

**Technical Bid Document**  
(To be printed on vendor's company letter head)

To,  
Manager(Materials),  
Rajathan Drugs & Pharmaceuticals Ltd,  
(Govt of India Enterprise),  
Road No. 12, VKI Area,  
Jaipur.

Date:

Sub :- Submission of Technical Specification for Supplying ,testing and commissioning of Latest Digital EPBAX system against your tender enquiry No. **RDPL/IT/EPBAX/2013** dated.....

Dear Sir,

The technical specification required check list is as given below.

**Table 1: General Parameter**

Sno	Specification	Parameter	Complies Yes /No
1	OEM & Make Name	..... ( Required to filled by the vender)	<b>-NA-</b>
2	Model No.	..... ( Required to filled by the vender)	<b>-NA-</b>
3	Certification	Firm should be authorized channel partner/dealer of OEM ( <b>document should be attached</b> )	
4	Documentation required	Firm must be registered with Sale Tax, Income Tax these documents should be attached	

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**Table 2: BUILT-IN INTERFACES**

Sno	System Resources	Description	Minimum Capacity	Complies Yes/No
1	RS232C(COM )Port	To Connect to a Computer for SMDR/PMS/CAS Interfaces	2	
2	Analog Input Port(AIP)	To Connect External Music Source Device	1	
3	Analog Output Port(AOP)	For Public Address System	1	
4	Digital Input Port(DIP)	To Connect Sensor or Panic Switch	1	
5	Digital Output Port(DOP)	To Connect External Devices like Door Lock ,Contactor, Relay Port	1	
6	Ethernet Port	To Access Web Based Programming configuration, PMS,SMDR, System Log	1	
7	USB Port	Reserved for Future Application	1	
8	Voice Messages(16 Second Each)	To Configure as Auto Attendant ,Voice Help, Voice Tones	16	
9	Conference	Number of Conference Participants	15	

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**Table 3: INTERFACE & PORTS**

<b>Sno</b>	<b>System Resources</b>	<b>Description</b>	<b>Minimum Ports</b>	<b>Complies Yes/No</b>
1	Universal Slots	For Expansion Cards	6	
2	SLT Ports	To Connect Single Line Analog Telephones	120	
3	DKP/DSS Ports	To Connect Proprietary Digital Key Phones or DSS Consoles	48	
4	CO(TWT) Ports	To Connect Two Wire (CO) Lines	96	
5	E&M Ports	To Connect E&M Network	24	
6	GSM /3G Ports	To Connect to GSM /3G Network	24	
7	BRI Ports	To Connect to ISDN BRI Network or ISDN Compatible Devices	24	
8	T1/E1/PRI Ports	To Connect to T1 or E1 or PRI Network or Compatible Devices	6	
9	VoIP (Cards) Channels	VoIP Phones, Softphones, Mobile SIP Clients	6	
10	VoIP Users	Registrations of VoIP Phones, Softphones, Mobile SIP Clients	500	
11	VoIP Trunks	SIP Trunks(Clients) For ITSP or Peer -to -Peer	16	
12	VoIP Channels per Card	Simultaneous VoIP Calls per Card	16/32	
13	VoIP Calls	Simultaneous VoIP Call Participants	192	
14	Voice Mail System(Number of Ports)	Voice Mail System with Auto-Attendant and with dedicated mailbox for each type of extension(Analog, Digital, IP)	16	

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**Table 4: EPBAX TECHNICAL PARAMETER**

Sno	Technical Parameter		Complies Yes/No
<b>I</b>	<b>Technology</b>	<b>Description</b>	
	Type of Switching	PCM/TDM Digital Switching (100 Non Blocking)	
	Processor	32-bit RISC	
	Architecture	Distributed Processing	
	Slots	Universal	
<b>II</b>	<b>SLT (Analog Station)</b>	<b>Description</b>	<b>Complies Yes/No</b>
	Signaling	Loop start	
	Dialing	DTMF and pulse (10/20 PPS)	
	Off Hook AC Impedance	600/900 Complex	
	Off Hook Current	39mA-max	
	Loop Limit	1800 $\Omega$ Max(Excluding Telephone	
	On-Hook Voltage(Tip/Ring)	-48V nominal	
	DTMF Detection	ITU-T 0.24	
	Return Loss	>18dB	
	Longitudinal Balance	>50dB	
	Transmission Level Adjust	Tx Gain :-3dB to + 6dB, Rx Gain-3dB to =6dB	
	Ringling	Trapezoidal 60 VRMS/25Hz and Sinusoidal 52VRMS/25Hz	
	REN	3	
	CLI Presentation	DTMF, FSK ITU-T V.23 and FSK Bellcore 202	
	Protection	Over Voltage Secondary Protection	
	Physical Connector	RJ45	
<b>III</b>	<b>DKP (DIGITAL STATION)</b>	<b>Description</b>	<b>Complies Yes/No</b>
	Signaling	Proprietary Digital (2B+D)	

