	100Watt Multi Operator Combiner Input : 12, 13, 14, 15, 16 Inputs Outputs : 4ports + (4x -30dB)	Code : PW-MOC Series		
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MULTI-OPERATOR COMBINER (MOC)

OVERVIEW :

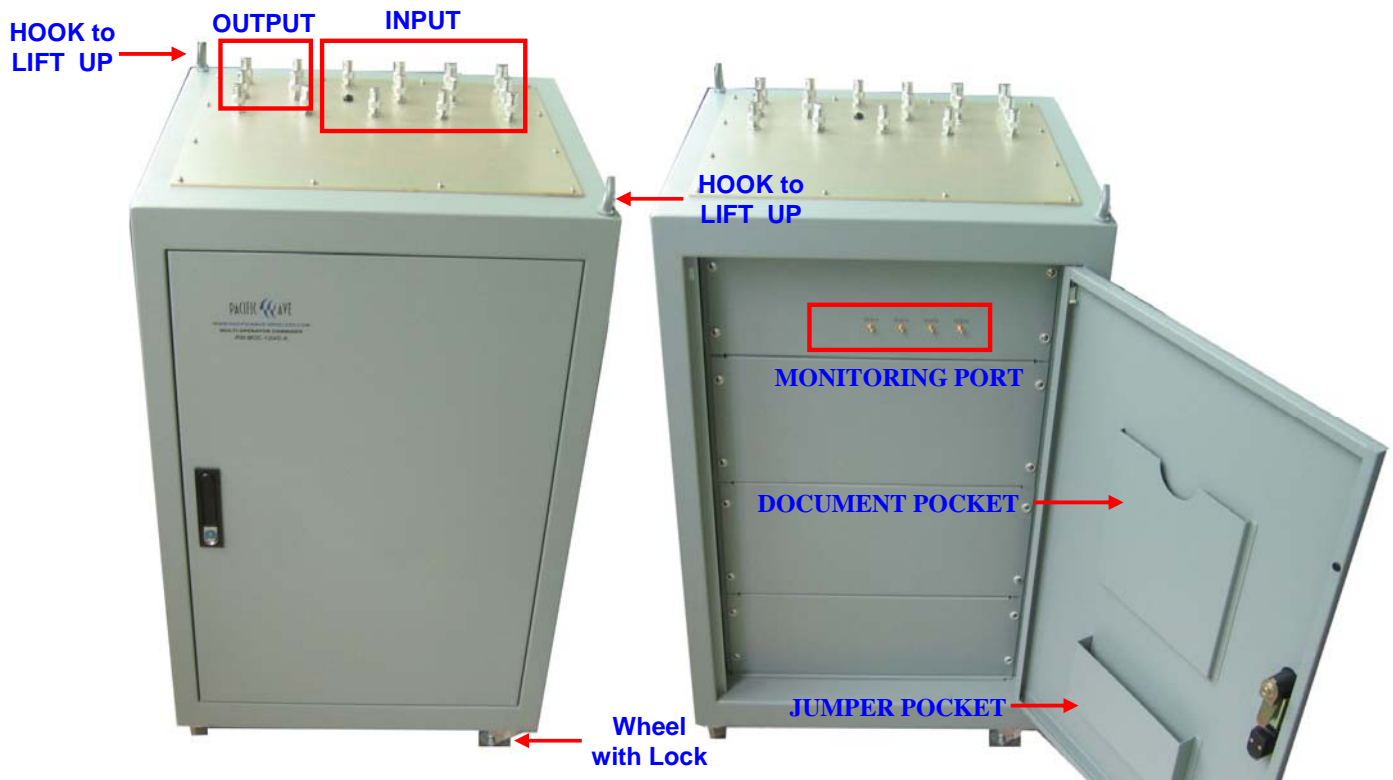
The rapid growth in the number of base station sites is highlighting the necessity for improvements in the way that network operators co-exist. This demand increase from time to time since this solution offers number of benefits:


- Effective in time and Installation as it easy and fast.
- Efficient in Investment as Few Cellular Providers utilize same network infrastructure
- Able to support Building Esthetical Aspect by reducing number of Indoor Antennas.

