PRODUCT SUMMARY

SKYA21055 Automotive Multimode Multiband Power Amplifier Module for Quad-Band GSM, LTE, LTE-A (Downlink Carrier Aggregation Applications)

Applications
- Quad-band cellular Telematics Modems:
  - Class 4 GSM850 / EGSM900
  - Class 1 DCS1800 / PCS1900
  - Class E2 GSM850 / EGSM900 / DCS1800 / PCS1900
  - Class 12 multi-slot EGPRS
- Multiband 3G telematics modems
- LTE, LTE-A telematics modems for Bands 1, 25, 3, 4, 34/39, 26, 8, 20, 12, 13, 28
- CDMA modulated telematics modems for Bands BC0, BC1, BC6 and BC10

Features
- Separate single-ended GSM and WCDMA inputs and outputs
- CMOS-compatible, two-wire MIPI logic inputs (SCLK, SDATA)
- VCC stages for 2.5G can attach to battery or buck DC/DC
- Small, low profile package:
  - 7 mm x 5 mm x 0.8 mm
  - 42-pad configuration

2.5G FEATURES:
- EGPRS Class 12 multi-slot operation
- Four RF Pout control levels using RFFE interface
- Linear PA with bias optimization for efficiency/linearity tradeoff in 8-PSK mode

3G FEATURES:
- WCDMA mode supports output power, bandwidth for bands 1, 25, 3, 4, 34/39, 26, 8 (and sub-bands 2, 5) through an integrated band-select switch
- Digital bias optimization through RFFE interface for best efficiency/linearity tradeoff

4G FEATURES:
- Optimized for Average Power Tracking system
- LTE supports output power bandwidth bands 1, 25, 3, 4, 39, 26, 8, 20, 12, 13, 28 (and sub-bands 2, 9, 10, 5, 18, 19, 17)
Description

The SKYA21055 is a hybrid, multimode multiband (MMMB) Power Amplifier Module (PAM) that supports 2.5G and 3G/4G telematics modems and operates efficiently in GSM, EGPRS, EDGE, WCDMA, and LTE modes. The PAM consists of a GSM 800/EGSM 900 PA block, a DCS1800/PCS1900 PA block, separate WCDMA blocks operating in low and high bands, a logic control block for multiple power control levels, and band enable functions in both cellular and UMTS. RF I/O ports are internally matched to 50 Ω to minimize the number of external components. Extremely low leakage current maximizes handset standby time. The InGaP/GaAs die and passive components are mounted on a multi-layer laminate substrate and the assembly encapsulated in plastic overmold.

**GSM/EDGE:** The SKYA21055 uses a new compact architecture supporting the GSM850, EGSM900, DCS1800 and PCS1900 bands. The PAM also supports 2.5G Class 12 Enhanced General Packet Radio Service (EGPRS) multi-slot operation and EDGE linear modulation.

**WCDMA:** The SKYA21055 uses an enhanced architecture to support WCDMA, High-Speed Downlink Packet Access (HSDPA), High-Speed Uplink Packet Access (HSUPA) and LTE modulations; cover multiple bands for 3GPP, including bands 1, 25, 3, 4, 26, 8 and operate at different power modes. The module is fully controlled through MIPI interface.

**TD-SCDMA/TDD LTE:** The SKYA21055 uses an enhanced architecture that supports TD-SCDMA bands 34/39 and TDD LTE band 39.

**LTE:** The SKYA21055 meets spectral linearity requirements of LTE modulation with QPSK/16QAM up to 20 MHz bandwidth, including various resource block allocations, with good power-added efficiency.

Figure 1 is a functional block diagram of the SKYA21055 module.
## Ordering Information

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<thead>
<tr>
<th>Product Name</th>
<th>Order Number</th>
<th>Evaluation Board Part Number</th>
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<td>SKYA21055</td>
<td>EN40-D955-001E1</td>
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