Freescale RF Devices in **Land Mobile** and **Meters**

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A U G . 2 0 1 5

External Use

Land Mobile Radio

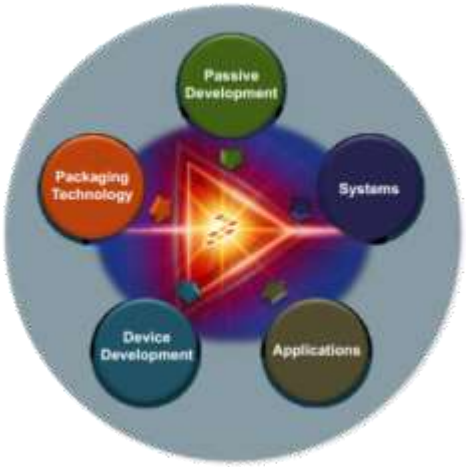
Freescale RF Strategy for Professional Mobile Radios

1. Complete refresh of the portfolio with 10+ new Airfast transistors

2. Series of low power LDMOS transistors (3-4W)

3. Dual-stage RF ICs with 0dBm input

….Bringing Freescale's leading-edge ***Airfast*** *technology to PMR*



Airfast is a result of a Holistic design approach and not any one individual piece of technology

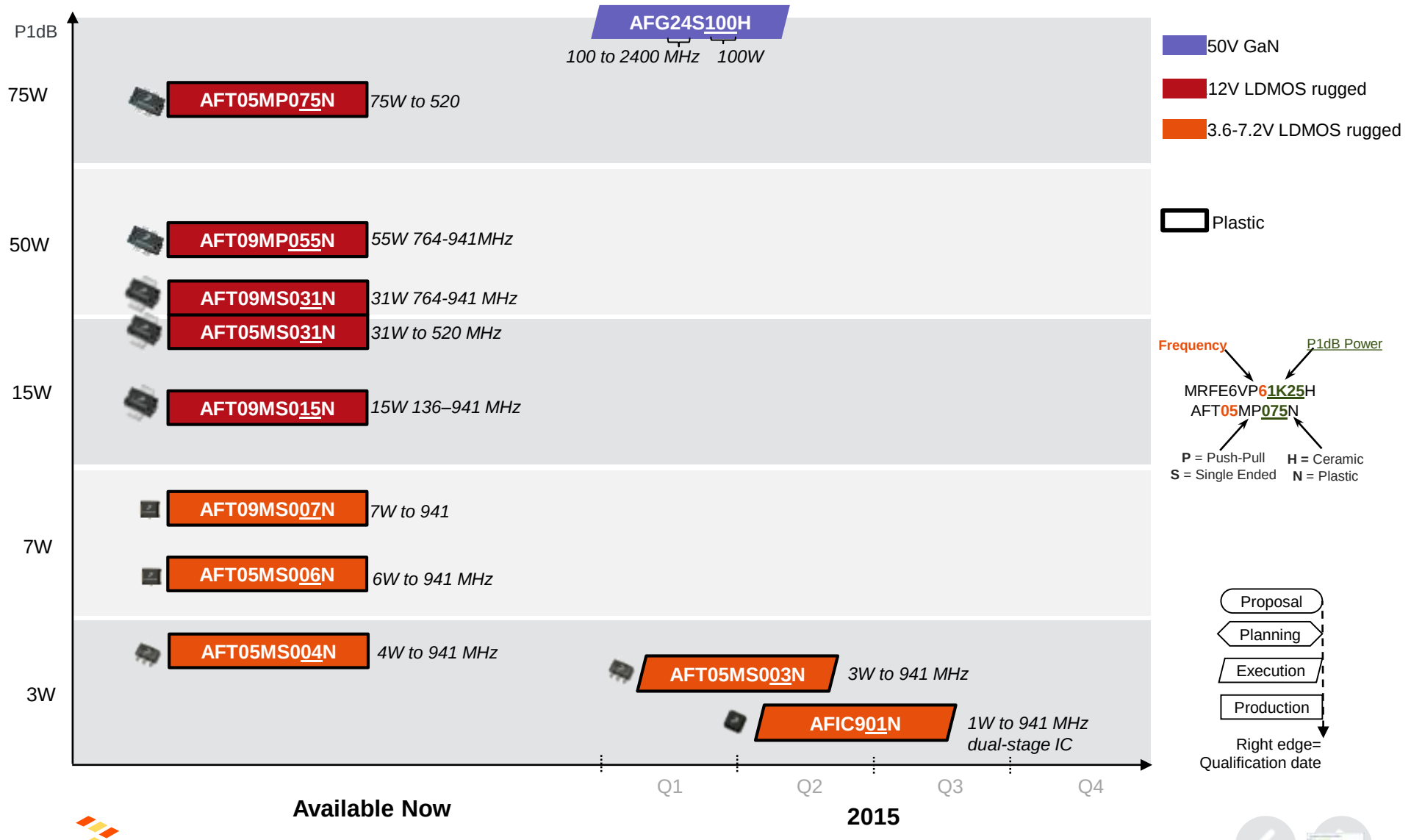
Freescale New Airfast Mobile Radio Devices

Features include

- Best ruggedness in the industry:
  - LDMOS devices handle > 65:1 VSWR with 3 dB overdrive
- High gain
  - Eliminates stages, reducing system cost
- High efficiency
  - Allows use of smaller heatsinks and housings
  - Less heat improves reliability
- Broadband capability
  - Enables full performance across in each PMR band
  - Slightly reduced performance across multiple bands.
- Available in cost effective plastic packages
- Freescale product longevity program

Land Mobile Radio Roadmap

All watts are CW.



