RC3000E Multi Service Access Node

Datasheet

Raisecom's RC3000E is a compact and cost-effective with the ability to access 30 channels voice intelligent multi service access multiplexer. It can provide maximum 8E1 capacity for accessing and transminssion, and the crossconnect capacity is 512 ×512 64K .It provides full range of voice and digital data services to subscribers located at different locations require to interconnect and establish a voice and data network over E1 link.

The 19 inch 1U high RC3000E has capacity for 1 uplink slot and 3 downlink slots. It provides 8E1/4E1 electrical and 8E1 optical uplink cards, and a variety of services interface cards, including FXO, FXS, E&M, Hot-line, magneto telephone, RS232, RS422, RS485, G.703, V24, V35, FE. These interfaces are compatible with other Raisecom's products such as RC3000-15, OPCOM3500E (SDH), RC3000 , RC3101, and RC3201. So it is very flexible for grooming, concentration, broadcasting and cross connect as well as accessing diversified subscriber's business.

RC3000E can be managed by SNMP, Telnet and Console. Raisecom's network management platform NVIEW NNM is also available for figure information of the real-time monitoring, alarms, management and maintenance.

Chassis

RC3000E

Uplink Cards

RC3000E-UP-8E1

RC3000E-UP-4E1

RC3000E-UP-OPT-FE2E1

Downlink Cards

RC3000E-SUB-10FXO

RC3000E-SUB-10FXS

RC3000E-SUB-8EM

Specification

Item	
Chassis(high)	1U
Number of uplink-slots	1
Number of service-slots	3
Max. E1 channels	8
Cross-connect capactiy	512×512 64K
Max. FXO/FXS channels	30
Max. E&M channels	24
Max. V.35 channels	3
Max. FE channels	3
Physical Description	
Height	47mm(1.9 in.)
Width	483mm(19.0 in.)
Depth	360mm(14.2in.)
Power supply	DC:- 48V （-36V~-72V）
	AC:220V（100V~240V）
Power consumption	≤50W
Ringing generator	75V; 25Hz
Operating Environment	
Temperature	-5° to 50° C
Air pressure	86 to 106Kpa
Humidty	5% to 95% relative humidity, noncondensing

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Feature

- Conforms to Bellcore, IEEE and ITU standards
- Integrated with digit/analogue access, diplex, cross, transmission and protocol conversion functions
- Compact 1U high enclosure
- Modular construction with one uplink slot and three services slots
- Electrical and optical E1 uplink interfaces
- The E1 uplink card support E1 channel protect function
- Modularity and support hot swap
- Flexible network topologies : Point-to-Point , Linear Drop/Insert,Star
- Support 512×512 crossconnect ability base on 64K with signaling
- Local and remote loopbacks
- Support bert test function
- Multipoint (multidrop) voice and data interfaces

• Voice Interfaces:	FXO/S	Hot-line(FXS-FXS)
	2/4 Wire E&M	Magneto Telephone

• Data Interfaces:	- G.703 co-directional at 64Kbps Data Interfaces
	- V.24 Synchronous Data Interface up to 128 Kbps
	- RS232 Asynchronous Data Interface up to 19.2Kbps
	- RS422 Asynchronous Data Interface up to 19.2Kbps
	- RS485 Asynchronous Data Interface up to 19.2Kbps
	- V.35 Synchronous Data Interface N×64 Kbps (N=1~31)
	- 10/100 Base-T Ethernet Interface N×64 Kbps (N=1~31)

- Programmable A,B signaling bits (time slot 16; E1 systems) supports all voice switching equipment
- Support two clock mode : master and recovery
- Remote Configuration Control and Performance Monitoring (RC3000E, RC3000,RC3101)
- Support timeslot independently or SA4/SA5 as network management channle
- Provide SNMP and console network management interfaces
- SNMP agent for in-band and out-of-band network management using Raisecom's NNM View software

Downlink Cards

RC3000-SUB-D232

RC3000-SUB-D422

RC3000-SUB-D485

RC3000-SUB-DV35

RC3000-SUB-DETH

RC3000-SUB-DETH×2

RelaQtive Standards

ITU-T G.703	ITU-T G.704	ITU-T G.821	ITU-T G.823
ITU-T G.796	ITU-T G.707	ITU-T G.825	ITU-T G.826
ITU-T G.711	ITU-T G.712	ITU-T V.35	ITU-T V.11
ITU-T G.713	ITU-T G.714	ITU-T V.24	ITU-T V.28
ITU-T G.732	ITU-T G.813	IEEE 802.1	IEEE 802.3

