

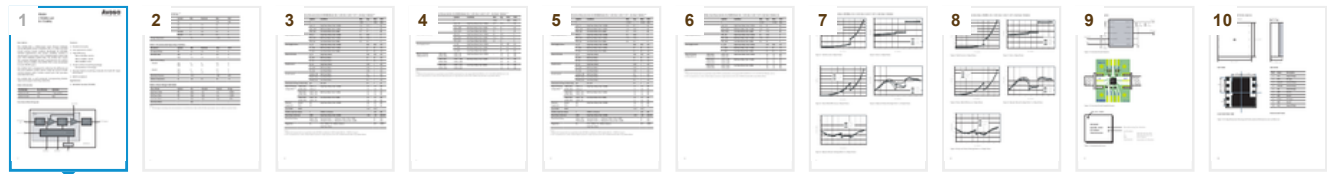
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ACPM-7391
4x4 Power Amplifier Module
for UMTS700(750-785MHz) and
UMTS700/200(70-755MHz)

Data Sheet

Description

The ACPM-7391, a Wide-band Code Division Multiple Access(WCDMA) Power Amplifier (PA), is a fully matched 10-pin surface mount module developed for WCDMA handset applications. This power amplifier module is developed to cover both 1710-1755MHz(UMTS1700/2100) and 1750-1785MHz (UMTS1700). The ACPM-7391 meets the stringent WCDMA linearity requirements for output power of up to 28dBm. The ACPM-7391 is also developed to meet HSDPA specs.

The ACPM-7391 is designed to enhance the efficiency at low and medium output power range by using 3-mode control scheme with 2 mode control pins. This provides extended talk time.

The ACPM-7391 is self contained, incorporating 50ohm input and output matching networks.

Order information

Part Number	No. of Devices	Container
ACPM-739-TR	000	7" Tape and Reel
ACPM-739-BLK	00	BULK

Functional Block Diagram



Features

- Excellent Linearity
- Low quiescent current
- High Efficiency
 - PAE at 28 dBm: 40.3%
 - PAE at 16dBm: 18.6%
 - PAE at 8dBm: 6.5%
- 10-pin surface mounting package 4mmx4mmx1.1mm(typ)
- Internal 50ohm matching networks for both RF input and output
- RoHS Compliant

Applications

- WCDMA Handset (HSDPA)

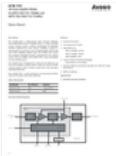
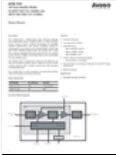
(2)	Match	Match	Match
Vcc1 (1)	Bias Circuit & Control Logic		
		TR Switch	MODULE
	Vmode1	Vmode0	Ven

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2345678910NextLast

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	Avago Technologies ACPM-7392-BLK (18 pages) 4x4mm UMTS PA Module For Band 4 Size: 683 Kb
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Summary of Contents

