

RC3000 PCM Multi-Service Multiplexer

RC3000 is a cost-effective optional 2E1 or 4E1 DXC groomer and multi-service multiplexer. It provides 2E1, 4E1 or PDH optical interface for uplink and 3 slots for different subscriber's modules including FXO, FXS, E&M, magneto telephone, RS232/RS485/V.24, fractional Ethernet/V.35 to E1. It supports 256 timeslots full cross-connect that makes full use of current line resource and guarantees business expansion. Because of a large variety of interfaces, RC3000 has widely application, including electricity, industry as well as railway and airport. RC3000 can be deployed either in point-to point topology or point to multipoint topology as the remote site of RC3000-15/RC3000-6/RC3000E. It can be managed via local CLI or telnet, also can be monitored and managed as the remote site of RC3000-15/RC3000-6/RC3000E in a centralized way on GUI based Raisecom NView NNM system.



The front panel of RC3000



The back panel of RC3000

Highlights

- | | |
|---|---|
| Various interfaces for customer access | Supports FXO, FXS, E&M, RS232, RS485, V.24, G.703 64K, Eth, V.35 interface for accessing diversified subscriber's business. |
| Comprehensive alarm indication | LED on front panel showing device operation/alarm status for convenient monitoring and when detectig alarm, the buzzer on device will ring automatically. |
| Convenient deployment | Auto creat crossconnet between upink E1 and subscriber's subcard |
| Full cross connect based on 64k | Supports 256 timeslots full cross connect. |
| Easy management | Management via local CLI, telnet or as the remote site of RC3000-15/RC3000-6/RC3000E on GUI-based Raisecom NView NNM system. |

