranceiver Station
5 UMTS2100 Base Tranceiver Station
1 WiMax Base Tranceiver Station

It combine RF Signal from BTS to 4 antenna ports or split the signal to 13 BTS in the Receiving direction.

This is a highly important function when designing

TECHNICAL SPECIFICATION FOR MULTI-NETWORK COMBINER

(Below are some Typical data. Please contact us for more detail information)

Electrical Specification

Product Code	PW-SMOC-13I4O-A
Passband - Input port :	
Port 1,2 : CDMA800-GSM900	806 - 960Mhz
Port 3, 4, 5, 6, 7 : GSM1800	1710 - 1880Mhz
Port 8,9,10,11,12 : UMTS2100	1920 - 2170Mhz
Port 13 : WiMax-2300	2300 – 2390 Mhz
Number of Output Port	4 Port (ANT1 to ANT4)
Insertion Loss :	
Port 1,2 :CDMA800/GSM900 to ANT 1-4	≤ 8 dB
Port 3,4,5, : GSM1800 to ANT 1-4	≤ 8 dB
Port 6,7 : GSM1800 to ANT 1-4	≤ 11,5 dB
Port 8,9,10 : UMTS2100 to ANT 1-4	≤ 8 dB
Port 11, 12 : UMTS2100 to ANT 1-4	≤ 11,5 dB
Port 13 : Wimax 2300 to ANT 1-4	≤ 8 dB
Return Loss	>18dB
Isolation between same system	>21 dB
Isolation between system :	> 80 dB
Inter-modulation (2 x +43dB)	≤ -140dBc
Maximum input power/port	100watt
Impedance in/out	50 Ohm

Mechanical Specification

Dimension (WxLxD)	482.6x426.5x400mm
Weight (Max) :	<30Kg
Connector for Monitoring Port	N-female or SMA-female
Connector for input & output	N-female or DIN-female

Environmental Specification

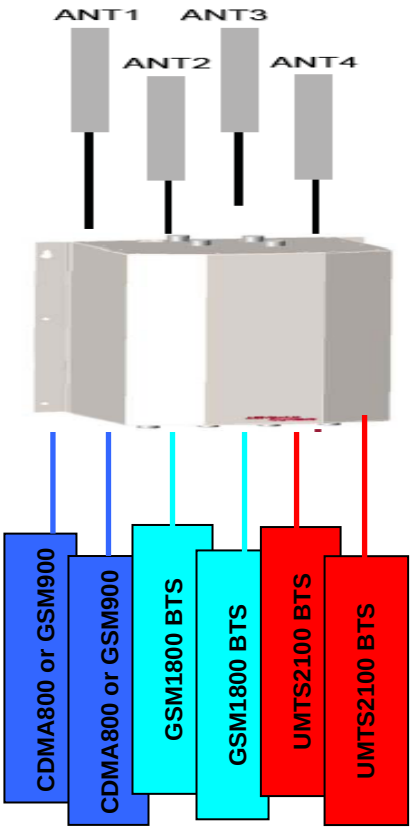
Temperature Range (normal operation)	-30 to +65 ^{0}C
Ingress Protection Class	IP40 for Indoor
Humidity	Relative 5-100%

Note : Factory reserves the right to change product specification at any time (if found necessary).

Customer should provide Band Pass Filter between CDMA 800Mhz & GSM 900Mhz if both frequency are used together.

Multi-Operator Combiner

Product Code : PW-SMOC-13I4O-B



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Safe from interference

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Low Insertion Loss & High Power Rating

The Combiner capable of 100watt for each input port with maximum 8-11,5dB insertion loss.

Combiners upto 13 BTS into 4 antenna ports

This Multi-Network combiner enable 13 (Thirteen) Base Transceiver Station connect to the Combiner

2 CDMA800/GSM900 Base Tranceiver Station
5 GSM1800 Base Tranceiver Station
5 UMTS2100 Base Tranceiver Station
1 WiFi 2400 Access Point Station

It combine RF Signal from BTS to 4 antenna ports or split the signal to 13 BTS in the Receiving direction.

This is a highly important function when designing shared antenna system wishing to connect multiple RBS's to the shared antenna.

TECHNICAL SPECIFICATION FOR MULTI-NETWORK COMBINER

(Below are some Typical data. Please contact us for more detail information)

Electrical Specification

Product Code	PW-SMOC-13I4O-B
Passband - Input port :	
Port 1,2 : CDMA800-GSM900	806 - 960Mhz
Port 3, 4, 5, 6, 7 : GSM1800	1710 - 1880Mhz
Port 8,9,10,11,12 : UMTS2100	1920 - 2170Mhz
Port 13 : WiFi - 2400	2400 – 2500 Mhz
Number of Output Port	4 Port (ANT1 to ANT4)
Insertion Loss :	
Port 1,2 :CDMA800/GSM900 to ANT 1-4	≤ 8 dB
Port 3,4,5, : GSM1800 to ANT 1-4	≤ 8 dB
Port 6,7 : GSM1800 to ANT 1-4	≤ 11,5 dB
Port 8,9,10 : UMTS2100 to ANT 1-4	≤ 8 dB
Port 11, 12 : UMTS2100 to ANT 1-4	≤ 11,5 dB
Port 13 : WiFi 2400 to ANT 1-4	≤ 9 dB
Return Loss	>18dB
Isolation between same system	>21 dB
Isolation between system :	> 80 dB
Inter-modulation (2 x +43dB)	≤ -140dBc
Maximum input power/port	100watt
Impedance in/out	50 Ohm

