

## PRODUCT SUMMARY

# SKY77656-11 Multimode Multiband Power Amplifier Module for Quad-Band GSM/EDGE – WCDMA / HSDPA / HSUPA / HSPA+ / LTE (Bands 1–5, 8, 12, 13, 17, 20, 26, 28, 34, 39)

## Applications

- Quad-band cellular handsets:
  - Class 4 GSM850 / EGSM900
  - Class 1 DCS1800 / PCS1900
  - Class E2 GSM850 / EGSM900 / DCS1800 / PCS1900
  - Class 12 multi-slot EGPRS
- Multiband 3G / 4G handsets
- WCDMA / HSDPA / HSUPA / LTE-modulated handsets for Bands 1, 2/25, 3, 4, 5, 8, 12, 13, 17, 20, 26, 28, 34, 39

## Features

- Hybrid architecture: separate GSM and 3G / 4G paths
- 50 ohm input and output impedances, integrated DC blocking on all ports
- Separate single-ended GSM and WCDMA inputs and outputs
- Two-wire MIPI® RFFE Control (SCLK, SDATA)
- VCC stages for 2.5G can attach to battery or buck DC/DC
- Small, low profile package:
  - 4.3 mm x 6.95 mm x 0.75 mm
  - 40-pad configuration

### 2.5G FEATURES:

- EGPRS Class 12 multi-slot operation
- Four RF power control levels using RFFE interface
- Linear PA with bias optimization for efficiency/linearity trade-off in 8-PSK mode

### 3G FEATURES:

- WCDMA mode supports output power, bandwidth for bands 1, 2, 3, 4, 34/39, 5, 8 (and sub-bands 9, 10, 25, 26) 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, 2, 3, 4, 39, 5, 8, 20, 12, 13, 17 (and sub-bands 9, 10, 18, 19, 25, 26)



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## Description

The SKY77656-11 is a hybrid, multimode multiband (MMMB) Power Amplifier Module (PAM) that supports 2.5G and 3G / 4G handsets 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 SKY77656-11 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 SKY77656-11 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, 2, 3, 4, 5, 8; operate at different power modes. The module is fully controllable via MIPI interface.

**TD-SCDMA / TDD LTE:** The SKY77656-11 uses an enhanced architecture that supports TD-SCDMA bands 34/39 and TDD LTE band 39.

**LTE:** The SKY77656-11 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. The SKY77656-11 supports LTE Downlink Carrier Aggregation harmonic cases with low harmonic levels.

## Ordering Information

Product Name	Order Number	Evaluation Board Part Number
SKY77656-11 Multimode Multiband Power Amplifier Module	SKY77656-11	EN41-D225-001

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