

Sector RU (Remote RF Unit) Technical Specification [Slim RU Series]

<b>Tx</b>			
Frequency	2160 ~2185 MHz		Japan PCS Band
	1850 ~1890 MHz		N American PCS (A/B/D/E)
	1890 ~ 1910 MHz		North American PCS (C/F)
	824 ~ 849 MHz		800 MHz Cellular Band
	A/B/H Sub Bands available		450 MHz Band (incl NMT)
Output Power	43dBm, 20 Watt		CDMA
Gain	53 ± 1.0dB		
In/Out VSWR	1.5: 1		Output: Isolator Included
Coupling Value	23 ± 1.0dB		
Attenuation	1970 ~1995MHz	100dBc	(North American PCS)
Spurious Emission @43dBm(20W)_1FA	Fc±885KHz	-42dBc Min	Max Hold Marker
	Fc±1.98MHz	-52dBc Min	
	Fc±2.75MHz	-18dBm Min	RBW, VBW=30KHZ, BW=1MHz
Over Power	45 + 0.7dBm		
Over VSWR Protection	Alarm 3:1		30~43dBm
Over Temp. Protection	Alarm @ 90° ± 2°		Base Plate Temperature
<b>Rx</b>			
Frequency	1970 ~1995 MHz		Japan PCS Band
	1930 ~ 1990 MHz		North American PCS
	869 ~ 894 MHz		800 MHz Cellular Band
	A/B/H available		450 MHz Band (incl NMT)
Gain	24 ± 1.0dB		
Gain Flatness	1.0dB max		
In/Out VSWR	1.5: 1		
Attenuation	1970 ~1995MHz	100dBc min	North American PCS
Noise Figure	2.1dB max		
<b>Mechanical Specification</b>			
RF Input and Output Connector	SMA Female (Input)	N Female (Output)	
AC Power Connector	IEC		
RU Control Connector	RJ-45	Serial Interface	
Weight	13 kg [28.55 lbs.]		Per RU
.Dimensions ( W x H x D )	482mm(W) x 457mm(D) x 88mm(H) 19"(W) x 18"(D) x 3.5"(H)		2 Rack Units

Table 3-2 – Sector RU Specifications (Slim RU Series)

### 3.5.2 IP-BS Power Supply & Environment Technical Specification

<b>AC Input Power Supply For AC Powered Models</b>	
Input Voltage:	AC 100Volts ~ 250Volts
Input Frequency:	50Hz ~ 60Hz
AC Power Connector:	IEC
<b>Dissipated Power For AC Powered Models</b>	
OneRAN Main Unit:	350 Watt Max (Efficiency 75%)
Sector RU Unit (Slim RU)	400 Watt Max (Efficiency 85%)
Maximum OneRAN IP-BS	1500 Watt Max (Main Unit & 3x Sector RU) [950W nominal]

Table 3-4 – AC Power Supply Specifications

<b>DC Input Power Supply For DC Powered Models (DC RPSU)</b>	
Input Voltage:	DC 21 Volts ~ 28 Volts (float charge compatible)
Fuse Rating:	50A
DC Power Connector (DC RPSU)	Bolted Bus Bar; 2 hole lugs; ¼" holes; ¾" spacing (Use Blackburn CTL2-2516 or equivalent connector lug)
<b>Dissipated Power For DC Powered Models</b>	
OneRAN Main Unit:	260 Watt Max
Sector RU Unit (Slim RU)	270 Watt Max
Maximum OneRAN IP-BS	1080 Watt Max (Main Unit & 3x Sector RU)

Table 3-5 – DC Power Supply Specifications (DC RPSU)

<b>Environment Specification</b>	
Operating Temperature	-10° ~ +50°
Storage Temperature	-30° ~ +60°
Relative Humidity	5% ~ 95% - Non-condensing
Noise	Less than 60dBA, distance 1.5m
Airborne Particle	0 ~ 90 µg/m³

