



VOICE QUALITY ENHANCEMENT DEVICE

Model No: ATVQD – 128 E1

VQED

Mobile Subscribers increasingly expect better reliability and performance of Mobile Voice services as they expand their applications to more sophisticated mobile content services. In order to secure existing customers, service providers must verify the availability, reliability and quality of their Mobile Voice service offerings, which means that speech quality and various calling features must be continuously to ensure they are stable. Voice Quality Enhancement product ATVQD offers superior voice quality and services at the level of Mobile Subscriber's expectations.

Key Benefits

- Support 128E1 per 2U sub-rack/shelf
- Bidirection Noise cancellation
- Bidirection Level Control.
- Bidirection Hybrid Echo cancellation
- Bidirection Acoustic Echo cancellation
- Full redundant Solution through Metallic bypass relays for each E1
- Optional Card Redundant.
- Signaling: CAS , CCS.
- Supports: Tandem Free Operation (TFO) and High Speed Circuit Switched Data (HSCSD)
- Transpency : DTMF, GSM TFO(ETSI 101 504, 3GPP TS 28.062),
- GSM HSCSD (3GPP TS 48.020) and 3G Streaming Transparency (ITUH.324).

Solutions

For a mobile operator or a wireless data services provider, network backhaul is a transparent but critical function in the delivery of communication services to the end user. Often, this infrastructure component relies on T1/E1 leased lines and while backhaul costs can reach nearly 30% of operating expenses, options that are more reliable and cost-competitive are often overlooked.

We provide the following solutions:

- Abis Optimization Solution
- DCME Solution
- Voice Quality Improvement Solution in Mobile networks.

Voice Quality Enhancement Features Benefits

- **INCREASE ARPU** : Better voice quality encourages subscribers to make more calls and talk longer and longer, and that means more revenue as soonest possible.
- **AVOID CHURN FACTOR** : The quality of voice service can be directly linked to increased existing customer satisfaction.

NOTE : The specifications can be changed without notice due to technological advances.



INNOVATION COMMUNICATIONS SYSTEMS LTD

(an ISO 9001-2008 company)

8-3-898/30/2, Road No: 3, Nagarjuna Nagar Colony, Ameerpet, Hyderabad - 500 073, Andhra Pradesh, India

Your IT Partner

Tel: +91- 40 - 23752790, 23730083

Fax: + 91- 40 - 23752788

www.icsglobal.biz

info@icsglobal.biz



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- **HELP TO CREATE BIGGER BRAND IMAGE** : Crystal clear voice quality kind of service translates into greater market Brand as existing subscribers spread the word to new potential customers and Offer your subscribers what they demand and expect.
- **HELP TO ALL NETWORK ELEMENT'S ROI** : It's fast and easy to improve voice quality, and it's an inexpensive way to realize immediate returns not only for our products but its help to other elements as well due to factor of increasing ARPU and adding new subscriber in shorter time duration.
- **LOWER INVESTMENTS**: Voice Quality Enhancement Device (ATVQD-128 E1) with Voice quality Enhancement have low operational costs because of their small foot print, low power consumption and high reliability.

Voice Quality Enhancement Features

- **NOISE CANCELLATION** : Actively cancels the ambient background noise emanating from wireless handsets while preserving the natural sound of the speaker's voice.
- **VOICE LEVEL CONTROL** : Detects voice levels that are too high or too low and automatically adjusts the signal to a user-selectable range.
- **ADAPTIVE GAIN** : Adjusts gain to wireless handset to produce comfortable listening in the presence of background noise (in noisy environments like Railway Station, Stock Market, Stadium, etc.).
- **ACOUSTIC ECHO CANCELLATION** : Advanced voice processing algorithm designed to detect background acoustic echo generated in the handset of the mobile user and gradually attenuate the signal rendering acoustic echo inaudible. Acoustic Echo Cancellation is a programmable feature, enabling the service provider to reduce acoustic echo as required.
- **HYBRID ECHO CANCELLATION** : Quick and very stable hybrid echo cancellation performance across a wide range of environmental (like different countries routing conditions) including clean speech, unbalanced speech levels, and tandem echo canceller and doubletalk situations from the very start of a call,during a call transfer and wireless hand-over, and after abrupt changes in International or Domestic network routing.

ATVQD Credentials

- | | | |
|------------------------------|---|--|
| • Noise Cancellation | : | User selectable Mode
6dB, 9dB, 12dB, 15dB, 18dB, 21dB |
| • Voice Level Control | : | Target level: -3 dB to -12 dB |
| • Acoustic Echo Cancellation | : | User selectable Mode
15dB, 18dB, 27dB, 30dB, 33dB, 36 dB,
39 dB, 42dB, 45dB Or 0-400ms |
| • Hybrid Echo Cancellation | : | User selectable Mode
24ms, 32ms, 48ms, 64 ms, 96ms, 128ms,
160ms and 192ms |
| • Residual Echo Control | : | User selectable Mode
Out, NLP, with Noise Match. |

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Technical Specifications

- Interfaces
 - : TRAU/MSC interface acquiescent with “A” interface GSM standards
- Carrier Shelf
 - High Density
 - : Adaptive up to 350 msec
 - : Maximum per shelf 128 E1 with Metallic Bypass relays.
 - Low Density
 - : Maximum per shelf 64 E1 with Metallic Bypass relays and Card Redundancy.
- Power
 - : AC power input (Optional)
 - Max power supply consumption: 100Watts
 - DC power input: : -42 to -60 VDC
- Compliances
 - Transparency
 - : ITU G.160, G.164, G.165, G.168-2002, G.169
 - : DTMF GSM TFO, GSM HSCSD, ITU H.324
- Dimensions
 - : 2U Chassis
 - H x W x D: 60mm x 100mm x 200mm
- Network Interface
 - Line Rate
 - : CEPT2.048Mbps
 - 30/31 channel modes
 - Framing Formats
 - : ITU-T G.704: CAS or CAS +CRC-4
- Encoding
 - : HDB3 per ITU-T G.703,G.704
 - PCM Encoding: A-law per ITU-T G.711
- Jitter Tolerance
 - : Per ITU-T G.823
- Signaling
 - : CAS, CCS
- Line Impedance
 - : 120
 - 75 (Optional)
- Redundancy
 - : Metallic bypass for Each E1
 - Card redundancy (Optional)
 - Power supply redundancy and Full system redundancy (Optional)
 - Availability Target: 99.999% (Redundant Module)- Optional

Cost Effective Solutions

For a mobile operator or a wireless data services provider network backhaul is a transparent but critical function in the delivery of communication services to the end user. Often, this infrastructure component relies on T1/E1 leased lines, and while backhaul costs can reach nearly 30% of operating expenses, options that are more reliable and cost-competitive are often overlooked. We understand that telecom operators need systems that meet their specific requirements at strategic as well as at operational levels.

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