# RSN-CDMA-37-C Manual



R-tron Inc.



This equipment is indoor use and all the communication

#### **Abbreviations**

Abbreviations used in this manual, in RSN-CDMA-37-C.

AC Alternating Current

ANT Antenna

CDMA Code Division Multiple Access

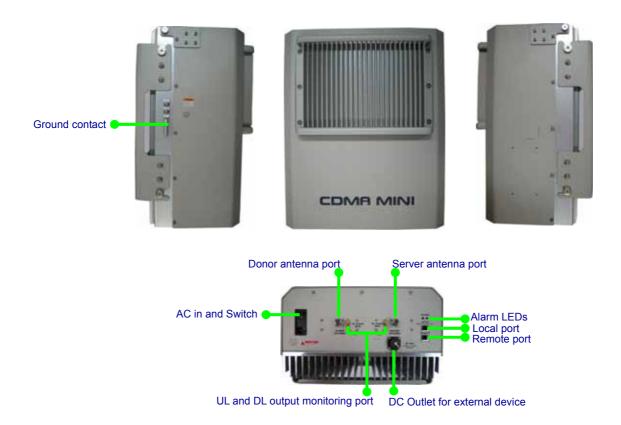
DC Direct Current
GND Grounding

GUI Graphic User Interface
LED Light Emitting Diode
PSU Power Supply Unit
MCU Main Control Unit
UDC Up Down Converter
RF Radio Frequency

TEMP Temperature

VSWR Voltage Standing Wave Ratio

#### 1. Introduction



RSN-CDMA-37-C is used to fill out areas in CDMA mobile systems, such as base station fringe areas, business and industrial buildings, etc.

RSN-CDMA-37-C receives signals from a base station, amplifies and retransmits the signals to mobile stations. Also it receives, amplifies and retransmits signals in the opposite direction. Both directions are served simultaneously with the following features:

- 65MHz bandwidth service
- Band Selection (5MHz, 10MHz, 15MHz, 20MHz, 5MHz+5MHz, 10MHz+5MHz, 15MHz+5MHz, 20MHz+5MHz, 5MHz+5MHz+5MHz) service
- Roll Offs: 50dBc at 1 MHz outside pass-band

The RSN-CDMA-37-C is controlled by powerful microprocessors. Operational status LEDs are visible on the bottom of the repeater.

The repeater works with convection cooling without fan because it has a radiator behind the body of RSN-CDMA-37-C.

**Proprietary & Confidential** 

Page 4 Issue: 1.0 Operational parameters, such as gain, power levels, alarm condition, Automatic Gain Control condition, etc. are set using a desktop or notebook and the remote access is capable of control the RSN-CDMA-37-C.

# 2. Description

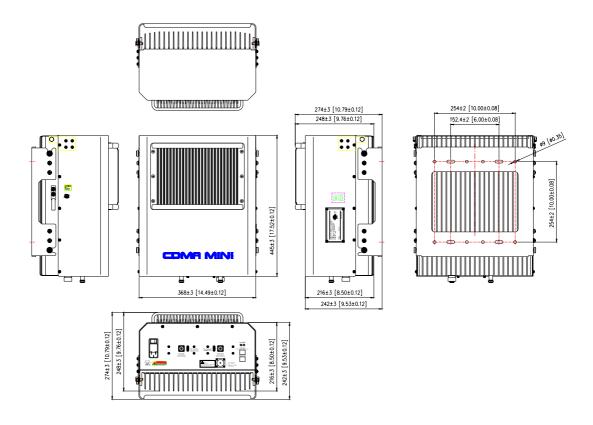
# 2.1 System Specifications

# 2.1.1 Electrical Specifications

Parameter	Down Link	Up Link	
Operating Frequency	1930MHz~1995MHz	1850MHz~1915MHz	
Gain	45dB to 95dB		
Roll off	≤50dBc @Fedge+/-1MHz		
Gain ripple	±1.5dB		
Delay	5.0uS Max		
VSWR	1.5Max		
Input Range	-45dBm ~ -58dBm		
Power supply	85V~264V, 50/60Hz typ.		
Operating temperature	-10 ~-50		
Storage temperature	-20 ~60		
Consumption power	≤100W		
Band Selection	5MHz , 10MHz , 15MHz , 20MHz 5+5MHz , 10+5MHz , 15+5MHz , 20+5MHz		
	5+5+5MHz		