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Page 3 Table 4-1. UMTS1700 Electrical Characteristics for WCDMA Mode (Vcc3.4V, Ven2.6V, T25°C, Zin/Zout50ohm) Characteristics Symbol Operating Frequency Range F Gain Gain_hi Gain_mid Gain_low Power Added Efficiency PAE_hi PAE_mid PAE_low Total Supply Current Icc_hi Icc_mid Icc_low Quiescent Current Iq_hi Iq_mid Iq_low Enable ...
Page 4 Table 4-2. UMTS1700 Electrical Characteristics for HSDPA Mode (Vcc3.4V, Ven2.6V, T25°C, Zin/Zout50ohm) Characteristics Operating Frequency Range Gain Power Added Efficiency Total Supply Current Adjacent Channel 5 MHz offset Leakage Ratio [2] 0 MHz offset 5 MHz offset 0 MHz offset ...
Page 5 Table 5-1. UMTS1700/2100 Electrical Characteristics for WCDMA Mode (Vcc3.4V, Ven2.6V, T25°C, Zin/Zout50ohm) Characteristics Symbol Operating Frequency Range F Gain Gain_hi Gain_mid Gain_low Power Added Efficiency PAE_hi PAE_mid PAE_low Total Supply Current Icc_hi Icc_mid Icc_low Quiescent Current Iq_hi Iq_mid Iq_low Enable ...
Page 6 Table 5-2. UMTS1700/2100 Electrical Characteristics for HSDPA Mode (Vcc3.4V, Ven2.6V, T25°C, Zin/Zout50ohm) [1] Characteristics Operating Frequency Range Gain Power Added Efficiency Total Supply Current Adjacent Channel 5 MHz offset Leakage Ratio [2] 0 MHz offset 5 MHz offset 0 MHz ...
Page 7 UMTS1700 Characteristics Data (WCDMA, Vcc3.4V, Ven2.6V, T25°C, Zin/Zout50ohm) 500 450 400 1750MHz 350 1767.5MHz 300 1785MHz 250 200 150 100 Pout(dBm) Figure 1. Total Current vs. Output Power 1750MHz ...
Page 8 UMTS1700/2100 Characteristics Data (HSDPA, Vcc3.4V, Ven2.6V, T25°C, Zin/Zout50ohm) 500 450 400 1710MHz 350 1732.5MHz 300 1755MHz 250 200 150 100 Pout(dBm) Figure 6. Total Current vs. Output Power 45 40 1710MHz 35 ...
Page 9 ... Ven C1 100pF Figure 11. Evaluation Board Schematic C5 C4 AVAGO ACPM-7391 PYYWW TNAAAAA Figure 12. Evaluation Board Assembly Diagram Pin 1 Mark AVAGO ACPM-7391 PYYWW TNAAAAA Figure 13. Marking Specifications 9 Vcc2 10 C6 1000pF GND 9 RF Out 8 GND 7 GND Manufacturing Part Number Lot Number T ...
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4x4mm UMTS PA Module For Band 5
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IC,RF Amplifier,SINGLE,LLCC,10PIN,PLASTIC
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IC,RF Amplifier,SINGLE,LLCC,10PIN,PLASTIC
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Package Dimensions and Pin Descriptions Pin 1 Mark +/- 0.1 TOP VIEW 1.20 1.90 1.90 1.70 0.85 X-RAY BOTTOM VIEW Figure 14. Package Dimensional Drawing and Pin Descriptions (All dimensions are in millimeters) 0 ...

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... Insensitivity become dependent on the combined per- formance of the remaining elements in the TX chain: the power amplifier, coupler, antenna as well as the physical layout on the phone board. The ACPM-7391, as part of optimized design, meets the necessary linearity require- ments over a 4:1 VSWR mismatch at the antenna plane. ...

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PHASE (degree) (1) Pout vs. Phase 24.0 22.0 20.0 18.0 16.0 14.0 12 100 150 200 PHASE (degree) (3) Gain vs. Phase -20.0 -30.0 -40.0 -50.0 -60.0 ...

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... PCB Design Guidelines The recommended ACPM-7381 PCB land pattern is shown in Figure 18 and Figure 19. The substrate is coated with solder mask between the I/O and conductive paddle to protect the gold pads from short circuit that is caused by solder bleeding/bridging. 0.1 0.5 0.6 0.4 0.85 0.25 Ø 0.3mm on 0.6mm pitch Figure 18. Metallization ...

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Tape and Reel Information Dimension List Dimension Millimeter Dimension A0 4.40±0.0 B0 4.40±0.0 K0 .70±0.0 D0 .55±0.05 D .60±0.0 P0 4.00±0.0 P 8.00±0.0 Figure 21. Tape and Reel Format – mm. 4 Millimeter P2 2.00±0.05 P0 ...

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... NOTES: 1. Reel shall be labeled with the following information (as a minimum). a. manufacturers name or symbol b. Avago Technologies part number c. purchase order number d. date code e. quantity of units 2. A certificate of compliance (shall be issued and accompany each shipment of product. 3. Reel must not be made with or contain ozone depleting materials ...

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... After this time period, the part would need to be removed from the reel, de- taped and then re-baked. MSL classification reflow temperature for the ACPM- 7381 is targeted at 260° 0/-5°C. Figure 23 and Table 8 show typical SMT profile for maximum tempera- ture of 260 0/-5°C. ...

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max Ts min ts Preheat Peak Figure 23. Typical SMT Reflow Profile for Maximum Temperature 260 0/-5°C Table 8. Typical SMT Reflow Profile for Maximum Temperature 2600 / ...

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Storage Condition Packages described in this document must be stored in sealed moisture barrier, antistatic bags. Shelf life in a sealed moisture barrier bag is 12 months at <40°C and 90% relative humidity (RH) J-STD-033 p.7. Out- of-Bag Time Duration After ...

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Table 9. Recommended Equivalent Total Floor Life (days) @ 20°C, 25 °C & 30 °C For ICs with Novolac, Biphenyl and Multifunc- tional Epoxies (Reflow at same temperature at which the component was classified) Maximum Percent Relative Humidity Package Type ...

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