50V GaN

12V LDMOS rugged

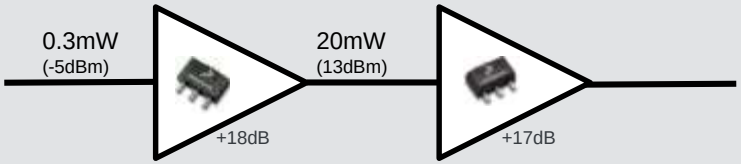
3.6-7.2V LDMOS rugged

Plastic

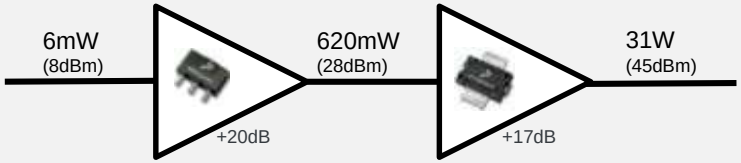
Back to overview

Example of Professional Mobile Radio line-ups:

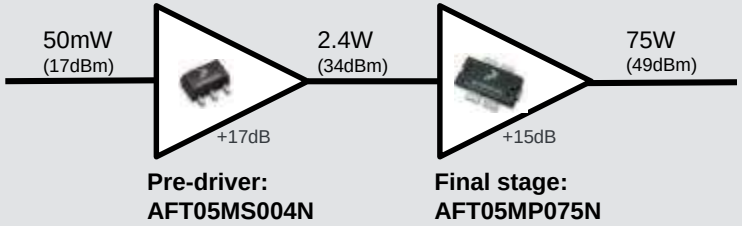
Line-up for **handheld** radio:



Line-up for **mobile** (vehicle) radio:



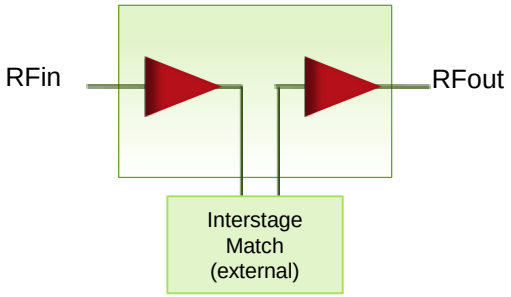
Line-up for **BTS**:



New

AFIC901N: 1W frequency-configurable LDMOS RFIC

- Two-stage LDMOS Driver
  - External matching allows optimization for range of voltages and frequencies
  - 1W output power
  - Housed in a QFN 4 x 4 package
  - Product Longevity program: warranted availability until 2030



Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	PCB Size	Link
136-175	1 CW	32	60	0.83x1.88”	
350-520	1 CW	30	55	0.83x1.88”	

New

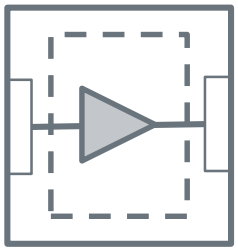
AFT05MS003N

136-941 MHz

3.6 V
7.5 V

>3W (P1dB CW @ 7.5V)

- Unmatched Input and Output LDMOS transistor
- Housed in an SOT89 over-molded plastic package
- Extreme Ruggedness: handles >65:1 VSWR
- Product Longevity program: warranted availability until 2030



Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	PCB Size	Link
136-175	3.4 CW	17.3	67.3	0.83x1.86”	
350-520	3.4 CW	15.3	75.4	0.83x1.86”	


ISM driver Roadmap


Land Mobile Roadmap

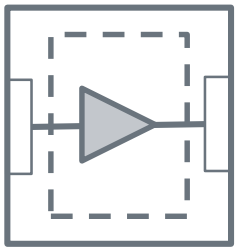
AFT05MS004N

136-941 MHz

3.6 V
7.5 V

2W (P1dB CW 3.6V), 5W (7V)

- Unmatched Input and Output LDMOS transistor
- Housed in an SOT89 over-molded plastic package
- Extreme Ruggedness: handles >65:1 VSWR
- Product Longevity program: warranted availability until 2029



Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	PCB Size	Link
136-175	5.5 CW	17	60	0.83x1.86”	
350-520	4 CW	16	45	0.83x1.86”	


ISM driver Roadmap


Land Mobile Roadmap


Datasheet

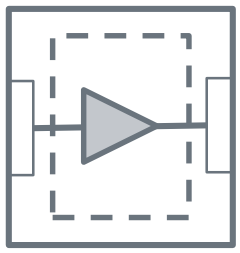
AFT05MS006N

136-941 MHz

3.6 V
7.5 V

6 W CW (P1dB @ 7.5V)

- Unmatched Input and Output
- Housed in an PLD1.5W over-molded plastic package
- Extreme Ruggedness: handles >65:1 VSWR with 3dB overdrive
- Product Longevity program: warranted availability until 2028



Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	Size (inch)	Link
350-520	6 CW	14.4	60	0.83 x 1.86”	
440-520	6.4 CW	16.3	65	0.83 x 1.86”	
760-870	6.7 CW	15.2	58.5	0.83 x 1.86”	

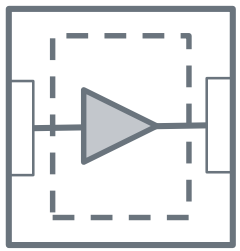
Roadmap Datasheet

AFT09MS007N

136-941 MHz

3.6 V
7.5 V

7 W CW (P1dB @ 7.5V)



- Unmatched Input and Output
- Housed in an PLD1.5W over-molded plastic package
- Extreme Ruggedness: handles >65:1 VSWR with 3dB overdrive
- Product Longevity program: warranted availability until 2028

Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	Size (inch)	Link
136-174	7.2 CW	14.6	69	0.83 x 1.88	
350-470	7 CW	14.8	55	0.83 x 1.88	
350-520x2	15 CW	18	45	1 x 2	
450-520	7.9 CW	15	57	0.83 x 1.88	
760-860	7.5 CW	14.8	51	0.83 x 1.86	
800-940	8 CW	11.2	50	0.83 x 1.88	

Roadmap Datasheet

AFT09MS015N

136-941 MHz

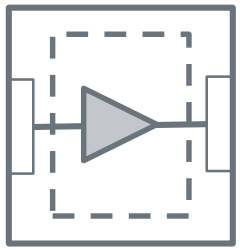
12.5 V

16 W CW (P1dB)

- Unmatched Input and Output
- Housed in an PLD1.5W over-molded plastic package
- Extreme Ruggedness: handles >65:1 VSWR with 3dB overdrive
- Product Longevity program: warranted availability until 2028

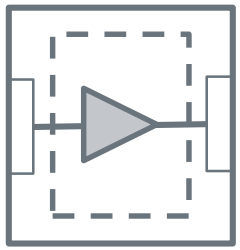
Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	Size (inch)	Link
350-520	16 CW	18.5	60	0.83 x 1.88	
760-870	15 CW	16.8	52.3	0.83 x 1.86	
800-940	15 CW	16	50	0.83 x 1.86	



AFT05MS031N

- Unmatched Input and Output
- Housed in an TO-270 over-molded plastic package
- Extreme Ruggedness: handles >65:1 VSWR with 3dB overdrive
- Product Longevity program: warranted availability until 2027



Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	Size (inch)	Link
136-174	31 CW	23.2	62	0.83 x 1.55	
380-450	31 CW	18.3	64.1	0.83 x 1.55	
450-520	31 CW	17.7	62	0.83 x 1.55	

Roadmap Datasheet

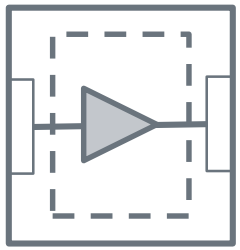
AFT09MS031N

764-941 MHz

13.6 V

31 W CW (P1dB)

- Unmatched Input and Output
- Housed in an TO-270 over-molded plastic package
- Extreme Ruggedness: handles >65:1 VSWR with 3dB overdrive
- Product Longevity program: warranted availability until 2027



Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	Size (inch)	Link
764-870	35 CW	15.5	57	0.83 x 1.83	
870-941	33 CW	15	58	0.83 x 1.85	

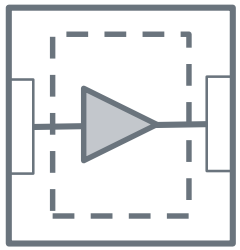
AFT09MP055N

764-941 MHz

12.5V

55 W CW (P1dB)

- Unmatched Input and Output
- Housed in an TO-270 over-molded plastic package
- Extreme Ruggedness: handles >65:1 VSWR
- Product Longevity program: warranted availability until 2027

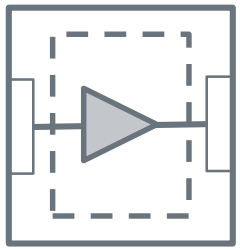


Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	Size (inch)	Link
764-870	55 CW	15	55	2 x 3	

AFT09MP075N

- Unmatched Input and Output
- Housed in an TO-270 over-molded plastic package
- Extreme Ruggedness: handles >65:1 VSWR with 3dB overdrive
- Product Longevity program: warranted availability until 2027



Available Reference Circuits

Board Frequency (MHz)	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	Size (inch)	Link
135-175 with 4W driver	70 CW	16	62	2 x 3	
135-175	75 CW	19	65	2 x 3	
380-450	70 CW	16	62	2 x 3	
450-520	76 CW	14.6	75	2 x 3	

Roadmap Datasheet

www.Freescale.com