Mechanical Specification

Dimension (WxLxD)	482.6x426.5x400mm
Weight (Max) :	<30Kg
Connector for Monitoring Port	N-female or SMA-female
Connector for input & output	N-female or DIN-female

Environmental Specification

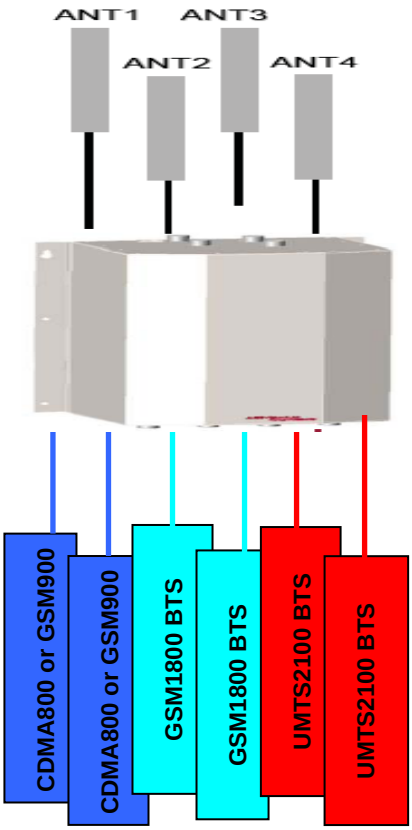
Temperature Range (normal operation)	-30 to +65 ^{0}C
Ingress Protection Class	IP40 for Indoor
Humidity	Relative 5-100%

Note : Factory reserves the right to change product specification at any time (if found necessary).

Customer should provide Band Pass Filter between CDMA 800Mhz & GSM 900Mhz if both frequency are used together.

Multi-Operator Combiner

Product Code : PW-SMOC-14I4O-A



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Safe from interference

This Multi-Network combiner constructed using Duplex-Filter & Hybrid system which able to provide adequate in-band isolation and out-band isolation to avoid channel interference.

Low Insertion Loss & High Power Rating

The Combiner capable of 100watt for each input port with maximum 8-11dB insertion loss.

Combiners upto 14 BTS into 4 antenna ports

This Multi-Network combiner enable 14 (Fourteen) Base Transceiver Station connect to the Combiner

4 CDMA800/GSM900 Base Tranceiver Station
5 GSM1800 Base Tranceiver Station
5 UMTS2100 Base Tranceiver Station

It combine RF Signal from BTS to 4 antenna ports or split the signal to 14 BTS in the Receiving direction.

This is a highly important function when designing shared antenna system wishing to connect multiple RBS's to the shared antenna.

TECHNICAL SPECIFICATION FOR MULTI-NETWORK COMBINER

(Below are some Typical data. Please contact us for more detail information)

Electrical Specification

Product Code	PW-SMOC-14I4O-A
Passband - Input port :	
Port 1, 2, 3, 4 : CDMA800-GSM900	806 - 960Mhz
Port 5, 6, 7, 8, 9 : GSM1800	1710 - 1880Mhz
Port 10,11,12,13,14 : UMTS2100	1920 - 2170Mhz
Number of Output Port	4 Port (ANT1 to ANT4)
Insertion Loss :	≤ 1.2dB
Coupling Loss :	
Port 1,2,3,4 :CDMA800/GSM900 to ANT 1-4	< 6dB
Port 5,6,7 : GSM1800 to ANT 1-4	< 6dB
Port 8, 9 : GSM1800 to ANT 1-4	< 9dB
Port 10,11,12 : UMTS2100 to ANT 1-4	< 6dB
Port 13, 14 : UMTS2100 to ANT 1-4	< 9dB
Input Return Loss	>18dB
Isolation between system :	
CDMA800 & GSM900 Vs GSM1800	> 80 dB
CDMA800 & GSM900 Vs UMTS2100	> 80 dB
GSM1800 Vs UMTS2100	> 80 dB
Isolation between same system	>23 dB
Inter-modulation 2 x +43dB	≤ -140dBc
Maximum input power/port	100watt
Impedance in/out	50 Ohm

Mechanical Specification

Dimension (WxLxD)	To be Advise
Weight (Max) :	<22Kg
Connector for input & output	N-female
Connector for Monitoring Port (-30dB)	N-female or SMA-female

