enhanced line powered amplifier with automatic balance

TurboAmp
MODEL SB21-K2

Features

- Automatic Gain / Equalization Alignment

- Stored Gain Settings

- "OFF HOOK" Indicator

- Input Impedance Switch Selectable to "TRUNK" (600 Ω/PBX/MODEM) or "PHONE"

- Equalizes up to 9 dB (at 1 kHz) of 26 ga to 22 ga loaded or non-loaded cable

- Automatic Level Control (ALC)

- -40 to +70°C Operating Temperature Range

Description

The Model SB21-K2 is Wilcom's newest member of the TurboAmp™ Family of enhanced line powered amplifiers. This very small repeater, which installs in a network interface device at the customer site, compensates for 2-wire POTS and special service circuits. It is estimated that 500,000 new 2-wire special service lines are installed each year in the U.S. The SB21-K2 lowers the cost of provisioning these circuits and improves their performance. On most loops, the SB21-K2 will also improve modem and fax performance. Additionally, POTS lines will have better voice performance if an SB21-K2 is used.

At its core the SB21-K2 is an electronic hybrid voice-frequency repeater. Enhanced features include automatic gain/equalization on both the cable and equipment ports, automatic balance on the cable side, and selectable fixed impedances on the equipment side.

The SB21-K2 is applicable for 2-wire POTS and most special service circuits requiring transmission treat-

ment, including Centrex, PBX-CO trunks, WATS lines, and analog data lines. It passes Caller ID signals and it is compatible with custom calling services and Mechanized Loop Testing (MLT) systems.
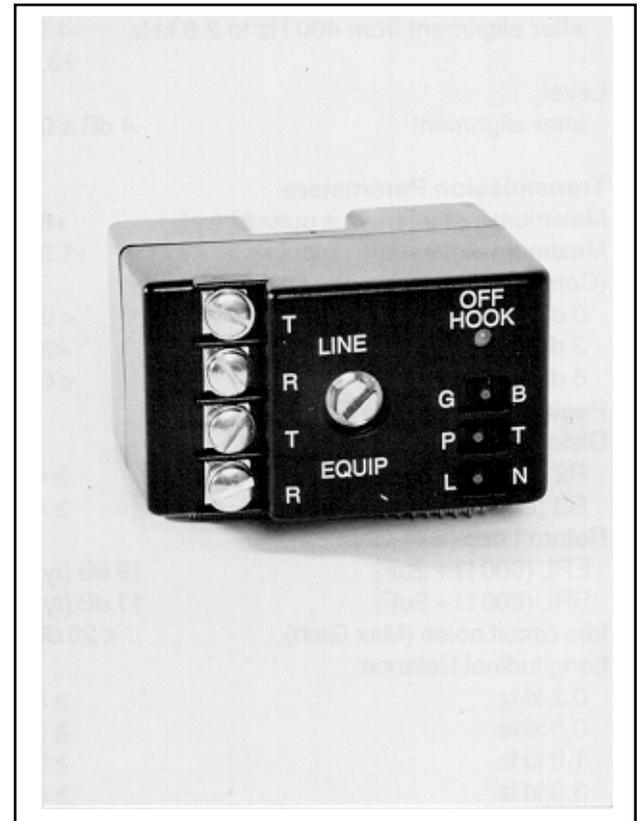
The SB21-K2 is particularly well suited for improving high speed modem (V.34) performance. By reducing Echo Return Loss found on poor quality telephone lines, high speed data transmissions are significantly improved.

By using state-of-the-art application specific integrated circuit (ASIC) technology in its design, the SB21-K2 measures just 2.0" x 2.5" x 1.5" (HWD), The unit's compact size makes it small enough to be mounted in a Network Interface Box, such as the KEPTEL™ SNI-4600 or TII™ 3500 BNIB. The SB21-K2 can also be used with one of Wilcom's TurboAmp Mounting Brackets (e.g. MM1, MM3, MM4, MM5). The SB21-K2's simple design allows for ease in installation and setup, reducing both time and labor costs.

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Specifications

Gain/Equalization Parameters

Maximum 1 kHz cable Loss 9 dB (15 kft. max, 26 ga)
(18 kft. max, 22, 24 ga)
(6 kft. max bridge tap)

Slope Loss relative to 1 kHz
   after alignment from 400 Hz to 2.8 kHz   -1.0 dB/
        ±3.0 dB

Level
  after alignment   -4 dB ± 0.5 dB

Transmission Parameters

Maximum instantaneous output level	+6 dBm
Maximum continuous output level	+1.5 dBm
(Compression Automatic Level Control)	
0 dBm output	< 0.1 dB
3 dBm output	<3.0 dB
6 dBm output	< 5.0 dB
Peak-to-Average (P/AR)	97
Distortion (non-linear 4-tone):	
R2 (second)	43 dB
R3 (third)	44 dB
Return Loss (with Gain)	
ERL (600 + 2uF)	19 dB (typical)
SRL (600 + 2uF)	11 dB (typical)
Idle circuit noise (Max Gain)	20 dBrnC
Longitudinal Balance:	
0.2 kHz	58 dB
0.5 kHz	58 dB
1.0 kHz	58 dB
3.0 kHz	58 dB
Crosstalk (between adjacent units)	75 dB
Lightning immunity	10/1000 µs
	200 A, 1000 V
Power Cross	meets requirements in
	Bellcore Publication TR-TSY-000007

Power

Required Current	15 mA min
Power Dissipation	70 mW (typical)
DC Resistance	40 (typical)

Environment

Temperature @ (5 to 95% humidity)

Operating	-40°C to +70°C
Storage	-40°C to +70°C

Physical

Dimensions (HWD)	2.0 in. x 2.5 in. x 1.5 in.
Weight	3.6 oz.
Mounting	mounts in a

KEPTEL SNI-4600 or TII 3500
Network Interface Box, or with one of
Wilcom's TurboAmp Mountings

Certification

FCC Part 68 Registered
UL and CUL Listed

Patent Numbers:	4,961,218
	5,504,811

Warranty

The Wilcom SB21-K2 is warranted against failure for a period of five years if normal usage is observed.

Ordering Information

Basic:

Product	CLEI Code	Part Number
SB21-K2	VRA1AAAAAA	30211004

TurboAmp Mountings:

Product		Part Number
MM1A	Hanger Screw (Box of 50)	20028229
MM1B	4600 Mounting Stud (Box of 50)	20028448
MM3	Multi-Unit Mounting Bracket	20028346
MM4	Multi-Unit Mounting Bracket	20028451
MM5	Multi-Unit Mounting Bracket	20028178

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