Main Technical Performance

System Parameters

Supportable Channel Capacity:	Up to 240 channels at 64Kbit/s	Clock Frequency:	2048KHz±50ppm
Frame Structuer:	ITU-T Recommendation G.703	Clock Mode:	master, recovery
Performance Monitoring:	ITU-T Recommendation G.821	Management Interface:	console, SNMP

Channel Interfaces	Channels Per Board	Interface Types
E1 ports Board	4/8	E1 electrical port
FXO/FXS/Hotline Board	10	FXO, FXS, Hot-line
2/4 Wire E&M / Magneto Board	8	E&M, Magneto
Low Speed Data Board	4/8	G.703 co-directional at 64Kbps, V.24, RS232, RS422, RS485
High Speed Data Board	1	V.35, 10/100 Base-T Ethernet port

Electrical Interface: 2.048Mbit/s

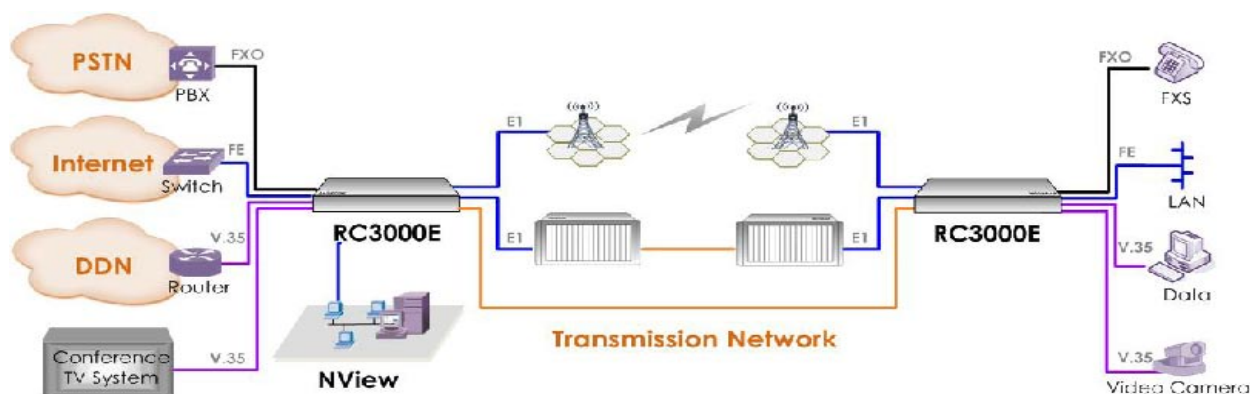| Bit rate:	2048KHz±50ppm	Code:	HDB3
Pulse Duration:	244±25 ns	Frame mode	PCM30/31
Pulse Mask:	ITU-T Recommendation G.703		
Impedance:	75Ω unbalanced or 120Ω balanced		
Nominal Peak Voltage Mark	75Ω: 2.37V 120Ω: 3.0V		
Intervene loss:	attenuation range is 0-6dB at 1024KHz		

Voice Interfaces

Companding Law:	A-Law	Channel Sampling Rate:	8KHz
Maximum Impedance of DC Circuit:	2000Ω	Overload Threshold:	+3.14 dBm0
Frequency:	300 to 3400Hz	Impedance:	600Ω balanced
Group delay:	< 300μs	Idle channel noise:	≤-67dB
Frequency character:	300 Hz - 400 Hz:-0.3~-0.1 dB	400 Hz -2 400 Hz:0.2~0.1 dB	2400 Hz -3400 Hz:0~-0.7 dB
Crosstalk :	-65 dBm0, 300 to 3400Hz	Ring current voltage:	25±3Hz,AC75±15V
Return Loss:	From 300 Hz to 600 Hz: > 12 dB	From 600 Hz to 3400 Hz: > 15 dB	
Total distortion	ITU-T Recommendation G.712	Variation of gain with input level	ITU-T Recommendation G.712
Attenuation/frequency distortion		ITU-T Recommendation G.712	