The potential for interference between operators is vast and requires the application of modern filtering and combining technologies. This problem was being and pioneered by Pacific Wave since 2002 with support of reliable Combiner manufacturer from various countries such as United Kingdom, Australia, Sweden, Denmark, Hong-Kong.

Combined Indoor Coverage become feasible by using a Multi Operator Combiner which has ability to handle each Signal/Carrier from every Cellular Provider. Combiner should provide an adequate Isolation (In-Band & Out-Band), good power handling ability and excellent IMD to generate a harmony Combination with less interference.


PRODUCT PHOTO :




	100Watt Multi Operator Combiner Input : 12, 13, 14, 15, 16 Inputs Outputs : 4ports + (4x -30dB)	Code : PW-MOC Series		
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PRODUCT SPECIFICATION :


12Input 4Output Combiner (ver A1)					
Frequency Range		Operator	UL Freq (MHz)	DL Freq (MHz)	
<i>BTS Input / Output Port</i>	GSM1800	Excelcomindo	1710 - 1717.5	1805 - 1812.5	
		Indosat	1717.5 - 1722.5 or 1750 - 1765	1812.5 - 1817.5 or 1845 - 1860	
		Telkomsel	1722.5 - 1730 or 1745 - 1750 or 1765 - 1775	1817.5 - 1825 or 1840 - 1845 or 1860 - 1870	
		NTS / Axis	1730 - 1745	1825 - 1840	
		HCPT / 3	1775 - 1785	1870 - 1880	
	CDMA800	Esia+Flexi	825 - 835	870 - 880	
		Fren+StarOne	835 - 845	880 - 890	
	UMTS 2100	HCPT / 3	1920 - 1925 1945 - 1950	2110 - 2115 2135 - 2140	
		NTS / Axis	1925 - 1935	2115 - 2125	
		Telkomsel	1935 - 1945	2125 - 2135	
		Indosat	1950 - 1960	2140 - 2150	
		Excelcomindo	1960 - 1970	2150 - 2160	
	Isolation Between Same System			≥ 40 dB	
	Isolation Between System			80-100 dB	
	Max Input Power			100W / port	
Insertion Loss (DL)			7.5 - 9.0 dB		
Return Loss			≥ 18 dB		
IM @ 43dBm *2 (channel)			≥140 dBc		
IM2 @ 43dBm *2 (channel)			≥140 dBc		
BTS INPUT Ports			12 Port		
MS OUTPUT Ports			4 Port		
Monitor Ports O/P Ports			4 x -30dB (SMA Female)		
Temperature Range			0 to +60°C		
RF Connectors I/O & O/P Port			N-Female		
Dimension (cm) / Weight (kg)			L60 x W60 x H105 / 110 Kg		