Table 3-6 – Environment Specifications

## 4 OneRAN Components

### 4.1 OneRAN Main Unit

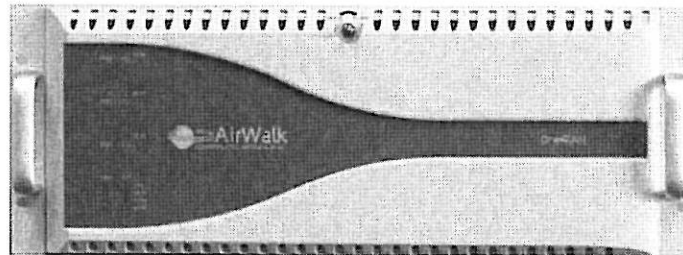


Figure 4-1 OneRAN Main Unit Photo (Front View)

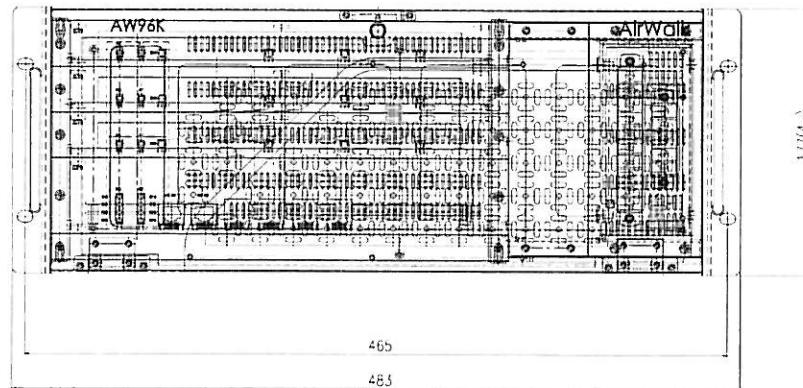


Figure 4-2 OneRAN Main Unit Line Diagram (Front View)

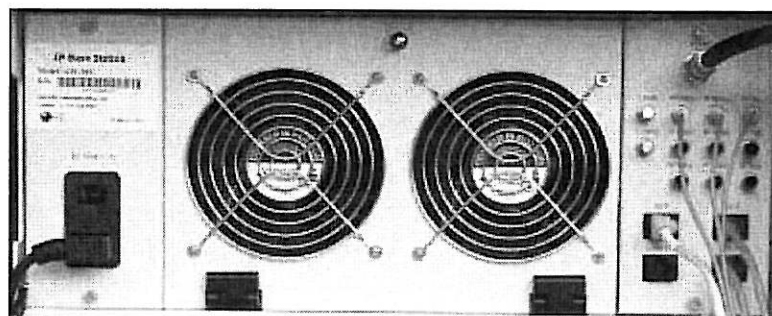


Figure 4-3 OneRAN Main Unit Photo (Back View)

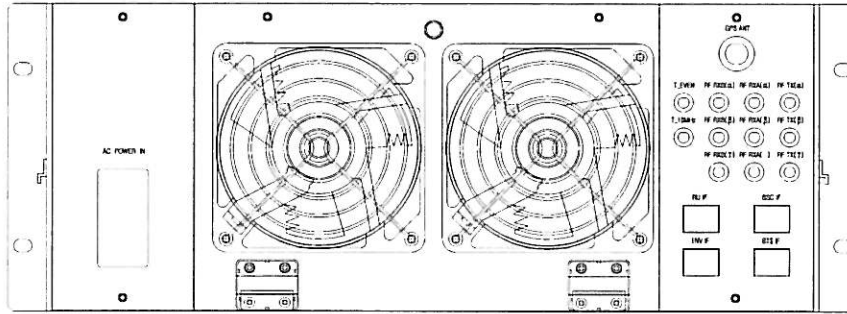


Figure 4-4 OneRAN – Line Diagram (Back View)

## 4.2 Sector RU (Remote RF Unit) [Slim RU Series]

The new Slim RU series Sector RU provides high power macrocell capabilities for both Omni and Sector site configurations. One unit is provisioned for each RF transceiver in a sector or Omni configuration. In a sector configuration one unit is designated a master RU for the purposes of alarm interfaces to the OneRAN and the other units are designated as slave RU systems. AC and DC powered models are available.

