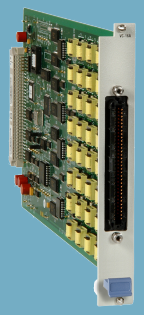
Data Sheet



Megaplex-2100/2104

VC-16A

16-Channel ADPCM Voice Module (No Signaling)

- No-signaling voice compression module for MP-2100/MP-2104 chassis
- 32-kbps ADPCM or 62-kbps PCM compression
- Up to 160 ADPCM voice channels
- A-law or μ-law companding
- Fits into any I/O slot of the MP-2100/2104 chassis

VC-16A is a user-programmable voice interface module for the Megaplex-2100 and Megaplex-2104 modular E1/T1 multiplexer systems.

The VC-16A module provides 16 voice channels using one of two user-selectable voice encoding modes:

- Toll-quality 64-kbps PCM voice compression in compliance with ITU-T Rec. G.711 and AT&T Pub. 43801
- Toll-quality 32-kbps ADPCM voice compression in compliance with ITU-T Rec. G.726.

VC-16A is designed for applications requiring high bandwidth utilization with no inband signaling. It processes only the voice and does not transmit any channel associated signaling information. For E1 links, this results in an additional timeslot free for carrying voice and thus 31 PCM (or 62 ADPCM) channels can be transported rather than the conventional 30 (or 60 ADPCM).

For flexibility, any channel can be independently routed to a different main link.

Eight VC-16A modules can be installed in a single Megaplex-2100 chassis, to support a maximum of 124 PCM voice channels using four E1 links. Using ADPCM compression mode, a single Megaplex-2100 chassis equipped with ten VC-16A modules, can support up to 160 channels using three E1 or four T1 links.

For a T1 Megaplex-2100 system, a single chassis equipped with six VC-16A modules can support a maximum of 96 PCM channels using four T1 links. Using ADPCM compression mode, a single chassis equipped with nine VC-16A modules can support a maximum of 144 channels using three T1 links.

The compact Megaplex-2104 chassis transports up to 62 channels using PCM, in a dual-link E1 system. When ADPCM compression is used, a single-link E1 system is enough to transport the same number of channels. For a dual-link T1 system, the maximum number of channels is 48 using PCM, or 64 using ADPCM.

On the physical level, the interface is similar to the E&M standard, but without signaling. The analog interface is user-selectable for either 2-wire or 4-wire. The interface type is independently selected per channel.

The companding law, μ-law or A-law, is also user-selectable in accordance with system requirements. To increase application flexibility, the nominal audio transmit and receive levels of each channel can be individually adjusted over a wide range.

All 16 channels are terminated in a single 64-pin TELCO connector. RAD offers an adapter cable, CBL-VC16A, terminated in 16 x RJ-45 male connectors, for direct connection to user equipment.

Data Sheet

VC-16A

16-Channel ADPCM Voice Module (No Signaling)

Specifications

Number of Voice Channels
16

Voice Encoding Technique
PCM: per ITU-T G.711 and AT&T PUB-43801, μ-law or A-law

ADPCM: per ITU-T G.726, μ-law or A-law

Bandwidth Requirement
PCM: 64 kbps (one timeslot) per enabled channel

ADPCM: 32 kbps (1/2 timeslot) per enabled channel

Line Type
4-wire or 2-wire (soft-selectable)

Connector
Single 64-pin Telco, female (for all channels)

Analog Parameters
ITU-T standards: G.712, G.714
Nominal level: 0 dBm
Nominal impedance: 600Ω
Return loss (ERL) at 300 to 3400 Hz: better than 20 dB
Frequency response (Ref:1020 Hz):

- ±0.5 dB at 300 to 3000 Hz
- ±1.1 dB at 250 to 3400 Hz

Level adjustment (soft-selectable):

- TX: +5 to -10 dBm
- RX: +2 to -17 dBm

Steps: 0.5 dB (±0.15 dB), nominal

Signal to total distortion (G.712, G.713 Method 2):

- -30 to 0 dBm0: better than 33 dB
- -45 to +3 dBm0: better than 22 dB

Idle channel noise: better than -70 dBm0 (+20 dBrnc)
Transformer isolation: 1500 VRMS

Diagnostics
Local digital loopback per channel, towards the local user equipment

Remote analog loopback per channel, towards the remote user equipment

1 kHz, 0 dBm0 test tone inject per channel, towards the remote user equipment

1 kHz, 0 dBm0 backward test tone inject per channel, towards the local user equipment

Power Consumption
1.85W

Ordering

RECOMMENDED CONFIGURATIONS

MP2100M-VC-16A

16-Channel ADPCM Voice Module (No Signaling)

OPTIONAL ACCESSORIES

CBL-VC16A/RJ-45
Cable for splitting the VC-16A single 64-pin Telco connector into 16 x RJ-45 connectors

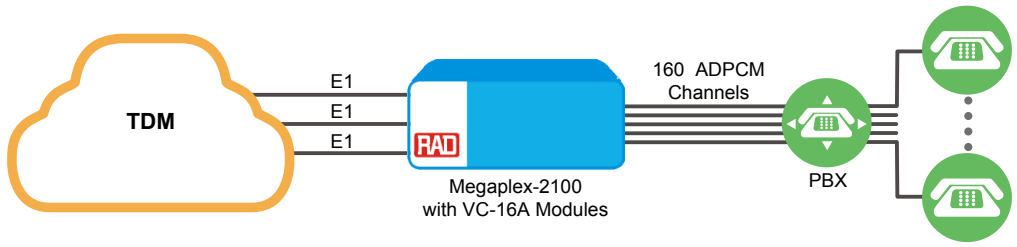


Figure 1. VC-16A Modules Transporting 160 ADPCM Channels over 3 E1 Links

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