

## Product Brief



### Description

The AFEM-7758-AF1 is a fully matched CDMA Front-End Module featuring the integration of Power Amplifier, Duplexer, Band-pass Filter and Coupler. The power amplifier is based on CoolPAM-V technology, which is designed to minimize power consumption with three power modes, Hi-power mode, Mid-power mode and Bypass mode. Bypass mode is realized with Avago's proprietary Active Bypass PA topology, and provides only 3mA Icq and roughly 8dB gain to support linear Pout up to 8dBm. The Duplexer and Band-pass filter utilizes Avago's FBAR (Film Bulk Acoustic Resonator) technology.

The combination of CoolPAM-V and FBAR technology enables the AFEM-7758-AF1 to improve handsets performance in the following areas:

- Longer talk time
- ACPR and Emission specification
- Receiver sensitivity
- Robust jammer desensitization

The AFEM-7758-AF1 provides outstanding low power and mid-power efficiency. Improved Low power and Mid power efficiency increases handset talk time significantly based on CDG Stage-4 talk time test PDF (Probability Density Factor). The CoolPAM-V technology does not require a DC-DC converter, saving space and reducing cost.

The power amplifier is manufactured using advanced In-GaP HBT (Hetero-junction Bipolar Transistor) technology offering state-of-the-art reliability, temperature stability and ruggedness.

The FBAR based duplexer provides low insertion and outstanding isolation to minimize Tx leakage in both Rx and Tx bands over the temperature range. It improves the handset receiver sensitivity and single tone desensitization performance. Low insertion loss of the FBAR duplexer and optimized matching with minimized interconnection loss contribute to save power consumption. Optimized matching between the PA and Duplexer eliminates the need for a bulky and costly isolator.

### Features

- Integrated Duplexer, Power Amplifier, Band-pass Filter and Coupler
- Operating Frequency:
  - Tx: 1850~1910 MHz
  - Rx: 1930~1990 MHz
- 25 dBm Linear Output Power @ 3.4V
- Hi-power, Low Power and Bypass mode
  - High Power Mode > 15dBm
  - Mid-Power Mode > 8dBm
  - Very Low Quiescence current in Bypass mode
  - High Mid-power Efficiency in Mid-power mode
- 3.2 - 4.2 V Linear Operation
- High Isolation (Low Tx leakage at Rx port)
- cdma2000 1xRTT capable
- No Isolator Required
- No DC-DC converter need
- 50 ohm input and output matching
- 4.0 x 7.0 x 1.1 mm SMT Package

### Applications

- CDMA PCS and Dual-band handsets
- Wireless PDAs
- Wireless data cards

### Ordering Information

Part Number	Number of Devices	Container
AFEM-7758-AF1	1000	178mm (7") Tape/Reel

For product information and a complete list of distributors, please go to our web site: [www.avagotech.com](http://www.avagotech.com)