The Sector RU functions include a 20W power amplifier (measured at the antenna port), RF filtering for Tx and Rx paths, a duplexer function system, and a power supply. All components are packaged in a compact 2 rack unit package.

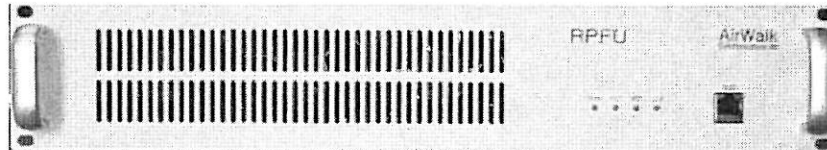


Figure 4-5 Sector RU [Slim RU Series] - Photo (Front View)

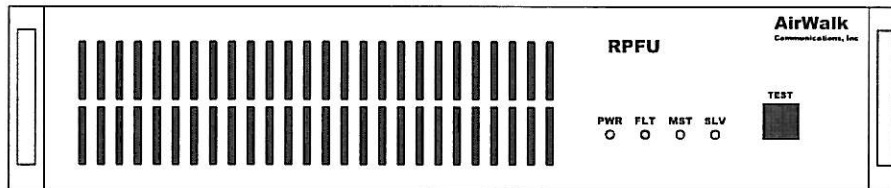


Figure 5-6 Sector RU [Slim RU Series] - Line Diagram (Front View)

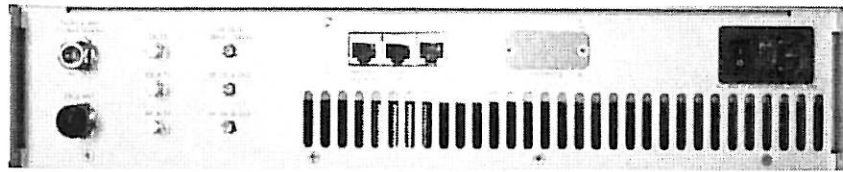


Figure 4-7 Sector RU [Slim RU Series] - Photo (Rear View)

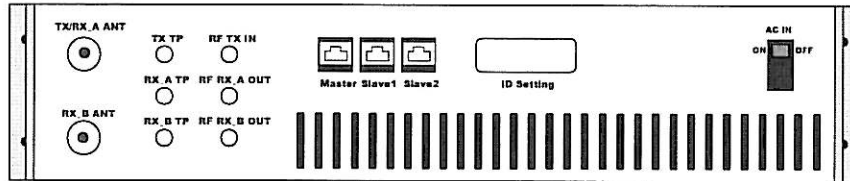


Figure 4-8 Sector RU [Slim RU Series] - Line Diagram (Back View)

### 4.3 Optional DC RPSU [DC Power Configurations Only]

DC powered RU systems are equipped with a separate DC power distribution unit which provides a single connection point for DC power source. Connections are provided for a DC OneRAN unit and up to 3 Sector RU units. Front panel circuit breakers and voltage/current measurements are provided. The RPSU is also equipped with an alarm interface to deliver RPSU alarms to the master RU system



Figure 5-14 RPSU DC Distribution Unit - Photo (Front View)

