

# ACPM-9041-TR2

## LTE Band 41/38/xGP GPIO APT PA

### 2.0 mm × 2.5 mm

## Power Amplifier Module

### Product Brief



#### Description

The ACPM-9041 is a fully matched 10-pin surface mount power amplifier module developed for LTE Band 41, Band 38, and xGP, and it meets stringent linearity power up to LTE (MPR=0 dBm) 28.4 dBm. The 2 mm × 2.5 mm form-factor package is self contained, and it incorporates 50-ohm input and output matching networks.

The ACPM-9041 features CoolPAM circuit technology that supports two power modes—low and high. The CoolPAM is a stage bypass technology that enhances PAE (power added efficiency) at low power range. The stage bypass feature enhances PAE further at low output range, and it enables the PA to have exceptionally low quiescent current. Without a DC-DC converter, it dramatically saves average current consumption, extends the talk time of mobiles, and prolongs a battery life. It can be used with the APT (average power tracking) operation to reduce the power consumption when VCC1 is connected to the battery and VCC2 is connected to a DC-DC converter, which adjusts the VCC2 voltage according to the output power level.

A directional coupler is integrated into the module, and both coupling and isolation ports are available externally, which support a daisy chain. The integrated coupler has excellent coupler directivity, which minimizes the coupled output power variation or delivered power variation caused by a load mismatch from the antenna.

The power amplifier is manufactured on an advanced InGaP HBT (hetero-junction bipolar transistor) MMIC (microwave monolithic integrated circuit) technology that offers state-of-the-art reliability, temperature stability, and ruggedness.

#### Features

- Thin package (0.82 mm typical)
- Excellent linearity
- Two-mode power control with Vmode
- Compatible with APT
- High efficiency at maximum output power
- Ten-pin surface mounting package
- Internal 50-ohm matching networks for both RF input and output
- Integrated coupler
  - Coupler and isolation ports for a daisy chain
- Green – Lead-free and RoHS compliant

#### Applications

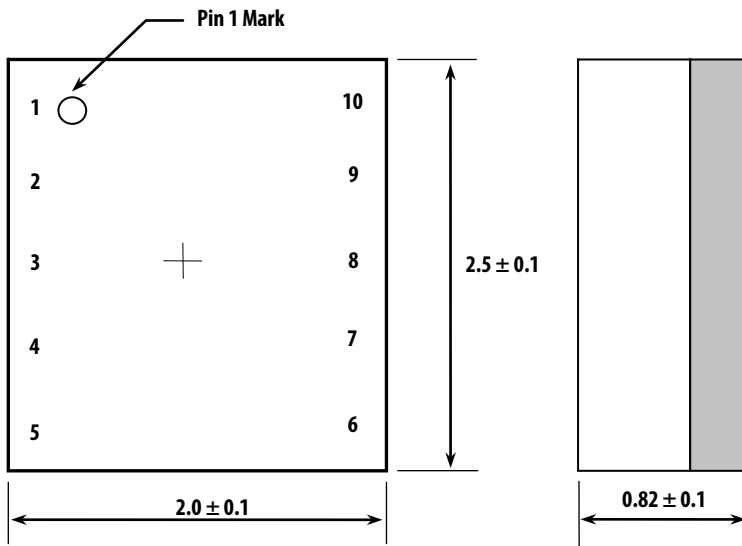
- Band 41 TD-LTE
- Band 38 TD-LTE
- xGP

#### Ordering Information

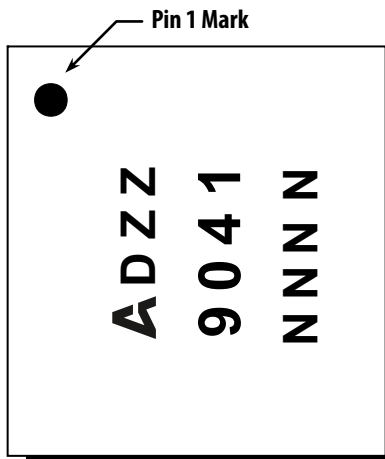
| Part Number   | Number of Devices | Container                |
|---------------|-------------------|--------------------------|
| ACPM-9041-TR2 | 1,000             | 178 mm (7 in.) tape/reel |

## Package Dimensions

All dimensions are in millimeters.



## Marking Specification



D – Date Code  
ZZ – Assembly Lot Identification  
9041 – Device Code

## Pin Description

| Pin # | Name  | Description  |
|-------|-------|--|
| 1     | VCC1  | DC supply voltage, connect to bias circuitry with a fixed voltage (higher than 3.2V)       |
| 2     | RFIN  | RF input   |
| 3     | GND   | GND  |
| 4     | Vmode | Mode control   |
| 5     | Ven   | PA enable  |
| 6     | CPL   | Coupling port of the coupler   |
| 7     | GND   | Ground   |
| 8     | ISO   | Isolation port of the coupler  |
| 9     | RFOUT | RF output  |
| 10    | VCC2  | DC supply voltage, connect to the RF stages' collector to which APT is applied (0.5V~3.5V) |

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For product information and a complete list of distributors, please go to our web site:

[www.avagotech.com](http://www.avagotech.com)

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AV02-4843EN – 2015-03-24

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