Typical Application

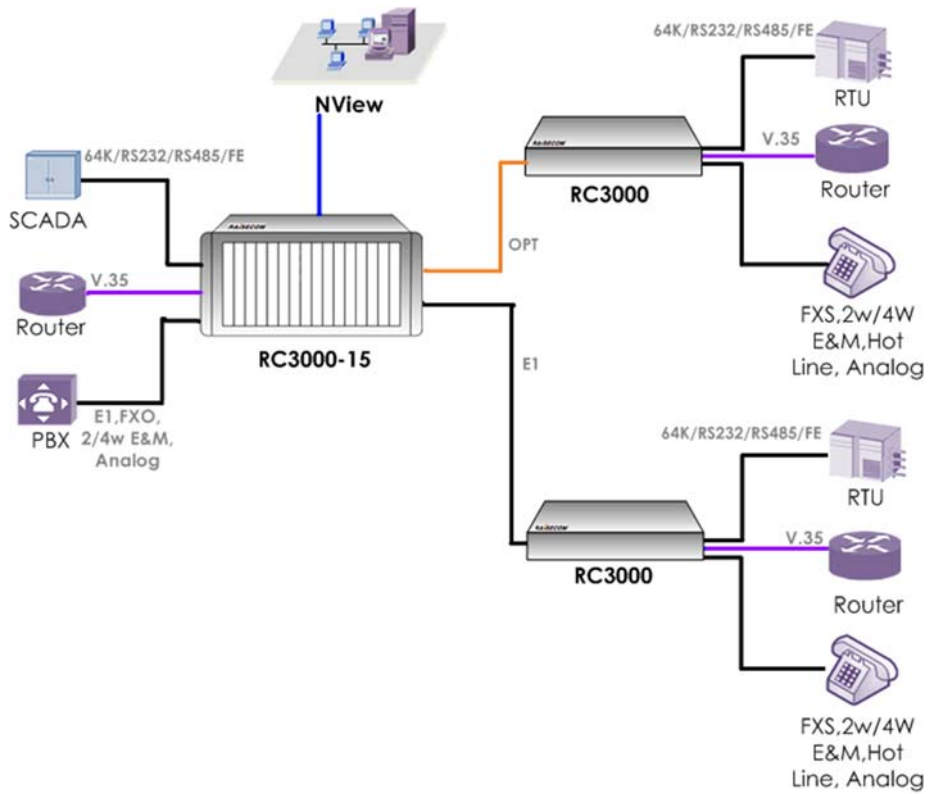


Figure.1 Point to multipoint as remote site

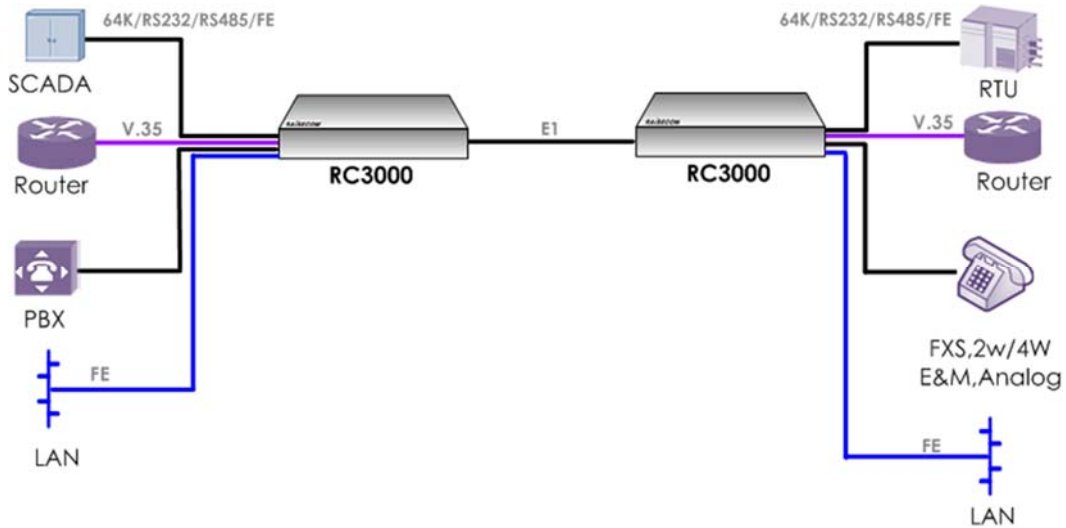


Figure.2 Point to point with E1 for uplink

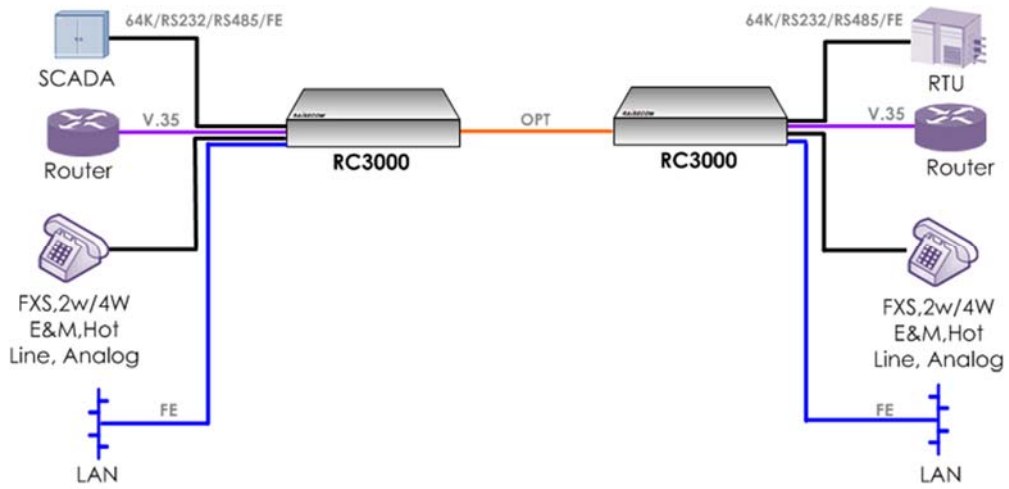


Figure.3 Point to point with optical for uplink

Key Features

4E1 fixed subcard for uplink	4x E1 ports 120Ω balanced E1 code: HDB3 Unframed, PCM30, PCM31 and CRC4 configurable Internal/external loopback E1 loopback remove automatically BERT E1 sends clock mode: master/slave
OPT-FE2E1 fixed subcard for uplink	Optical interface: 1 PDH optical interface with SFP connector Support ALS function. Supports remote device power-off alarm E1 interface: 2 E1 ports with DB9F connector, balance, unbalance configurable Unframed, PCM30, PCM31 configurable Ethernet interface: Electrical 10/100Mbps auto-negotiation, speed and duplex configurable MTU: 1916Byte Flow control: IEEE 802.3X in full duplex mode Back pressure in half duplex mode Rate limit: ingress/egress with increments 64kbit/s
Cross connect	256 timeslots cross-connecting with signaling
Clock mode	Master/slave configurable
Work mode	Master/slave configurable
Online Upgrading	Support online upgrade firmware, BOORTROM and FPGA file via telnet interface
Voice subcard for downlink	Analog exchange to digital network interface (A-law PCM) Up to 10 FXS/FXO interfaces Direct Inward Dialing (DID) with polarity reversal for direct access to PBX extensions via the public network Private Line Automatic Ring down (PLAR) to link two telephones together for immediate connection as a "hotline" Programmable A,B signaling bits (timeslot 16; E1 systems) support all voice switching equipment Supports Caller ID Display Systems Supports both tone and pulse dialing Software adjustable gain of each Tx/Rx channel step at 0.1dB