		Transmit Level		Receive Level
2-Wire channel	-3.5dBr±0.4dBr	-13dBm ~ +7dBm,adjustable	0dBr±0.4dBr	-3dBm~ +27dBm, adjustable
4-Wire channel	+4dBr±0.3dBr	-13dBm ~ +7dBm,adjustable	+14dBr±0.3dBr	-3dBm~+27dBm, adjustable

Data Interfaces

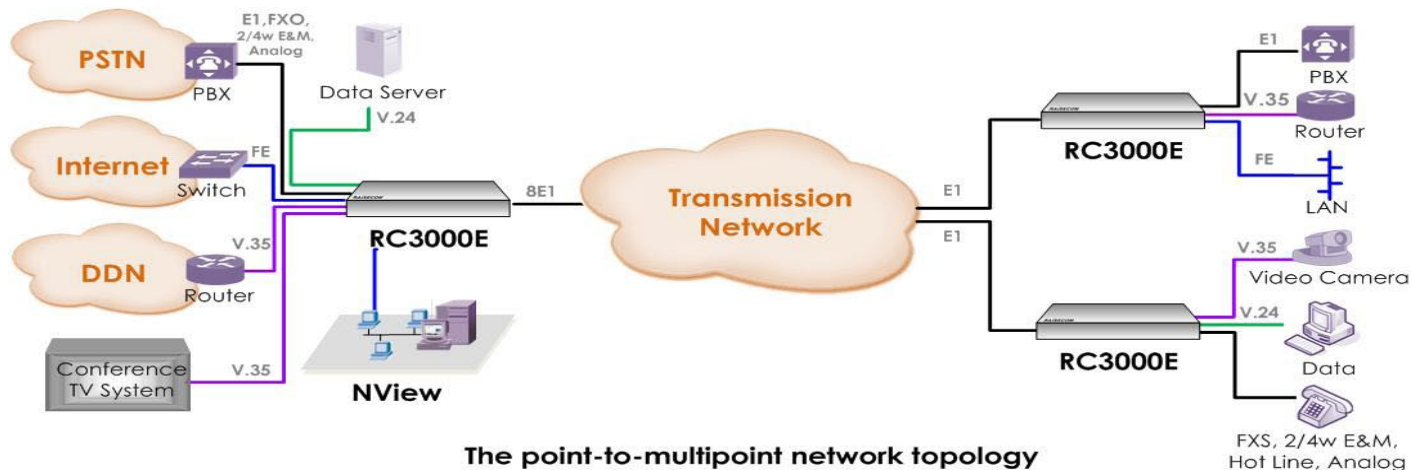| Data Type	Data Format	Bit rate	Characteristic
64Kbps Data Interface:	co-directional	64Kbps	ITU-T Recommendation G.703
V.24 Data Interface:	Synchronous	64 kbps ~ 128 Kbps	ITU-T Recommendation V.24
RS232 Data Interface:	Asynchronous	up tp 19.2Kbps	RS232 interface recommendation
RS422 Data Interface:	Asynchronous	up to 19.2Kbps	RS422 interface recommendation
RS485 Data Interface:	Asynchronous	up to 19.2Kbps	RS485 interface recommendation
V.35 Data Interface:	Synchronous	N×64Kbps, N=1~31	ITU-T Recommendation V.35
		N×64Kbps, N=1~31	IEEE 802.3 recommendation
Ethernet Data Interface:	Maximum frame length: 1912 byte rate Ethernet 10/100M Auto-Negotiation		
	Support IEEE 802.1d Spanning Tree transparent transmission		
	Support IEEE 802.1q VLAN transparent transmission		
	Support IEEE802.3x flow control at full duplex mode		
	support Auto-MDIX		

Typical Application

Point to Point Application

The point-to-point network topology

Point to Multi Point Application

The point-to-multipoint network topology

Ordering Information

RC3000E	RC3000E Multi Service Access Node chassis with with 1uplink slot and 3 downlink slots.
	RC3000E-XX XX represent the type of power supply RC3000E-AC/D : double AC power supply chassis RC3000E-DC/D : double DC power supply chassis RC3000E-AC/S : single AC power supply chassis RC3000E-DC/S : single DC power supply chassis RC3000E-AC_DC : mix one AC and one DC power supply chassis

