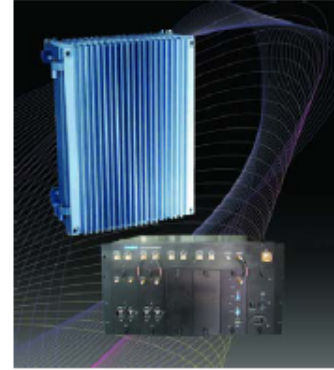


### Features

- Optical fiber transmission up to 20km - suitable to cover town, highway and residential area.
- Highly scalable with maximum configuration of 1 main unit, 4 optical interface modules and up to 8 remote units.
- Wide coverage with output power of 5W, 10W or 20W.
- Laser technology with high linearity.
- Remote Unit is light weight and easily installed with wall mounting chassis.
- Built-in alarm interface for remote system monitoring.
- Optional external backup battery permits operation in unstable power supplies.



### Product Description

The RA-1082 is a CDMA800 outdoor broadband optical RF repeater. It is mainly used for outdoor coverage enhancement and point-to-point indoor distribution system. It uses single-mode fiber and is suited for applications where large signal coverage is required, such as high-rise office buildings, highway, hotels, shopping malls, underground tunnels, airports and convention centers.

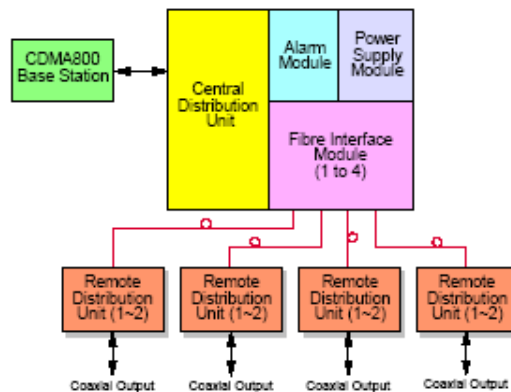
The system comprises of:

- A Central Distribution Unit (CDU) that connects the duplex RF ports of the base station to the Fiber Interface Module. The CDU comes installed in a rack-mountable 19" chassis.
- The Fiber Interface Module (FIM) converts the downlink RF signals to optical signals, and vice-versa for the uplink signals. Up to 4 FIMs can be installed in a chassis with a CDU, with each FIM supporting 2 single mode fibers.
- The Remote Unit (RU) converts the optical signals from the FIM to RF outputs. Each RU has one antenna ports for connection to passive antennas.
- The Alarm Module (ALM) can be installed to report alarms to the BTS.
- The Power Supply Unit (PSU) converts the ac voltage to power up the CDU, FIM and ALM.

### Available Model

Model	Description
RA-1082-L	Main Unit , Direct Coupling
RA-1082-R	Remote Unit

### System Block Diagram



### Technical Specifications

#### RF Specifications

Frequency Range, Uplink – [MHz]	825 - 835
Frequency Range, Downlink – [MHz]	870 – 880
Max. System Gain – [dB]	
- Uplink	65 ± 2
- Downlink	70 ± 2
Gain Adjustable Range (1dB step) – [dB]	0–30 ± 1.5
Max. Output Power (with ALC) – [dBm]	
- Downlink (Option)	37, 40 or 43 ± 1
- Uplink	0 ± 1
Pass Band Ripple, p-p – [dB]	≤ 3 (typ. 2)
Noise Figure, Uplink – [dB]	≤ 5 (typ. 4)
In-band Spurious – [dBm]	≤ -22 / 30kHz
Out-of-Carrier Spurious, UL – [dBc]	
- Δf ≥ 900kHz	-42 / 30kHz
- Δf ≥ 1.98MHz	-54 / 30kHz
Out-of-Carrier Spurious, DL – [dBc]	
- Δf ≥ 750kHz	-45 / 30kHz
- Δf ≥ 1.98MHz	-60 / 30kHz
Out-of-band Spurious, Δf ≥ 1MHz – [dBm]	
- 9kHz to 150kHz	≤ -36/1kHz
- 150kHz to 30MHz	≤ -36/10kHz
- 30MHz to 1GHz (excluding *)	≤ -36/100kHz
- 1GHz to 12.75GHz (excluding **)	≤ -36/1MHz
- 806MHz to 821MHz *	≤ -67/100kHz
- 885MHz to 915MHz *	≤ -67/100kHz
- 930MHz to 960MHz *	≤ -47/100kHz
- 1.71GHz to 1.92GHz **	≤ -47/100kHz
- 3.4GHz to 3.53GHz **	≤ -47/100kHz
In-band Intermodulation – [dBm]	-15 / 30kHz
Out-of-band Intermodulation – [dBm]	
- Δf ≥ 1MHz (9 kHz – 1 GHz)	-36/100kHz
- Δf ≥ 1MHz (1 – 12.75 GHz)	-36/1MHz
Out-of-band Suppression – [dBc]	
- Δf ≥ 2.5MHz	≤ -55
- Δf ≥ 10MHz	≤ -70
Input VSWR	≤ 1.4
System Group Delay – [μsec]	≤ 5
Downlink Input Power – [dBm]	-5 to +5
Quality of Waveform	> 0.960
Impedance – [Ω]	50

#### Optical Specifications

Wavelength (Option) – [nm]	1310 or 1550
Optical Output Power – [dBm]	0 – 2
Max. Optical path Loss – [dB]	10
Optical Return Loss – [dB]	≥ 50
Connector Type	FC/ UPC

#### Environmental

Operating Temperature – [°C]	-25 to +55
Operating Humidity – [%]	≤ 95
MTBF – [hrs]	> 50,000
Environmental Class (Remote Unit)	IP65

#### Central Distribution Unit

RF Connectors	N-Female
Power Supply Options	155-285VAC / 45-55Hz or -48VDC or +24VDC
Power Consumption – [W]	≤ 35
CDU Enclosure Dimensions, HxWxD – [mm]	265 x 480 x 310 (19" 6U)
Weight – [kg]	15 (approx.)
MCU Battery Backup Time – [hr]	6

#### Fiber Interface Module

RF Connectors	SMA-Female
Single-Mode Fiber Connectors	1 pair
- Indoor	SC/APC Female
- Outdoor	FC/UPC Female
LED Alarm and Status Indicators	Optical Input
Power Supply – [VDC]	+9
Power Consumption – [W]	≤ 5
Dimensions, HxWxD – [mm]	352 x 190 x 71
Weight – [kg]	1.8

#### Alarm Module

RS-232 Interface	DB-9 connector
Remote Alarm Conn (contact closure)	RJ45
Communications (not used)	8-pin RJ-45
LED Alarm and Status Indicators	CDU Status
Power Supply – [VDC]	+9
Power Consumption – [W]	10
Dimensions, HxWxD – [mm]	352 x 190 x 71
Weight – [kg]	1.0

#### Power Supply Unit

LED Alarm and Status Indicators	Power
Power Supply – [VAC]	155–285 / 45-55Hz
Power Consumption – [W]	1.5
Dimensions, HxWxD – [mm]	352 x 190 x 71
Weight – [kg]	1.6

#### Remote Unit

RF Connectors	N-Female
Single-Mode Fiber Connectors	1 pair
- Indoor	SC/APC Female
- Outdoor	FC/UPC Female
LED Alarm and Status Indicators	Power
Power Supply Options	155-285VAC / 45-55Hz or -48VDC
Power Consumption – [W]	220 (20W output) 180 (10W output) 150 (5W output)
Dimensions, HxWxD – [mm]	600 x 450 x 295
Weight – [kg]	35 (approx.)
MCU Battery Backup Time – [hr]	6