SBX_2 Environmental, Safety and Specifications

Physical

Unit Dimensions:	44H x 444W x 330D mm (1.75H x 17.50W x 13.00D inches)
Rack Width:	19” (23” rack can be used if ordered with the 23” rack mounting bracket)
Rack Space:	1U
Shipping Dimensions:	127H x 558W x 381D mm (5H x 22W x 15D inches)
Unit Maximum Weight:	2.9 Kg (6.4 pounds)
Shipping Maximum Weight:	4.3 Kg (9.4 pounds)

Power and Thermal

Power Consumption:	21 Watts @ 120v / 18 Watts @ 240v
Heat Production:	20 Watts (160 BTU/hr) maximum

Environmental

Temperature:	0°C - 40°C (32°F - 104°F) Adequate cooling or heating must be provided to guarantee this range.
Dust:	Do not operate in conductive dust atmospheres (i.e. coal dust, metal dust, etc.). Do not operate in combustible dust atmospheres (i.e. saw dust, flour, etc.).
Humidity / Moisture:	Do not operate outdoors or in conditions where condensation forms.
Atmosphere:	Do not operate in explosive atmospheres (i.e. natural gas fumes, oil based paint fumes, etc.).

Digital Audio Core Specifications

Encoding / Decoding:	8 bit PCM / 8 kHz sampling / μ-law (no data compression)
Frequency Response:	200 - 3400 Hz (+/- 3 dB)
Channel Capacity:	8 analog ports, 2 audio out ports, 1 audio in port, 1 remote port, 1 handset

Port Specifications

Remote

Compatible with global PSTN (FCC / IC / ETSI ES 203 021-2 / ETSI ES 203 021-3)

- Ring detection feature
- DTMF detection feature
- Loop current direction detection feature

Connector:	RJ45
Impedance:	Configurable (FCC / IC / ETSI ES 203 021-2 / ETSI ES 203 021-3)
Input Level (AGC onset):	-30 dBm
Nominal Output Level:	-9 dBm
Loop current:	10 mA - 60 mA (limiting)
Off Hook Loop Voltage:	40VDC maximum

Modem

Compatible with global PSTN (FCC / IC / ETSI ES 203 021-2 / ETSI ES 203 021-3)

- 56Kbps (V.90), 33.6Kbps (V.34), 14.4Kbps (V.32) + other modes
- V.42 LAPM and MNP 2-4 error correction
- V.42bis and MNP 5 data compression

- Connector: RJ45

Alarm

Input:	Contact closure or applied DC voltage up to +/-60V
Outputs:	dry relay contacts (1 form “C” - NO/NC/COM)
Output contacts:	1.0 A @ 30V / 0.5A @ 60V (60V maximum)
Input current:	5 mA @ 60V (maximum)

Serial Port

RS-232 Transmit and Receive data (software flow control required)

Data Rate:	115 Kbps (maximum)
Connector:	DB-9 with standard pin-out
Input Impedance (typical):	5 KΩ
Input Voltage (low):	-15 V to +1.2 V
Input Voltage (high):	+1.5 V to +15 V
Output Voltage Swing (typical):	+/- 5.4 V into 3 KΩ
Protection (ESD):	+/- 15KV Human Body
	+/- 15KV IEC1000-4-2 Air Discharge

Network 1 Port

Type:	10/100BaseTX Ethernet IEEE 802.3 compliant
Connector:	RJ-45 connector with standard pin-out
Impedance:	100Ω / matched for Category 5 UTP cable
Protection:	1500 V RMS Hi-Pot 2000 W / 100 A 8/20µs pulse

Network 2 Port

Reserved for future applications, non operational

Analog Ports

Connector:	RJ45
Output Level:	-15 dBm / -9 dBm (high volume)
Impedance:	Configurable (FCC / IC / ETSI ES 203 021-2 / ETSI ES 203 021-3)
Loop current:	10 mA - 60 mA (limiting)
Off Hook Loop Voltage:	40VDC maximum
Control Relay Current:	100 mA maximum (60 VDC maximum)
Start Input (Voltage Sense):	10 mA at 48 VDC (60 VDC maximum)
Start Input (Contact Closure):	5 mA (maximum)
Ringer Equivalence Number (REN):	
	0.34

Music on Hold (MOH) Ports

Connectors:	RCA jacks
Input Impedance:	10 kΩ nominal
Input level (AGC onset):	-30 dBm (note: POTS / CO compatible)
Output Impedance:	600 Ω
Output Level (user configurable):	-15, -9, +9 dBm (600 Ω)

Important:
The SBX_2 unit must be installed in a location that meets all the requirements. The installation process consists of physical installation at the appropriate location, connecting the SBX_2 to its designated power supply, and checking system start up.