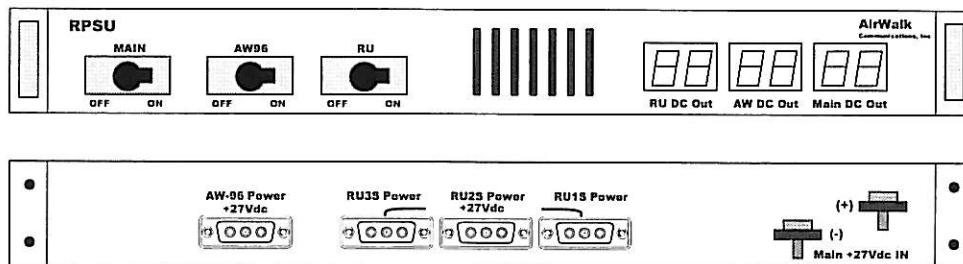


Figure 5-15 RPSU DC Distribution Unit – Line Diagram

## 4.4 Component LED Configuration

### 4.4.1 CDPB (Common Digital Processing Block)

LED status indicators are provided on the OneRAN CDPB module. LED functions are described in the following pictures and tables.

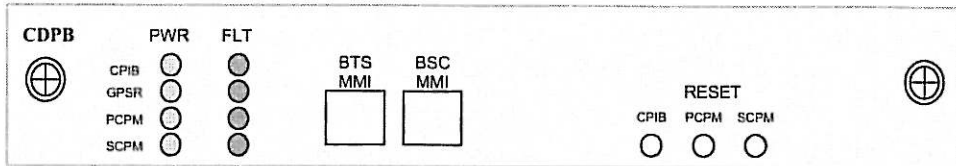


Figure 4-16 CDPB Panel Diagram

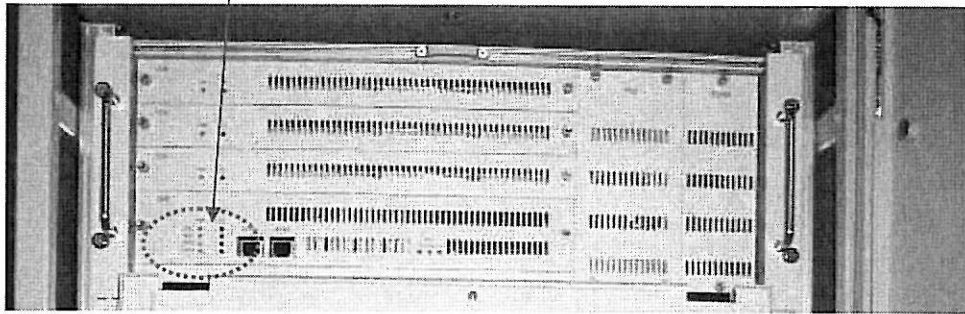


Figure 4-17 - CDPB Panel Photo

	Name	Color	On	Off	Note
1	CPIB	Green	Normal	Abnormal	CPIB power on/off indicator
2	GPSR	Green	Normal	Abnormal	GPSR power on/off indicator
3	PCPM	Green	Normal	Abnormal	PCPM power on/off indicator
4	SCPM	Green	Normal	Abnormal	SCPM power on/off indicator
5	CPIB	Orange	Abnormal	Normal	Check function of CPU in CPIB Board and ALARM
6	GPSR	Orange	Abnormal	Normal	GPSR alarm on/off indicator
7	PCPM	Orange	Abnormal	Normal	Check function of CPU in PCPM Board and ALARM
8	SCPM	Orange	Abnormal	Normal	Check function of CPU in SCPM Board and ALARM

Table 4-1 – CDPB Indicator Codes

NOTE: OneRAN models are NOT normally equipped with an SCPM (Secondary Call Processor Module), therefore these indicators are not used in most system applications.

### 4.4.2 XCVB

The XCVB module is equipped with 2 indicators. LED functions are described in the following pictures and tables.