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	Interface	Single pair for Speech, Signaling and Power	
	Loop Limit	100 $\Omega$	
	Speech level	Adjustable Tx and Rx Gain for Handset and Hands-free	
	Protection	Over Voltage Secondary Protection	
	Physical Connector	RJ45	
<b>IV</b>	<b>CO(TWT -2-WIRE TRUNK)</b>	<b>Description</b>	<b>Complies Yes/No</b>
	Signaling	Loop Start	
	Loop Limit	1200 $\Omega$	
	Off Hook AC Impedance	600/900/Complex	
	Pulse Dialing	10/20 PPS	
	DTMF Dialing and Reception	ITU-T Q.23 & Q.24	
	Return Loss	>18dB	
	Longitudinal Balance	>50dB	
	Transmission level adjust	Tx Gain: -15dB to +10dB, Rx Gain: -15dB to +10dB	
	CLI Reception	DTMF, FSK ITU-T V.23 and FSK Bellcore 202	
	Call Maturity	Delay and Polarity Reversal	
	Protection	Over Voltage and Over Current Secondary Protection	
	Physical Connector	RJ45	
<b>V</b>	<b>ISDN BRI</b>	<b>Description</b>	
	Channels	2B+D	
	Personality	Network (NT) and Terminal (TE)	
	Switch Variant	AT&T 4ESS, DMS-100, ETSI NET3, ITU-T Q.921, ITU-T Q.931, NTT INS64, US Ni1(National ISDN 1), France Vnx	
	Protection	Solid State (Over Voltage and Over Current)	

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		Built-in Secondary Protection	
	Physical Connector	RJ45 (120 Ω)	
<b>VI</b>	<b>ISDN PRI</b>	<b>Description</b>	<b>Complies Yes/No</b>
	Channels	23B+D and 30B+D	
	Personality	Network (NT) and Terminal (TE)	
	Line Coding	AMI/B8ZS for T1 and HDB3 for E1	
	Framing	ESF for T1 and CEPT1 (with/without CRC) for E1	
	Switch Variant	AT&T 4ESS, AT&T 5ESS, DMS-100, ETSI NET5, ITU-T Q.921, ITU-T Q.931, NTT INS64, US NI2(National ISDN 2), QSIC ECMA, France VN	
	Protection	Solid State (Over Voltage and Over Current)Built-in Secondary Protection	
	Physical Connector	RJ45	
	Supplementary Services	QSIG ECMA	
<b>VII</b>	<b>E1 CAS</b>	<b>Description</b>	<b>Complies Yes/No</b>
	Bit Rate	2048 kbps +/- 50 ppm	
	Line Coding	HDB3	
	Framing	CEPT1 (with/without CRC) with CAS MF	
	Line Signaling	ITU-T Q.400 – Q.490	
	Register Signaling	MFC-R2	
	Alarms	I.431, G.732, ETSI 300-233	
	Protection	Solid State (Over Voltage and Over Current) built-in Secondary Protection	
	Physical Connector	RJ45 (120 Ω)	
<b>VIII</b>	<b>T1 RBS</b>	<b>Description</b>	
	Bit Rate	1544 kbps +/- 50 ppm	
	Line Coding	AMI and B8ZS	
	Line Signaling	FXS Loop Start, FXO Loop Start, FXS Ground Start, FXO Ground Start, E&M(Immediate, Wink Start, Wink Start FGD)	

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	Framing	D4, ESF	
	Digit Dialing	DTMF	
	Alarms	ANSI T1.231	
	Performance	ANSI T1.403, ANSI T1.231, AT&T TR54016	
	Physical Connector	RJ45 (120 $\Omega$ )	
	Protection	Solid State (Over Voltage and Over Current)built-in Secondary Protection	
<b>IX</b>	<b>GSM</b>	<b>Description</b>	<b>Complies Yes/No</b>
	GSM Band (MHz)	Quad-band: GSM850, EGSM900, DCS1800, PCS1900	
	Compliant	ETSI GSM Phase2/2+	
	SIM Card	One SIM per GSM Port	
	SIM Interface	1.8V, 3V	
	Transmission Power	Class 4 (2W) at GSM850 MHz and EGSM900 MHz band Class 1 (1W) at DCS1800 MHz and PCS1900 MHz band	
	RF Sensitivity	Better than -102dBm	
	Protocol	At Command Interface	
	External Antenna	One Antenna per 4 GSM Ports, 1.8/3.0 * dBi, 50 $\Omega$ SMA (Male) Connector, Omni Directional with Cable of 3 Meters Length	
<b>X</b>	<b>VoIP</b>	<b>Description</b>	<b>Complies Yes/No</b>
	VoIP Protocols	SIP v2, SDP, RTP, RFC 2833	
	Network Protocol	IPv4, TCP, UDP, SNTP,STUN,ARP,ICMP,PPP,DNS,SMTP	
	SIP	Maximum 32 SIP Accounts per System, Out Bound Proxy Support, Display Name, User Name, Password, URL, Proxy URL,Register URL, Register Interval	

