



# Lantiq™ VINETIC™-xT

## Next Generation Voice Access Solution

### Main Features

- Fully compliant with all world-wide analog telephony standards (e.g. ITU-T Q.552, Telcordia GR-57-CORE, ...)
- Software programmable to worldwide analog characteristics (AC, DC, ringing)
- PCM interface G.711 A-law/ $\mu$ -law or 16-bit linear
- Full wideband support
- Integrated and external ringing support
- On-hook transmission
- Caller-ID type I - III transmission support
- Integrated DTMF generator and receiver
- Teletax metering up to 5 V<sub>RMS</sub>
- Universal tone detector
- Howler tone generation (high amplitude)
- DC and AC Ring Trip detection
- Fast Ring Trip detection
- Ringing with DC offset
- Loop start signaling
- Ground start signaling
- Ground key indication
- Polarity reversal (hard/soft)
- Message waiting
- Integrated Test and Diagnostic Function, replacing MELT test heads
- Board production tests

### Interfaces

- SPI, PCM, GPIO

The Lantiq™ VINETIC™-xT family is the latest addition to Lantiq's mature and field-proven Voice product line. This family of pin- and software-compatible devices has been developed to address next-generation high-density Voice linecards, as well as small PBX and MDU designs.

The VINETIC™-xT family is based on a 4-, 8- and 16-channel CODEC/SLIC™ architecture. A slim digital SLIC™ interface (3 pins for 2 channels) simplifies the circuit board layout while optimizing component density.

Combining a VINETIC™-xT16 with Lantiq's two-channel Smart SLIC™ can reduce the overall bill of materials by up to 40% and can shrink the line interface unit footprint by up to 30% when compared to current solutions on the market.

The VINETIC™-xT family of products fully supports wideband voice (16 kHz sampling and wideband analog filters). It is 100% compatible with legacy POTS equipment and services, and offers advanced integrated line testing with test head (MLT) accuracy.

The unique architecture of the VINETIC™-xT family enables customers to minimize their development time, reduce their bill of materials and create products that are seamlessly scalable and upgradable at minimal cost.

### Applications

- Access Networks, Central Office, DLC, DSLAMs, WLL
- FTTx (MxU/SxU), (IP)-PBX, Voice and IVD linecards

### Product Highlights

- 4/8/16 ch. Codec/SLIC™ architecture offers highest density at low cost
- 3-pin digital SLIC™ interface simplifies PCB design
- Full wideband support (16-bit/16 kHz)
- On-chip integrated line testing with test head accuracy (no external line test processor)
- 100% compatibility with legacy POTS equipment and services
- Integrated ringing (100 V<sub>RMS</sub>)
- Extended automatic modes to reduce processor load (caller-ID, pulse dialing, ringing, ground start etc.)
- Tone generators (2 per channel), DTMF sender and detection, caller-ID
- Robust design complying with severe EMC requirements (10 V conduct immunity)
- External, unbalanced ringing support

### Design-In & System Package

- Data sheets, hardware design guide (including reference schematics and LOM), user's manual system description, user's manual programmer's reference
- 16 channels evaluation board including board support package
- WinEASY software for fast hardware bring-up
- High-level API software package (TAPI)
- Coefficient calculation tool (XTCOS)