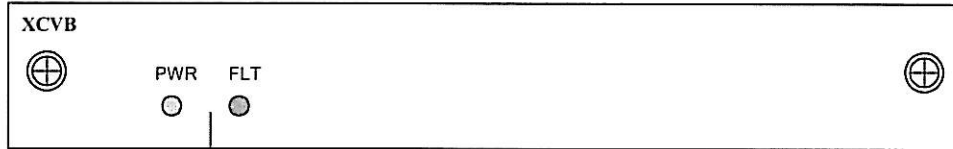


Figure 4-18 - XCVB Panel Diagram

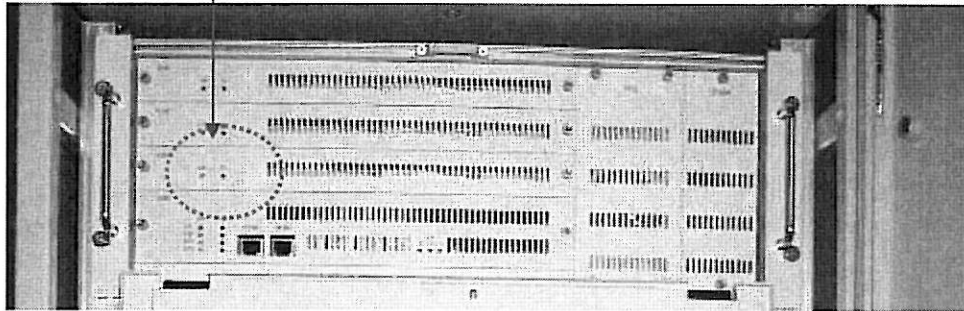


Figure 4-19 XCVB Panel Photo

	Name	Color	On	Off	Note
1	PWR	Green	Normal	Abnormal	XCVB power on/off indicator
2	FLT	Orange	Abnormal	Normal	XCVB alarm on/off indicator

Table 4-2 - XCVB Indicator Code Key

### 4.4.3 RU DC Power Distribution Unit (RPSU) [DC powered models only]

The RU RPSU (DC Power Distribution Unit) is equipped with a digital voltmeter and digital ammeter as shown in the picture below.

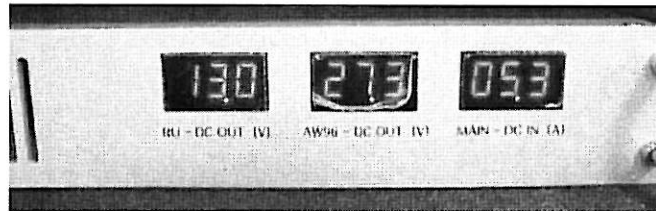


Figure 4-22 - RPSU DC Power Measurement Indicators

The following values are displayed on the front panel.

- RU DC Out (V)            Internal RU control unit voltage (nominally 12-14V)
- DC Out (V)              Main system DC voltage (nominally 24-27V)
- Main DC In (A)         Overall system current consumption (5-50A, load dependent)

Circuit breakers are also provided for system protection. A master circuit breaker controls power to the complete IP-RAN unit. Individual circuit breakers are provided for protection of the main unit and RU amplifier system.

Note that only DC powered models are equipped with the RPSU DC power distribution module.

#### 4.4.4 Sector RU Front Panel Indicators (Sector RU)

The Sector RU is equipped with indicators for power, communications activity and alarms. The location of the RU front panel indicators is shown in the following diagram (each RU).

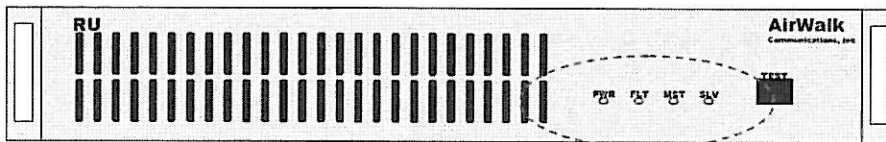


Figure 4-23 – RU Front Panel Diagram

A description of Sector RU Front Panel indicator functions is shown in the following Table.

LED	Color	On	Flash	Off	Note
PWR	Green	Normal	N/A	No Power	AFEU power on indicator
FLT	Orange	Fault	N/A	Normal	RU Alarm(s) detected
MST	Green	N/A	Comm	No Comm	Communications with OneRAN
SLV	Green	N/A	Comm	No Comm	Communications with other RU

Table 4-4 – Sector RU Front Panel Indicator Codes