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E&M subcard for downlink	<p>Analog exchange to digital network interface (A-law PCM)</p> <p>Supports the E&M Types V</p> <p>Software configurable 2-wire or 4-wire mode</p> <p>Software adjustable gain of each Tx/Rx 2/4W channel step of 0.1dB</p>
Low speed data subcard for downlink	<p>RS232 Asynchronous Data Interface 300 bps - 19.2Kbps</p> <p>V.24 Synchronous Data Interface 64Kbps - 128Kbps</p> <p>RS422 Asynchronous Data Interface</p> <p>RS485 Asynchronous Data Interface 300 bps - 19.2Kbps</p> <p>G.703 co-directional at 64Kbps Data Interface</p> <p>V.35 Synchronous Data Interface N×64 Kbps (N=1~31)</p>
Eth subcard for downlink	<p>10/100Mbps auto-negotiation, full duplex/half duplex auto-negotiation, speed and duplex configurable.</p> <p>MTU:1916Byte</p> <p>Flow control: IEEE 802.3X in full duplex mode Back pressure in half duplex mode</p> <p>Packet relay: IEEE 802.1d Spanning Tree transparent IEEE 802.1q VLAN transparent</p> <p>Bandwidth: Nx64Kbps(N=1~31)</p>
Management	<p>Transparent transmit SA bit</p> <p>Optional SA4, SA5 and one timeslot for management channel</p> <p>Management via local CLI, telnet</p> <p>Management as the remote site of RC3000-15/RC3000-6/RC3000E on GUI based NView NNM system</p>

Specifications

Compliances

Standards & protocols	
	IEEE 802.3x flow control
	IEEE802.3u 100Base-T
	ITU-T G.703,
	ITU-T G.704
	ITU-T G.706
	ITU-T G.712
	ITU-T G.823
	ITU-T V.11
	ITU-T V.28
	ITU-T V.35
	ITU-T V.24

**Voice interface of
subscriber's
subcard**

FXS:
Feed Voltage: DC -48V/DC -24V
Loop circuit: 18~24Ma
Ring current voltage: AC 65±10 V , 25 Hz
2-wire input impedance: 200+680Ω
Gain :0±0.5 db (from 2-wire mode to
4-wire mode);-3.5±0.5 db(from 4-wire
mode to 2-wire mode)
Frequency characteristics:0±0.2 db
Return Loss: 30~40 db
Balance: 60~70 db
CMRR: 60~70 db
PSRR: Vcc: 30 db
Vbat: 30 db
Idle channel noise: 75 db

FXO:
Ringing detection voltage: ≥35 V
Ringing detection frequency: 17~63 Hz
2-wire loop impedance:
Offhooking: 200+680Ω
Onhooking: 2MΩ
Gain :onhooking: -0.60 db(from 2-wire
mode to 4-wire mode);offhooking:
-3.5±0.5 db(from 4-wire mode to 2-wire
mode)
Frequency characteristics: 0±0.2 db
Return Loss: 30~40 db
Balance: 60~70 db
MMRR: 60~70 db
PSRR: 30 db
Idle channel noise: 75 db

**E&M interface of
subscriber's
subcard**

2-wire E&M:
AD gain: 0 db
DA gain: -3.5 db
Frequency characteristics
300~3400Hz: 0±0.2 db
Output/Input loop impedance: 600Ω
Balance: 60~70 db
Return Loss: 20 db

	Maximum common mode voltage: 300 V MMRR: 30 db Idle channel noise: 60 db 4-wire E&M: AD gain: +14 db DA gain: +4 db Frequency characteristics 300~3400Hz: 0±0.2 db Output/Input loop impedance: 600Ω Balance: 60db Maximum common mode voltage: 300 V MMRR: >60 db PSRR: 30 db Idle channel noise: >60 db
Management port	1xconsloe (RJ45) 1x telnet port 1xbutton of buzzer
Indicator	SYS for system operation PWR for power supply OP L LOS/ERR, OP R LOS/ERR for local optical interface E1 L LOS/E1 R LOS for optical E1 4E1/2E1/OPT :types of uplink subcard USED:E1 using status LOS/LOF/ AIS/ LOMF for E1 alarm RAL: remote E1 alarm TX/RX for console port LINK/ACT for work status of telnet port 100M for speed of telnet port