#### 2.1.2 Mechanical Specifications

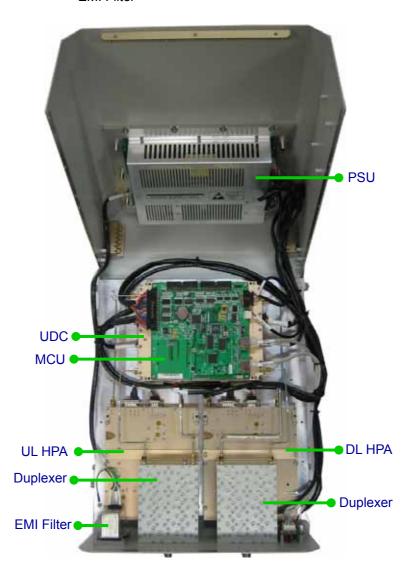
Parameter	Specification	
RF connectors	N-female x 2, SMA-female x 2	
Size	14.49 X17.52 X 9.33(Inch), 368 X 445 X	
	237(mm)	
Weight	27kg (59.5lbs)	



#### 2.2 Sub Unit Overview

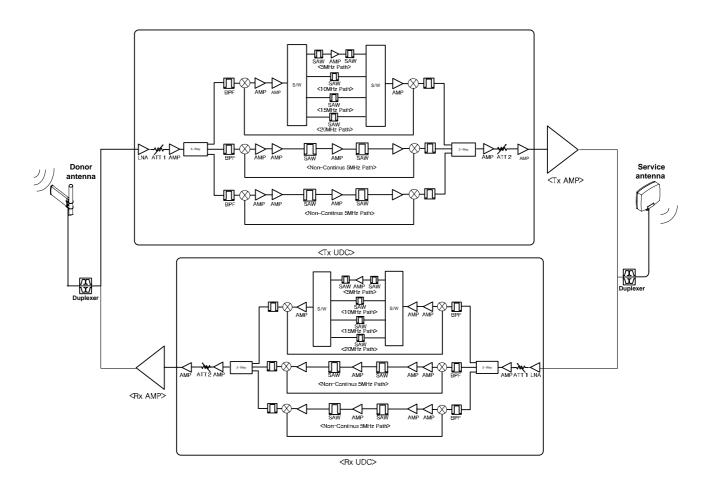
RSN-CDMA-37-C is composed of the following sub units:

- UDC(Up Down Converter)
- HPAs(High Power Amplifiers)
- Duplexers
- Main Control Unit (MCU)
- Power Supply Unit (PSU)
- EMI Filter



## 2.2.1 Block diagram

The following, Figure explains how the RSN-CDMA-37-C serves signals.



#### 2.2.2 UDCs

The UDC Module is basically a bi-directional amplifier that sharply filters out unwanted noise.



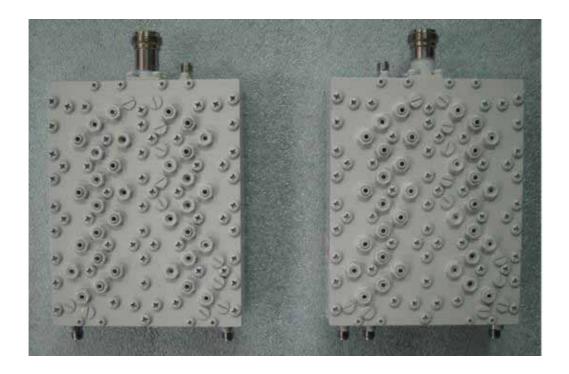
<DL UDC>



<UL UDC>

## 2.2.3 Duplexers

A multiplexer is a device that combines two or more signals onto a common channel or medium to increase its transmission efficiency.



## 2.2.4 Main Control Unit (MCU)

MCU is the control unit of RSN-CDMA-37-C. It controls and monitors operational parameters. It also generates alarms, an event log and many other functions of the RSN-CDMA-37-C.



#### \*Pin Map\*

Port	Connected to	
J6	MCU Vcc(+12V)	
J7	CDMA DL,UL Control Pin	
J8	PSU Alarms / Status LEDs	
P1	Local	
P2	Remote	

#### 2.2.5 Power Supply

The Power Supply Unit (PSU) supplies a steady DC power to RSN-CDMA-37-C by drawing power from the general in-wall AC outlets



#### \*Specification\*

Item		Specifications
Environmental	Operating Temp	-10 ~50
	Humidity	20%~90%RH
	Cooling method	Natural air
Voltage		AC115V
Rated Output(DC)		6V, 5A / 12V, 5A / -12V, 5A / 27V,
		10A DC
Frequency		60Hz typ
Leakage Current		0.5mA max.@110V AC

## 2.2.6 High Power Amplifier (HPA)

The High Power Amplifiers the transmitted signal from a base station at the final stage of the repeater and vice versa.



<DL HPA>



<UL HPA>

# 2.2.7 Noise(EMI) Filter



## 2.2.8 Communication & LED Board



