

	<b>Small Multi Operator Combiner</b> <b>6Input 2Output Combiner</b>	<b>Code : PW-6120-1M-B</b>		
		<b>Rev</b> 1	<b>Issued</b> 09/11/2007	<b>Page</b> 1/2

## **6 INPUT – 2 OUTPUT COMBINER**

### **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. The potential for interference between operators is vast and requires the application of modern filtering and combining technologies to permit the continued growth of existing Cellular networks and introduction of new ones.

This problem was being experienced with many solutions and pioneered by Pacific Wave since few years ago with support of reliable Combiner manufacturer from various countries such as United Kingdom, Australia, Sweden, Denmark, Hong-Kong.

Parameter to design Indoor Coverage is more simple compare to outdoor design but it takes more resources (manpower, material and time) to install. In several Huge or High Rise building, it's worthy to have combined In-Building Cell. 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 cost of Investment as Several Cellular Providers can utilize same network infrastructure.
- Able to support Building Esthetical Aspect by reducing number of Indoor Antenna.

### **TARGET OF ACHIEVEMENT :**

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.

### **SOLUTION OVERVIEW :**

Our Multi Operator Combiner (MOC) offers few flexibilities and advantages:

- Customer has flexibility on determining Number of Input and output Port.
- Monitor Port for each Output port is available upon customer request. This monitoring port will facilitate customer to observe combiner performance at any desired time.
- VSWR alarm monitoring also available for each Input/Output port in which customer able to detect if any network failure.
- Standard one year warranty is extendable to 5years. Pacific Wave will replace & repair combiner if it fails to perform its specification within warranty period.
- Pacific Wave also ready to provide any maintenance to ensure that combiner still performs well or to detect any failure beforehand.

	<b>Small Multi Operator Combiner</b> <b>6Input 2Output Combiner</b>	<b>Code : PW-6120-1M-B</b>		
		<b>Rev</b> 1	<b>Issued</b> 09/11/2007	<b>Page</b> 2/2

**PRODUCT SPECIFICATION :**

<b>6 Input 2Output Combiner (Type B)</b>			
<b>Input Port</b>	<b>System</b>	<b>Frequency Range</b>	
		<b>Upload (MHz)</b>	<b>Download (MHz)</b>
	<b>CDMA 800Mhz</b>	<b>824 – 845</b>	<b>870-890</b>
	<b>GSM 1800Mhz</b>	<b>1710 - 1785</b>	<b>1805 – 1880</b>
<b>UMTS 2100Mhz</b>	<b>1920 - 1955</b>	<b>2110 – 2145</b>	
<b>Insertion Loss (dB)</b>		<b>&lt; 6.0</b>	
<b>Return Loss (dB)</b>		<b>&gt; 18</b>	
<b>IMD @ 2*+43dBm (dBc)</b>		<b>&lt;-140</b>	
<b>Isolation between input port (dB)</b>		<b>&gt; 20</b>	
<b>Rejection Guard (dB)</b>		<b>&gt;20 in band, &gt;50 out band</b>	
<b>Power Handling (W)</b>		<b>100 / port</b>	
<b>Input Ports</b>		<b>2xCDMA800, 2xGSM1800, 2xUMTS2100</b>	
<b>Output Ports</b>		<b>2 Ports</b>	
<b>Temperature Range (°C)</b>		<b>-25 ~ +60</b>	
<b>RF Connectors Input &amp; Output Port</b>		<b>Nfemale or DINfemale</b>	
<b>Dimension (mm) &amp; Weight (Kg)</b>		<b>To be Design</b>	

**SYSTEM DRAWING :**