	100Watt Multi Operator Combiner Input : 12, 13, 14, 15, 16 Inputs Outputs : 4ports + (4x -30dB)	Code : PW-MOC Series		
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13Input 4Output Combiner (ver B1)					
Frequency Range		Operator	UL Freq (MHz)	DL Freq (MHz)	
BTS I/O Port	GSM1800	Excelcomindo	1710 - 1717.5	1805 - 1812.5	
		Indosat	1717.5 - 1722.5 or 1750 - 1765	1812.5 - 1817.5 or 1845 - 1860	
		Telkomsel	1722.5 - 1730 or 1745 - 1750 or 1765 - 1775	1817.5 - 1825 or 1840 - 1845 or 1860 - 1870	
		NTS / Axis	1730 - 1745	1825 - 1840	
		HCPT / 3	1775 - 1785	1870 - 1880	
	CDMA800	Esia+Flexi	825 - 835	870 - 880	
		Fren+StarOne	835 - 845	880 - 890	
	UMTS 2100	HCPT / 3	1920 - 1925 1945 - 1950	2110 - 2115 2135 - 2140	
		NTS / Axis	1925 - 1935	2115 - 2125	
		Telkomsel	1935 - 1945	2125 - 2135	
		Indosat	1950 - 1960	2140 - 2150	
		Excelcomindo	1960 - 1970	2150 - 2160	
	CDMA-1900	SMART	1900 - 1910	1980-1990	
	Isolation Between Same System			≥ 40 dB	
	Isolation Between System			80 - 100dB	
Max Input Power			100W / port		
Insertion Loss (DL)			7.5 - 9.0 dB		
Return Loss			≥ 18 dB		
IM @ 43dBm *2 (channel)			≥140 dBc		
IM2 @ 43dBm *2 (channel)			≥140 dBc		
BTS (I/P) Ports			13 Port		
MS (O/P) Ports			4 Port		
Monitor Ports O/P Ports			4 x -30dB (SMA Female)		
Temperature Range			0 to +60°C		
RF Connectors I/O & O/P Port			N-Female		
Dimension (cm) / Weight (kg)			L60 x W60 x H105 / 115 Kg		

	100Watt Multi Operator Combiner Input : 12, 13, 14, 15, 16 Inputs Outputs : 4ports + (4x -30dB)	Code : PW-MOC Series		
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14Input 4Output Combiner (ver B1)				
Frequency Range		Operator	UL Freq (MHz)	DL Freq (MHz)
<i>BTS Input / Output Port</i>	GSM1800	Excelcomindo	1710 - 1717.5	1805 - 1812.5
		Indosat	1717.5 - 1722.5 or 1750 - 1765	1812.5 - 1817.5 or 1845 - 1860
		Telkomsel	1722.5 - 1730 or 1745 - 1750 or 1765 - 1775	1817.5 - 1825 or 1840 - 1845 or 1860 - 1870
		NTS / Axis	1730 - 1745	1825 - 1840
		HCPT / 3	1775 - 1785	1870 - 1880
	CDMA800	Esia Bakrie	825 - 830	870 - 875
		Telkom Flexi	830 - 835	875 - 880
		Fren (M8)	835 - 840	880 - 885
		StarOne	840 - 845	885 - 890
	UMTS 2100	HCPT / 3	1920 - 1925 1945 - 1950	2110 - 2115 2135 - 2140
		NTS / Axis	1925 - 1935	2115 - 2125
		Telkomsel	1935 - 1945	2125 - 2135
		Indosat	1950 - 1960	2140 - 2150
		Excelcomindo	1960 - 1970	2150 - 2160
	Isolation Between Same System			≥ 40 dB
Isolation Between System			80-100 dB	
Max Input Power			100W / port	
Insertion Loss (DL)			7.5 - 9.0 dB	
Return Loss			≥ 18 dB	
IM @ 43dBm *2 (channel)			≥140 dBc	
IM2 @ 43dBm *2 (channel)			≥140 dBc	
BTS INPUT Ports			14 Port	
MS OUTPUT Ports			4 Port	
Monitor Ports O/P Ports			4 x -30dB (SMA Female)	
Temperature Range			0 to +60°C	
RF Connectors I/O & O/P Port			N-Female	
Dimension (cm) / Weight (kg)			L60 x W60 x H105 / 115 Kg	

