

iDEN MINI
(RSN-iDEN-30)
User's Manual



R-tron Inc.

RF EXPOSURE INFORMATION

The antenna used for this transmitter must not exceed 7dBi and must be installed to provide a minimum separation distance of 22cm from all persons.



CAUTION

This equipment is indoor use and all the communication wiring are limited to inside of the building.

This document describes the specifications, installation and operation of iDEN MINI.

Hardware and software mentioned in this document are subject to continuous development and improvement. Consequently, there may be minor discrepancies between the information in the document and the performance and design of the product. Specifications, dimensions and other statements mentioned in this document are subject to change without notice.

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Abbreviations

Abbreviations used in this manual, in iDEN MINI.

AC	Alternating Current
ALC	Automatic Level Control
ANT	Antenna
ASD	Automatic Shutdown
CDMA	Code Division Multiple Access
DC	Direct Current
GND	Grounding
GUI	Graphic User Interface
iDEN	Integrated Digital Enhanced Network
LED	Light Emitting Diode
PSU	Power Supply Unit
RF	Radio Frequency
TEMP	Temperature
VSWR	Voltage Standing Wave Ratio

1. Introduction



Figure 1. R-tron iDEN MINI

iDEN MINI repeater is used to fill out areas in iDEN mobile systems, such as base station fringe areas, business and industrial buildings, etc.

iDEN MINI 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:

- 7MHz or 18MHz-bandwidth service @ 800MHz's
- 5MHz-bandwidth service @ 900MHz's
- Band Shifting @ 800MHz's and 900MHz's
- Roll Offs: 65 dBc at 0.5MHz outside pass-band