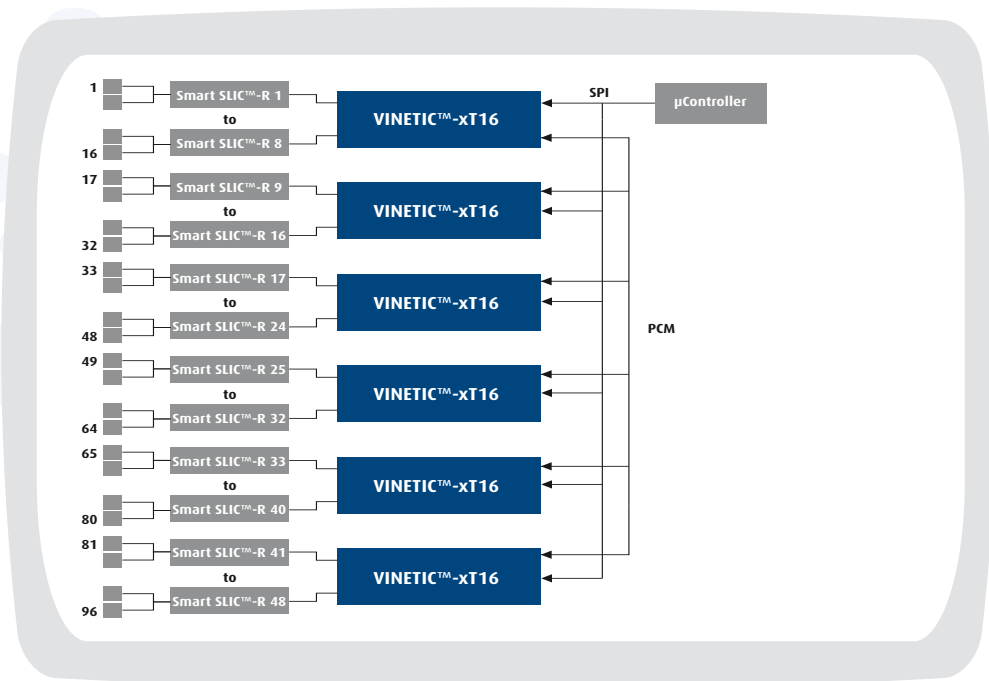
# Lantiq™ VINETIC™-xT

## Next Generation Voice Access Solution

### Fully flexible, scalable & upgradable

- One Voice/VoIP system concept for all access technologies (POTS, IVD)
- 4-, 8- and 16-channel CODEC/SLIC™ architecture with slim digital SLIC™ interfaces for optimized density (6-layer design, 96 channels)
- Full wideband support

### VINETIC™-xT Application Diagram



### Product Summary

| Sales Code  | PEF 33016                        | PEF 33008    | PEF 33004    |
|---|----------------------------------|--------------|--------------|
| Product name  | VINETIC™-xT16                    | VINETIC™-xT8 | VINETIC™-xT4 |
| Package   | PG-LQFP-100                      |              |              |
| Analog channels   | 16                               | 8            | 4            |
| PCM interface   | 2                                |              |              |
| A-law/μ-law/16-bit linear                               | yes/yes/yes                      |              |              |
| CID on/off-hook state machine                           | yes                              |              |              |
| Hook state machine                                      | yes                              |              |              |
| Tone generation   | yes                              |              |              |
| DTMF generator/detector                                 | yes                              |              |              |
| Howler tone generation                                  | yes                              |              |              |
| Message Waiting   | yes                              |              |              |
| Supply voltages   | 1.5/3.3 V                        |              |              |
| Meets all relevant worldwide legacy POTS specifications | yes                              |              |              |
| Metering 12/16 kHz                                      | 5 V <sub>RMS</sub>               |              |              |
| Wideband support  | yes                              |              |              |
| Integrated line testing                                 | CO-grade with test head accuracy |              |              |

| Sales Code                       | PEF 42065             | PEF 42065-2         | PEF 42066             | PEF 42066-2         | PEF 42064           |
|----------------------------------|-----------------------|---------------------|-----------------------|---------------------|---------------------|
| Product name                     | Smart SLIC™-R         | Smart SLIC™-R2      | Smart SLIC™-P         | Smart SLIC™-P2      | Smart SLIC™-S       |
| Package                          | PG-LQFP-64            |                     |                       |                     |                     |
|                                  | pin-to-pin compatible |                     | pin-to-pin compatible |                     |                     |
| DC feeding                       | 50 mA                 | 50 mA               | 50 mA                 | 50 mA               | 50 mA               |
| Maximum battery supply           | +/- 85 V              | +/- 85 V            | -150 V                | -150 V              | -125 V              |
| Balanced ringing                 | 85 V <sub>RMS</sub>   | 85 V <sub>RMS</sub> | 85 V <sub>RMS</sub>   | 85 V <sub>RMS</sub> | 70 V <sub>RMS</sub> |
| Unbalanced ringing               | internal/external     | internal/external   | internal/external     | internal/external   | internal            |
| External ringing support         | yes                   | yes                 | yes                   | yes                 | no                  |
| Longitudinal balance             | 53 dB                 | 60 dB               | 53 dB                 | 60 dB               | 53 dB               |
| On-hook transmission             | yes                   | yes                 | yes                   | yes                 | yes                 |
| Battery rails (negativ/positive) | 2(+1ext)/1            | 2(+1ext)/1          | 3(+1ext)/0            | 3(+1ext)/0          | 2+1on-hook/0        |
| Supply voltages                  | 1.5/ 3.3 V            | 1.5/ 3.3 V          | 1.5/ 3.3 V            | 1.5/ 3.3 V          | 1.5/ 3.3 V          |
| Make & break dial-tone test      | yes                   | yes                 | yes                   | yes                 | no                  |
| Stand-by low power mode          | yes                   | yes                 | yes                   | yes                 | yes                 |
| Wideband support                 | yes                   | yes                 | yes                   | yes                 | yes                 |
| DST friendly                     | yes                   | yes                 | yes                   | yes                 | yes                 |
| Integrated line testing          | yes                   | yes                 | yes                   | yes                 | yes                 |



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