Caution:
Do not connect PSTN cables to the ALARM or NETWORK ports.

Caution:
Since the AC power cord is the disconnect for the SBX_2, ensure that the AC receptacle is near the unit.

Caution:
The installation of an SBX_2 unit should only be completed by a qualified telecommunications electronics technician. Interalia® cannot be held responsible for damage to parts or equipment caused by improper handling or installation.

Caution:
The cabling of the SBX_2 to the PBX should only be completed by a qualified telecommunication technician. Standard electrostatic discharge precautions must be followed when handling any internal components. Standard ESD handling precautions should be observed. Interalia cannot be held responsible for damage to parts or equipment caused by improper handling or installation.

SBX_2 Approvals

Safety Approvals

CAN/CSA-C22.2 No. 60950-00,3rd Edition	TELECOMMUNICATION EQUIPMENT – Safety Part 1: General Requirements
CAN/CSA-C22.2 No.60950-00, -3rd Edition/UL 60950, 3rd Edition, NRTL Program	TELECOMMUNICATION EQUIPMENT – Safety Part 1: General Requirements – To US Requirements
IEC 60950-1 2005/Am1:2009/Am2:2013	Information Technology Equipment – Safety Part 1: General Requirements
RoHS	Dir 2011/65/EU
WEEE	Dir 2012/19/EU

Telecom Approvals

TIA-968-B	Telecommunications, Telephone Terminal Equipment, Technical Requirements for Connection of Terminal Equipment to the Telephone Network
CS-03 Part I, issue 9, Amendment 4, Dec 2010	Requirements for terminal equipment and related access arrangements intended for direct connection to analogue wireline facilities.
ETSI ES 203 021-2 V2.1.2 (2006-01) ETSI ES 203 021-3 V2.1.2 (2006-01)	Harmonized basic attachment requirements for Terminals for connection to analogue interfaces of the Telephone Networks; Update of the technical contents of TBR 021, EN 301 437, TBR 015, TBR 017

Emissions Approvals

EN55022 / CISPR 22	Conducted Emissions 0.15 MHz – 30 MHz, Class A
EN55022 / CISPR 22	Radiated Emissions 30 MHz – 1 GHz, Class A
EN 55024 / EN 61000-3-2	Current Harmonics Emissions, Class A
EN 55024 / EN 61000-3-3	Voltage Fluctuations and Flicker Emissions
EN55024 / EN 61000-4-3	Radiated E-Field Immunity 80 MHz – 1 GHz, Class A
EN55024 / EN 61000-4-6	Conducted Immunity Voltage 150 kHz – 80 MHz, Class A
EN55024 / EN 61000-4-4	Electrical Fast Transients/Burst Immunity, Class B
EN55024 / EN61000-4-2	Electrostatic Discharge Immunity, Class B
EN55024 / EN 61000-4-5	Surge Immunity, Class B
EN55024 / EN 61000-4-11	Voltage Dips and Interrupts, Class B, C
EN55024 / EN61000-4-8	Power Frequency Magnetic Field Immunity, Class A

FCC Part 15 Subpart B / C-0103455-EM-1-1	
FCC Part 15.109 ICES-003 Issue 4 / ANSI C63.4 CAN/CSACEI/IEC CISPR 22:02	Radiated Emissions 30 MHz – 1 GHz
FCC Part 15.109 ICES-003 Issue 4 / ANSI C63.4 CAN/CSACEI/IEC CISPR 22:02	Conducted Emissions 150 kHz – 30 MHz
Industry Canada	
IC ID: 557A-SBXAP / 557ASBXAP	