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	NAT/Firewall Support	PPPoE	
	Voice Codecs	G.711 (A-Law, $\mu$ -Law), G.723, G.729AB, GSM-FR, iLBC	
	Line Echo Cancellation	G.168 with 64/128ms Tail Length	
	Call Progress Tones	Dial Tone, Ring Back Tone, Busy Tone, Error Tone	
	Voice	Dynamic Jitter Buffer (Adaptive), Comfort Noise Generation and Voice Activity Detection	
	Fax	T.38 and Pass Through	
	Data Network	Ethernet (RJ45) Port, Auto MDIX (10/100 BaseT)	
	Quality of Service	Layer 3 Diffserv and TOS	
	LED Indications	1-LED for System Status and 1-LED for Registrar Status	
<b>XI</b>	<b>E&amp;M</b>	<b>Description</b>	<b>Complies Yes/No</b>
	Type	Type IV and Type V	
	Signaling	Pulse 10 PPS, Pulse 20 PPS and DTMF	
	Signaling Protocol	Normal, Delay, Wink, CCS Signals	
	Speech Interface	2-Wire and 4-Wire	
<b>XII</b>	<b>AUXILIARY PORTS</b>	<b>Description</b>	<b>Complies Yes/No</b>
	Analog Input Port	0.7 Vrms, Isolated, Push-Type Connector	
	Analog Output Port	0.7 Vrms, Isolated, Push-Type Connector	
	Digital Input Port	Loop Sensing-Open/Close, 5 mA, Push-Type Connector	
	Digital Output Port	VDC Max = 60 VDC, IDC Max = 0.15 A, Push-Type Connector	
<b>XII</b>	<b>POWER SUPPLY</b>	<b>Description</b>	<b>Complies Yes/No</b>
	Input	Option 1 (Mains): 90-265 VAC, 47-63 Hz Option 2 (DC): 48 VDC +/- 20%	
<b>XIII</b>	<b>INSTALLATION</b>	Wall Mount, Table Top	



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<b>XIV</b>	<b>ENVIRONMENT</b>	<b>Description</b>	<b>Complies Yes/No</b>
	Operating Temperature	-10°C to +50°C (+14°F to +122°F)	
	Operating Humidity	5-95% RH, Non-Condensing	
	Storage Temperature	-40°C to +85°C (-40°F to +185°F)	
	Storage Humidity	0-95% RH, Non-Condensing	

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**Table 5: Technical Features**

Sr.No	Parameter	Complies Yes /No
1	Inbuilt auto attendant facility and able to answer minimum 5 calls simultaneously	
2	Minimum 15 participant's conference simultaneously	
3	System should support flexible numbering for extensions such as it may have extension with <ol style="list-style-type: none"> <li>1. One Digit extension no</li> <li>2. Two digits and up to 6(six) digits numbers as well as in combination of all.</li> </ol>	
4	Minimum 900 directories numbers possible and shall be able to dial by as an abbreviated numbers from any extension of the EPABX.	
5	System must have following features: <ul style="list-style-type: none"> <li>• Call Budget on Trunk</li> <li>• In-Skin GSM Connectivity</li> </ul>	
6	GUI based interface programming and configuration	
7	Warranty -1 Yr Parts ,1yrLabour and 1 yr onsite support	
8	Call detail generation for each extension number and Consolidated report generation that file should have printable format	
9	Documentation -Softcopy documentation of Hardware and OS features	

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**Table 6: Calling Features**

Sr. No	Features	Complies Yes /No
1	Welcome Message tone setup configuration	
2	Black List certain nos so they do not enter in the EPABX	
3	Feature to feed list of Holidays list to route the incoming calls on Holidays	
4	Feature to be able to transfer the personal extension on their remote extension or Mobile with some specific code	
5	Option to have soft phone on office PCs	
6	Speed Dialing feature for each extension separately	
7	Auto Transfer Mode to operator if respective number is not answered	
8	Option to block STD(Not allowed from internal Network)	
9	ISD block Facility	
10	Direct Dialing –In (DDI Routing)	
11	Call Forward Dial Plan(Multiple)	
12	Call Forking Emergency Number Dialing	
13	Call Pickup (Group and Selective) peer to peer	
14	Call Detail as per particular Number	
15	100 % non blocking abbreviated dialing	
16	Audio Level Adjustment	
17	Call transfer, Call back on busy extension /trunk	
18	Call Consult, Call parking ,call forwarding, call pick-up ,call privacy	
19	Day/Night Mode setting configuration	

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20	Music on Hold external Connectivity support	
21	Conference Call disconnecting settings ,call duration, warning tone	
22	Call Budgeting	
23	Do Not Disturb calling setting for particular extension	