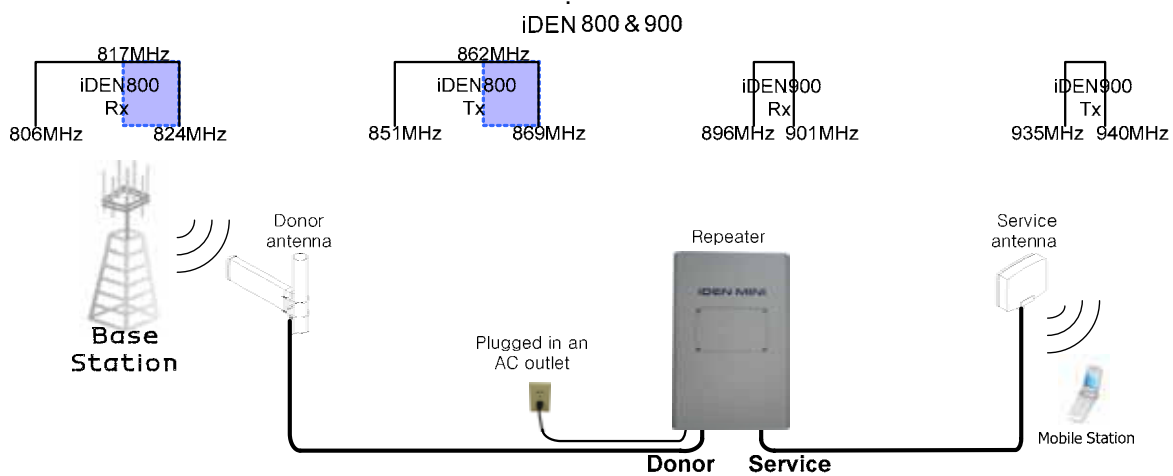


Figure 2. Overview: Service

2. Description

2.1 System Specifications

2.1.1. Electrical Specifications

Parameter		iDEN 800	iDEN 900	
Selectable Bandwidth	DL & UL	In-band BW:18M In-band BW:7.0M	In-band BW:5M	
Frequency Selection	DL	18MHz-bandwidth	851~869MHz 850.8~868.8MHz 850.6~868.6MHz	
		7MHz-bandwidth	862~869MHz 861.8~868.8MHz 861.6~868.6MHz	
		5MHz-bandwidth		935~940MHz 934.8~939.8MHz 934.6~939.6MHz
	UL	18MHz-bandwidth	806~824MHz 805.8~823.8MHz 805.6~823.6MHz	
		7MHz-bandwidth	817~824MHz 816.8~823.8MHz 816.6~823.6MHz	
		5MHz-bandwidth		896~901MHz 895.8~900.8MHz 895.6~900.6MHz
Roll off	DL & UL	≤65dBc @Fedge+/-500KHz	≤65dBc @Fedge+/-500KHz	
Gain ripple		±1.5dB (Typical)		
Gain	DL & UL	50dB to 80dB		
Output Power	DL & UL	30dBm		
Delay	DL & UL	8.0μs Max.		
VSWR	DL & UL	1.5Max.		
Rx Noise Figure		5dB Max. (80dB Gain)		
		12dB Max. (50dB Gain)		
Input Range	DL & UL	-30dBm Max.		
Power supply		110V~125V, 60Hz typical		
Operating temperature		*-10°C~50°C/14°F~122°F		
Storage temperature		-20°C~60°C/-4°F~140°F		
Consumption power		≤112.2W		

2.1.2. Mechanical Specifications

Parameter	Specification
RF connectors	N-female x 2, SMA-female x 4
Size	20.87 X 14.01 X 8.66(Inch), 530 X 356 X 220(mm)
Weight	24kg (52.912lbs)