	100Watt Multi Operator Combiner Input : 12, 13, 14, 15, 16 Inputs Outputs : 4ports + (4x -30dB)	Code : PW-MOC Series		
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15Input 4Output Combiner (ver B1)				
Frequency Range		Operator	UL Freq (MHz)	DL Freq (MHz)
BTS I/O Port	GSM1800	Excelcomindo	1710 - 1717.5	1805 - 1812.5
		Indosat	1717.5 - 1722.5 or 1750 - 1765	1812.5 - 1817.5 or 1845 - 1860
		Telkomsel	1722.5 - 1730 or 1745 - 1750 or 1765 - 1775	1817.5 - 1825 or 1840 - 1845 or 1860 - 1870
		NTS / Axis	1730 - 1745	1825 - 1840
		HCPT / 3	1775 - 1785	1870 - 1880
	CDMA800	Esia Bakrie	825 - 830	870 - 875
		Telkom Flexi	830 - 835	875 - 880
		Fren (M8)	835 - 840	880 - 885
		StarOne	840 - 845	885 - 890
	UMTS 2100	HCPT / 3	1920 - 1925 1945 - 1950	2110 - 2115 2135 - 2140
		NTS / Axis	1925 - 1935	2115 - 2125
		Telkomsel	1935 - 1945	2125 - 2135
		Indosat	1950 - 1960	2140 - 2150
		Excelcomindo	1960 - 1970	2150 - 2160
	CDMA-1900	SMART	1900 - 1910	1980-1990
Isolation Between Same System			≥ 40 dB	
Isolation Between System			80 - 100dB	
Max Input Power			100W / port	
Insertion Loss (DL)			7.5 - 9.0 dB	
Return Loss			≥ 18 dB	
IM @ 43dBm *2 (channel)			≥140 dBc	
IM2 @ 43dBm *2 (channel)			≥140 dBc	
BTS (I/P) Ports			15 Port	
MS (O/P) Ports			4 Port	
Monitor Ports O/P Ports			4 x -30dB (SMA Female)	
Temperature Range			0 to +60°C	
RF Connectors I/O & O/P Port			N-Female	
Dimension (cm) / Weight (kg)			L60 x W60 x H105 / 120 Kg	

	100Watt Multi Operator Combiner Input : 12, 13, 14, 15, 16 Inputs Outputs : 4ports + (4x -30dB)	Code : PW-MOC Series		
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16 Input 4Output Combiner (ver A1)				
Frequency Range		Operator	UL Freq (MHz)	DL Freq (MHz)
BTS I/O Port	GSM1800	Excelcomindo	1710 - 1717.5	1805 - 1812.5
		Indosat	1717.5 - 1722.5 or 1750 - 1765	1812.5 - 1817.5 or 1845 - 1860
		Telkomsel	1722.5 - 1730 or 1745 - 1750 or 1765 - 1775	1817.5 - 1825 or 1840 - 1845 or 1860 - 1870
		NTS / Axis	1730 - 1745	1825 - 1840
		HCPT / 3	1775 - 1785	1870 - 1880
	CDMA800	Esia Bakrie	825 - 830	870 - 875
		Telkom Flexi	830 - 835	875 - 880
		Fren (M8)	835 - 840	880 - 885
		StarOne	840 - 845	885 - 890
	UMTS 2100	HCPT / 3	1920 - 1925 1945 - 1950	2110 - 2115 2135 - 2140
		NTS / Axis	1925 - 1935	2115 - 2125
		Telkomsel	1935 - 1945	2125 - 2135
		Indosat	1950 - 1960	2140 - 2150
		Excelcomindo	1960 - 1970	2150 - 2160
	CDMA-1900	SMART	1900 - 1910	1980-1990
	WiFi-2400	xxxx	2400 - 2500	2400 - 2500
Isolation Between Same System			≥ 40 dB	
Isolation Between System			80 - 100dB	
Max Input Power			100W / port	
Insertion Loss (DL)			7.5 - 9.0 dB	
Return Loss			≥ 18 dB	
IM @ 43dBm *2 (channel)			≥140 dBc	
IM2 @ 43dBm *2 (channel)			≥140 dBc	
BTS (I/P) Ports			16 Port	
MS (O/P) Ports			4 Port	
Monitor Ports O/P Ports			4 x -30dB (SMA Female)	
Temperature Range			0 to +60°C	
RF Connectors I/O & O/P Port			N-Female	
Dimension (cm) / Weight (kg)			L60 x W60 x H105 / 125 Kg	