Uplink module

RC3000E-UP-8E1	Electrical E1 interface uplink unit, it provides 8×E1 75ohm unbalanced interfaces one DB37 connector. Adapter cable:E1 cable (CBL-E1-DB37F/16BNC-2.5)
RC3000E-UP-4E1	Electrical E1 interface uplink unit, it provides 4×E1 75ohm unbalanced interfaces 8 CC3 connector. Adapter cable: E1 cable (CBL-E1-CC3/BNCF-1m / CBL-E1-CC3/BNCM-2.5M)
RC3000E-UP-4E1-BL	Electrical E1 interface uplink unit, it provides 4×E1 120ohm balanced interfaces 4 RJ45 connector.
RC3000E-UP-OPT-FE2E1	Optical interface uplink unit, it has one optical interface for uplink and one electrical E1 interface for downlink.The optical interface provides 8×E1 and 1 100Base-T Fast Ethernet, and the electrical interface provides 2×E1.

Downlink module

RC3000-SUB-10FXS	2-wire Foreign Exchange Subscriber (FXS) interface card, 10 interfaces per card, 3× RJ45 connectors.
RC3000-SUB-10FXO	2-wire Foreign Exchange Office(FXO) interface card, 10 interfaces per card, 3×RJ45 connectors.
RC3000-SUB-8EM	2/4 wire E&M trunk interface card, 8 interfaces per card, one SCIC female connector. Adapter cable : Voice cable (CBL-VOICE-SCSI50M(40)/NC-3m)
RC3000-SUB-DMT	Magneto Telephone interface card, it provides 8 magneto telephone channels per card, 2×RJ45 connectors.
RC3000-SUB-DC64K	Low speed 64Kbps Co-Directional G.703 data interface card, 4 interfaces per card, 2 ×RJ45 connectors.
RC3000-SUB-D232	Low speed RS232 asynchronous data interface card, 8 channels per card, up to 19.2Kbps, 4×RJ45 connectors.
RC3000-SUB-D422	Low speed RS422 asynchronous data interface card, 8 channels per card, up to 19.2Kbps, 4×RJ45 connectors.
RC3000-SUB-D485	Low speed RS485 asynchronous data interface card, 8 channels per card, up to 19.2Kbps, 4×RJ45 connectors.
RC3000-SUB-DV24	Low speed V.24 asynchronous data interface card, 4 channels per card, user selectable data rate N×64Kbps(N=1~2) up to 128Kbps, 4×RJ45 connectors.
RC3000-SUB-DV35	High speed V.35 synchronous data interface card, 1 channels per card, user selectable data rate N×64Kbps (N=1~31) DCE, one HDB26 female connector. Adapter cable: V.35 cable (CBL-V35-HDB26M/M34F)
RC3000-SUB-DETH	High speed Ethernet interface card, it provides 1 channel 10 Base-T Ethernet port, data rate: N×64Kbps (N=1~31), 1×RJ45 connector.
RC3000-SUB-DETHB	High speed Ethernet interface card, it provides 1 channels 10/100 Base-T Ethernet port, data rate: N×64Kbps (N=1~31), 1×RJ45 connector.

Ordering Information

Adapter Cable

CBL-E1-DB37F/16BNCM-2.5m	The E1 adapter cable of DB37 male connector to 16 BNC 75ohm unbalanced male connector with 2.5 meters, 8 ×E1 ports for one cable.
CBL-E1-CC3/BNCF-1m	The E1 adapter cable of CC3 female connector to BNC 75ohm unbalanced female connector with 1 meter, 2 cables per E1 port.
CBL-E1-CC3/BNCM-2.5M	The E1 adapter cable of CC3 female connector to BNC 75ohm unbalanced male connector with 2.5 meters, 2 cables per E1 port.
CBL-VOICE-SCSI50M(40)/NC-3m	The voice adapter cable of SCSI50 Male connector to blank wire cable,3m, 8 EM interfaces per cable
CBL-V35-HDB26M/M34F	The V.35 adapter cable of HDB26 male connector to DCE cable of M34 female connector, 2m