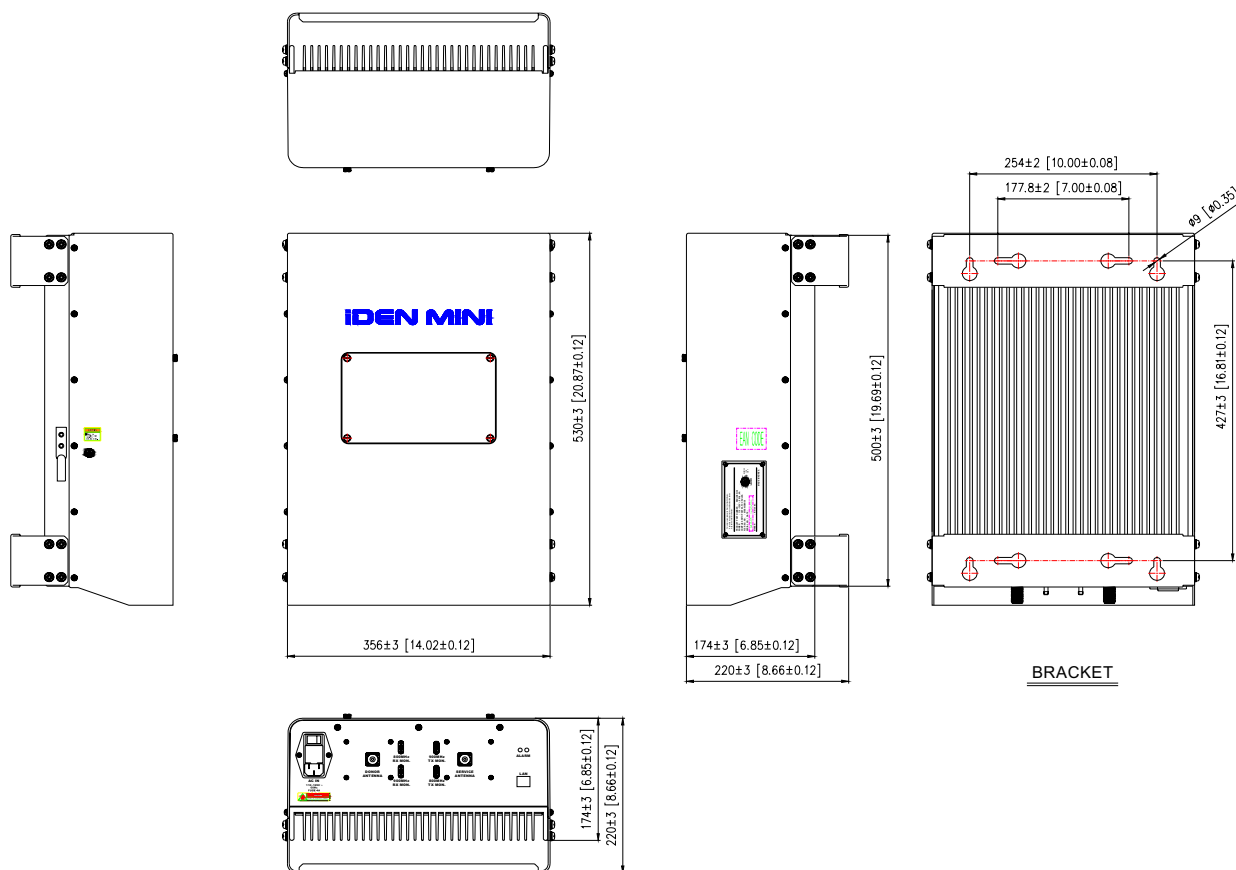


Figure 3. Dimension of iDEN MINI

2.2 Sub Unit Overview

iDEN MINI is composed of the following sub units:

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

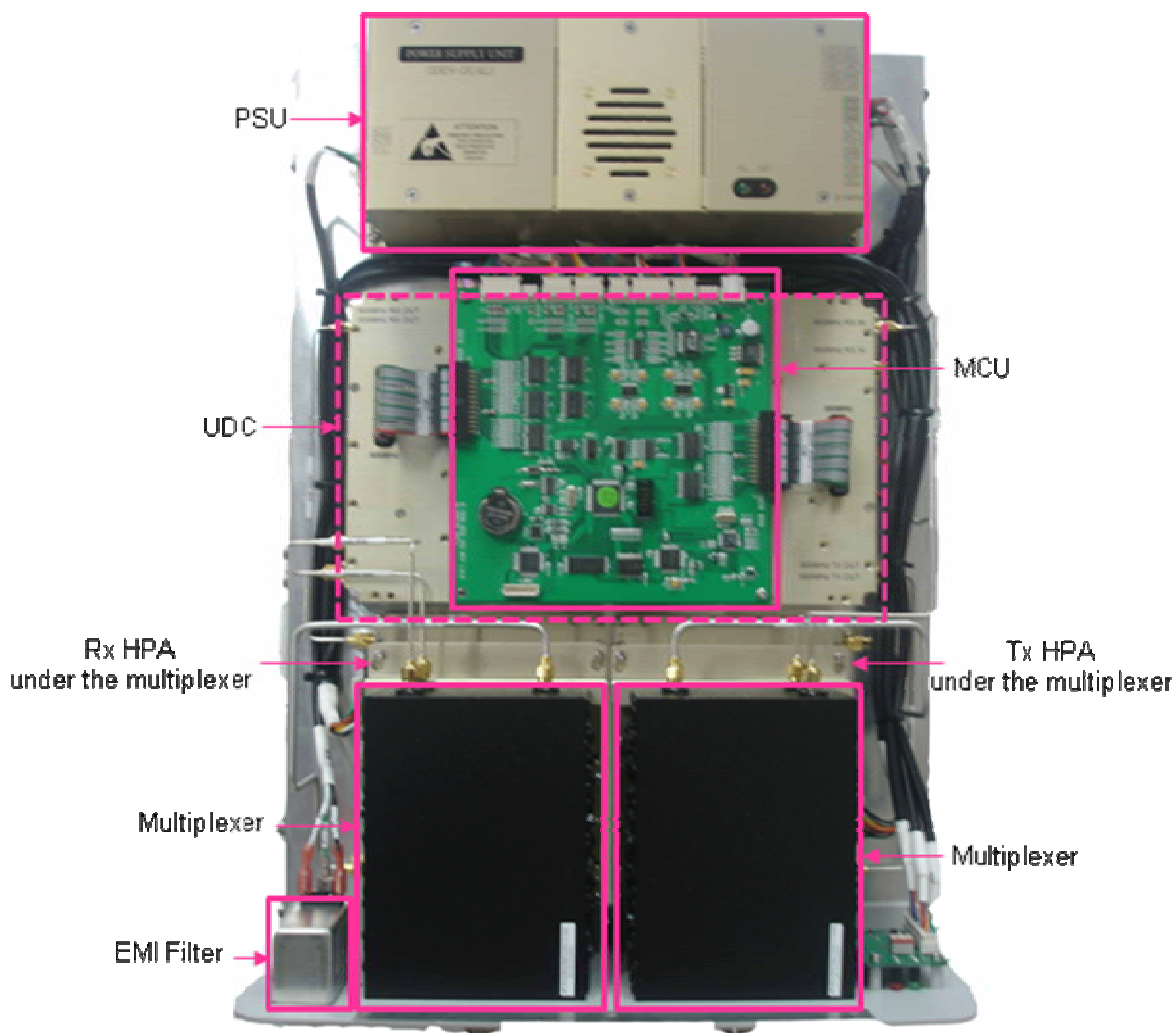


Figure 4. Internal View of iDEN MINI

2.2.1. UDC Module

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



Figure 6. UDC Module

2.2.2. Multiplexer

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

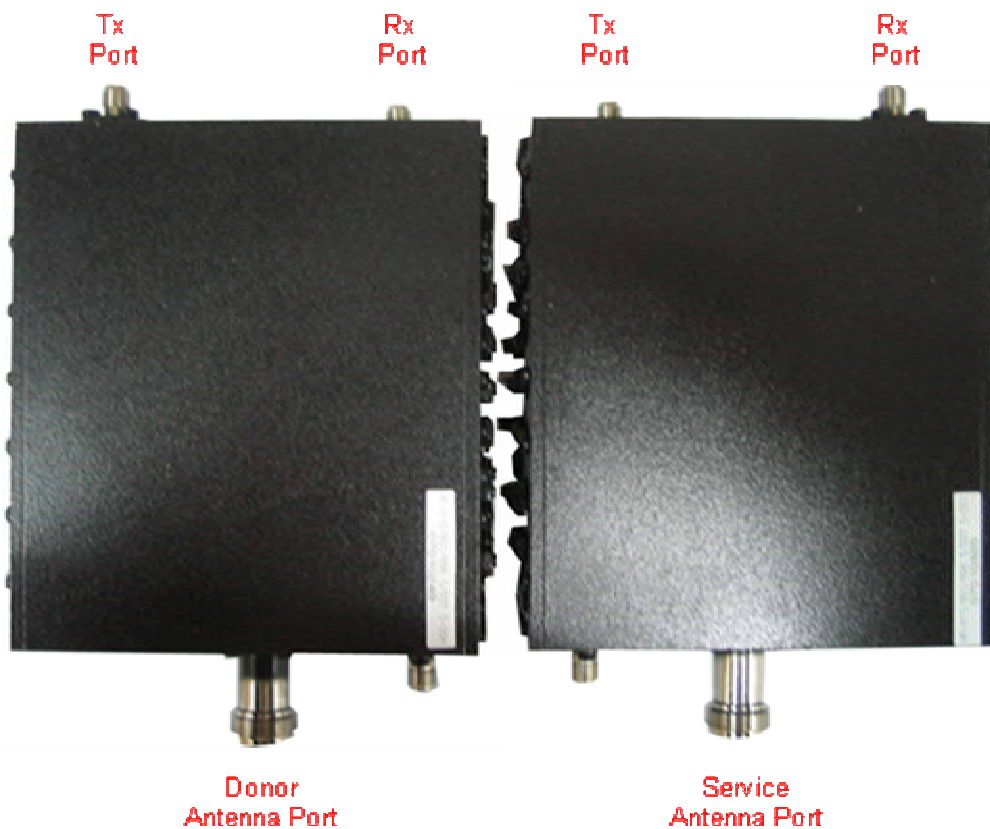


Figure 7. Multiplexer