Environmental Specification

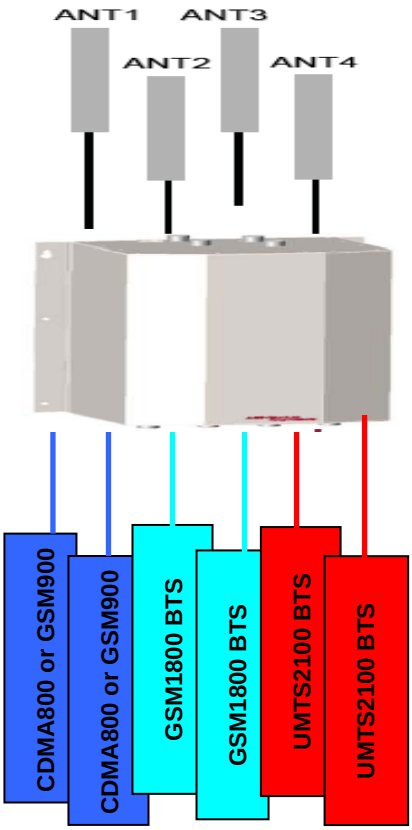
Temperature Range (normal operation)	-30 to +65 ^{0}C
Ingress Protection Class	IP40 for Indoor

Factory reserves the right to change product specification at any time (if found necessary).

Customer should provide Band Pass Filter between CDMA 800Mhz & GSM 900Mhz if both frequency are used together.

Multi-Operator Combiner

Product Code : PW-SMOC-14I4O-B



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Safe from interference

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Low Insertion Loss & High Power Rating

The Combiner capable of 100watt for each input port with maximum 8-11,5dB insertion loss.

Combiners upto 14 BTS into 4 antenna ports

This Multi-Network combiner enable 14 (Fourteen) Base Transceiver Station connect to the Combiner

2 CDMA800/GSM900 Base Tranceiver Station
5 GSM1800 Base Tranceiver Station
5 UMTS2100 Base Tranceiver Station
1 WiFi Access Point
1 WiMax Base Tranceiver Station

It combine RF Signal from BTS to 4 antenna ports or split the signal to 14 BTS in the Receiving direction.

This is a highly important function when designing shared antenna system wishing to connect multiple RBS's to the shared antenna.

TECHNICAL SPECIFICATION FOR MULTI-NETWORK COMBINER

(Below are some Typical data. Please contact us for more detail information)

Electrical Specification

Product Code	PW-SMOC-14I4O-A
Frequency Range - Input port :	
Port 1,2 : CDMA800-GSM900	806 - 960Mhz
Port 3, 4, 5, 6, 7 : GSM1800	1710 - 1880Mhz
Port 8,9,10,11,12 : UMTS2100	1920 - 2170Mhz
Port 13 : WiMax-2300	2300 - 2390 Mhz
Port 14 : WiFi-2400	2400 - 2500 Mhz
Number of Output Port	4 Port (ANT1 to ANT4)
Insertion Loss :	
Port 1,2 :CDMA800/GSM900 to ANT 1-4	≤ 8 dB
Port 3,4,5, : GSM1800 to ANT 1-4	≤ 8 dB
Port 6,7 : GSM1800 to ANT 1-4	≤ 11,5 dB
Port 8,9,10 : UMTS2100 to ANT 1-4	≤ 8 dB
Port 11, 12 : UMTS2100 to ANT 1-4	≤ 11,5 dB
Port 13 : Wimax 2300 to ANT 1-4	≤ 9 dB
Port 14 : WiFi 2400 to ANT 1-4	≤ 9 dB
Return Loss	>18dB
Isolation between same system	>21 dB
Isolation between system :	
Port 1,2 Vs Port 3,4,5,6,7,8,9,10,11,12,13,14	> 80 dB
Port 3,4,5,6,7 Vs Port 1,2,8,9,10,11,12,13,14	> 80 dB
Port 8,9,10,11,12 Vs Port 1,2,3,4,5,6,7,13,14	> 80 dB
Port 13 Vs Port 1,2,3,4,5,6,7,8,9,10,11,12	> 80 dB
Port 14 Vs Port 1,2,3,4,5,6,7,8,9,10,11,12	> 80 dB
Port 13 Vs Port 14	> 50 dB
Inter-modulation (2 x +43dB)	≤ -140dBc
Maximum input power/port	100watt
Impedance in/out	50 Ohm

Mechanical Specification

Dimension (WxLxD)	482.6x426.5x400mm
Weight (Max) :	<30Kg
Connector for Monitoring Port	N-female or SMA-female
Connector for input & output	N-female or DIN-female

Environmental Specification

Temperature Range (normal operation)	-30 to +65 ^{0}C
Ingress Protection Class	IP40 for Indoor
Humidity	Relative 5-100%

Note : Factory reserves the right to change product specification at any time (if found necessary).

Customer should provide Band Pass Filter between CDMA 800Mhz & GSM 900Mhz if both frequency are used together.