DIP switch	DIP 1: ON :External loop OFF: Internal loop DIP 2: ON: Loopback enable OFF :Loopback disable DIP3: ON: Work with RC3000(REV.A) OFF: Work with RC3000(REV.B) DIP 4: ON: Auto create 8 timeslots for each subscriber's subcard OFF: Auto create 10 timeslots for each subscriber's subcard
Dimension	440mm (wide) ×300mm (deep) ×44.5mm (high)
Weight	RC3000-2E1-AC: 3.90kg RC3000-4E1-AC: 3.88kg RC3000-OPT-FE2E1-AC:3.89kg
Power supply	AC: 90V-264V DC: -36V~-72V
Power consumption	20w~50w
Working enviroment	Temp: 0°C ~50°C RH: ~90% non-condensing

Ordering Information

CHASSISES

RC3000-4E1-AC	PCM Multi-service Multiplexer, 4 links 120ohm balanced E1 (RJ-45 connector) for up-link interface, it provides 3 expansion slots for down-link interface card, AC power supply
RC3000-4E1-DC	PCM Multi-service Multiplexer, 4 links 120ohm balanced E1 (RJ-45 connector) for up-link interface, it provides 3 expansion slots for down-link interface card, AC power supply
RC3000-OPT-2E1-AC	PCM Multi-service Multiplexer, one optical interface (SFP connector) for up-link interface, it provides 3 expansion slots for down-link interface card, with 2E1 (DB9M connector) and one 10/100M auto-sensing Fast Ethernet port, AC power supply
RC3000-OPT-2E1-DC	PCM Multi-service Multiplexer, one optical interface (SFP connector) for up-link interface, it provides 3 expansion slots for down-link interface card, with 2E1 (DB9M connector) and one 10/100M auto-sensing Fast Ethernet port, DC power supply

SUBSCRIBER'S SUBCARDS

RC3000-SUB-10FXS	Down-link Foreign Exchange Subscriber (FXS) interface card, 10 channels per card, 3 RJ45 connectors
RC3000-SUB-10FXO	Down-link Foreign Exchange Office (FXO) interfaces card, 10 channels per card,3 RJ45 connectors
RC3000-SUB-8EM	Down-link 2/4-wire E&M voice card, 8 channels per card, one SCSI50 Female connector Adapter cable: CBL-VOICE-SCSI50M(40)/NC-3m
RC3000-SUB-DMT	Down-link magneto telephone interface card, 8 interfaces per card, RJ-45 connector
RC3000-SUB-DETHx2	Down-link high speed 10/100 Base-T Ethernet port, two interfaces per card, user selectable data rate N×64Kbps of "N" (1~31) , RJ45 connector
RC3000-SUB-DV35	Down-link high speed V.35 synchronous data interface card, one interface per card, user selectable data rate N×64Kbps of "N" (1~31) , DCE, HDB26 connector ,additional cable for M34 standard V.35 interface.
RC3000-SUB-DV24	Down-link low speed V.24 synchronous data interface card, bit rate: 64Kbps to 128Kbps, 4 interfaces per card, RJ45 connector
RC3000-SUB-D232	Down-link low speed RS232 data interface card, up to 19.2Kbps RS232 asynchronous data, 8 interfaces per card, RJ45 connector
RC3000-SUB-D485	Down-link low speed RS485 asynchronous data interface card, up to 19.2Kbps,8 interfaces per card, RJ45 connector
RC3000-SUB-DC64K	G.703 Co-directional 64Kbps data interface card,4 interfaces per card, RJ45 connector

CABLES

CBL-E1-CC3/BNCF	CC3 connector to BNC 75ohm unbalanced female connector, 1m
CBL-V35-HDB26M/M34F	HDB26 male connector to DCE cable of M34 female connector, 2m
CBL-HDB26M/M34M-X	HDB26 male connector to M34 male connector crossover cable, 2m
CBL-V35-HDB26M/DB25M-X-D	HDB26 male connector to DB25 female connector (DB25 is international standard DCE wire sequence) crossover cable
CBL-RS232-RCJ45/2DB25F-2m	RJ45 connector to 2 DB25 female connector (DB25 is international standard DCE wire sequence) crossover cable,2m
CBL-E1-DB9M/2RJ45-2.5m	DB9 male connector to 2 RJ45 120ohm balanced connector,2.5m
CBL-E1-DB9M/4BNCF-2.5m	DB9 male connector to BNC 75ohm unbalanced female connector,2.5m
CBL-VOICE-SCSI50M(40)/NC-3m	The voice adopt cable of SCSI50 Male connector to blank wire cable,3m, 8 EM interfaces per cable