



VSC

Voice and Signaling Converter

FEATURES

- Converts standard telephone set interface (FXS) to E&M interface
- Loop start / ground start telephone types
- 4-wire or 2-wire E&M interface
- Compatible with EIA RS-464 Types I, II and III, British Telecom SSDC5
- Selectable gain control
- Suitable for dial and touch-tone (DTMF) telephones
- Stand-alone unit (VSC) or rack-mount card (VSC/R)



DESCRIPTION

- VSC is a voice and signaling converter, enabling connection of voice equipment to data communications equipment. VSC converts the 2-wire/4-wire interface of the data equipment to the FXS interface of a telephone set, enabling direct connection of a telephone set to the voice interface of a time division multiplexer.
- VSC is available as either a stand-alone unit (VSC) or as a rack-mount card (VSC/R).
- VSC provides FXS loop start or ground start. The VSC/R provides FXS loop start only.
- VSC and VSC/R recognize the telephone pulses for on-hook, off-hook and dialing, translate the pulses into the proper signaling standard, and send the resulting signal over the "M" lead. When detecting activity on the "E" lead, VSC sends the ringing signal to the telephone and the ring back tone to the other side.

- The voice interface on the E&M side is switch-selectable for either 2-wire or 4-wire operation. The voice level to and from the telephone can be adjusted by means of a gain control in the range of +9 dB to -9 dB. (Gain control is not supported in the VSC/R.)
- The ring signal towards the telephone is modulated for approximately one second on, three seconds off, to simulate PABX operation.
- VSC has internal protection on the E&M lead to avoid damage in the event of improper operation.
- The VSC/R cards fit into the VSC-MN 19" card cage. The card cage includes a power supply and can carry up to 12 VSC/R cards in the AC option, or up to 14 cards in the DC option. The VSC/R cards can be mixed with the VSC-X/R (FXO) cards.

SPECIFICATIONS

E&M Types

EIA RS-464 Type I
 EIA RS-464 Type II
 EIA RS-464 Type III
 British Telecom SSSDC5
 Pulse distortion: less than 1 msec

E Detector Current Threshold

6 mA or more: active state
 2 mA or less: passive state

Gain Control

4-wire:
 Transmit: +9 dB to -9 dB
 Receive: +9 dB to -9 dB
 2-wire:
 Tx gain + Rx gain \leq -6 dB

Ringer

VSC: 60 VRMS ($\pm 10\%$)
 with 1 REN load
 VSC/R: 70 VRMS ($\pm 10\%$)
 with 1 REN load
 (1 k Ω resistor in series with 2.2 μ F capacitor), overload protected
 22 Hz ($\pm 10\%$); 1 second ON,
 3 seconds OFF

Ring Back

400 Hz, 0 dBm
 (when Tx gain = 0 dB)

Voice Transmission, Phone & PABX Interface

Transformer isolation between the two voice interfaces (1500 VRMS),
 600 Ω nominal impedance
 Return Loss (300 to 3400 Hz):
 VSC: Better than 20 dB
 VSC/R: Better than 17 dB
 Frequency response
 (reference 1004 Hz):
 VSC: ± 0.5 dB to 3400 Hz
 VSC/R: ± 1 dB (300 to 3400 Hz)

On Hook/Off Hook Threshold

VSC:
 40 V-48 V between TIP and RING for on hook state
 3 V-38 V between TIP and RING for off hook state
 25 mA ($\pm 10\%$) for current feed

VSC/R:
 30 V-36 V between TIP and RING for on hook state
 3 V-20 V between TIP and RING for off hook state
 34 mA feed current at 100 Ω loop resistance
 27 mA feed current at 750 Ω loop resistance

Indicators

Power: On when unit is powered (green)
 Local Off-Hook: On when local phone is off hook (yellow)
 Remote Calling: On when remote subscriber initiates a call (yellow)

Power

100, 115 or 230 VAC (-15% to +10%) 47-63 Hz, 12 VA;
 36-72 VDC

Physical (VSC)

Height: 4.0 cm / 1.7 in
 Width: 19.3 cm / 7.6 in
 Depth: 24.0 cm / 9.6 in
 Weight: 1.5 kg / 3.5 lb

Environment

Temperature: 0-50°C/32-122°F
 Humidity: Up to 90%, non-condensing

ORDERING

VSC/*

Voice and Signaling Converter, stand-alone unit with internal power supply

VSC/R

Voice Signaling Converter, card for VSC-MN 19" card cage

VSC-MN/*

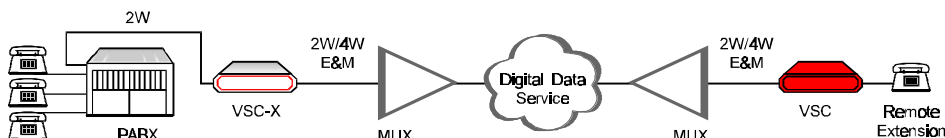
19" card cage for up to 12/14 VSC/R cards. Power supply included

* Specify power supply:

230 for 230 VAC
115 for 115 VAC
100 for 100 VAC
48 for -48 VDC

Specifications are subject to change without prior notice.

APPLICATION



RAD

data communications

U.S. EAST:
 900 Corporate Drive
 Mahwah, NJ 07430
 Tel: (201) 529-1100
 Fax: (201) 529-5777

U.S. WEST:
 7711 Center Avenue #350
 Huntington Beach, CA 92647
 Tel: (714) 897-2448
 Fax: (714) 891-1764

INTERNATIONAL HEADQUARTERS:

12 Hanachoshet Street
 Tel-Aviv 69710, Israel
 Tel: (972) 3-6458181
 Telex: 371263 RADCO IL
 Fax: (972) 3-6498250, 6474436

290-101-04/97