Analog Transmitter R5

Features

- Very low power dissipation
- Fexible operating supply voltages
- Bandwidth of 12MHz
- Very low output resistance
- Push pull output stage
- 50Ω load drive
- Specified to +/- 50V
- Low distorsion

Applications

- Medical ultrasound imaging
- NDT metal flaw detection
- Piezoelectric transducer drivers

General Description

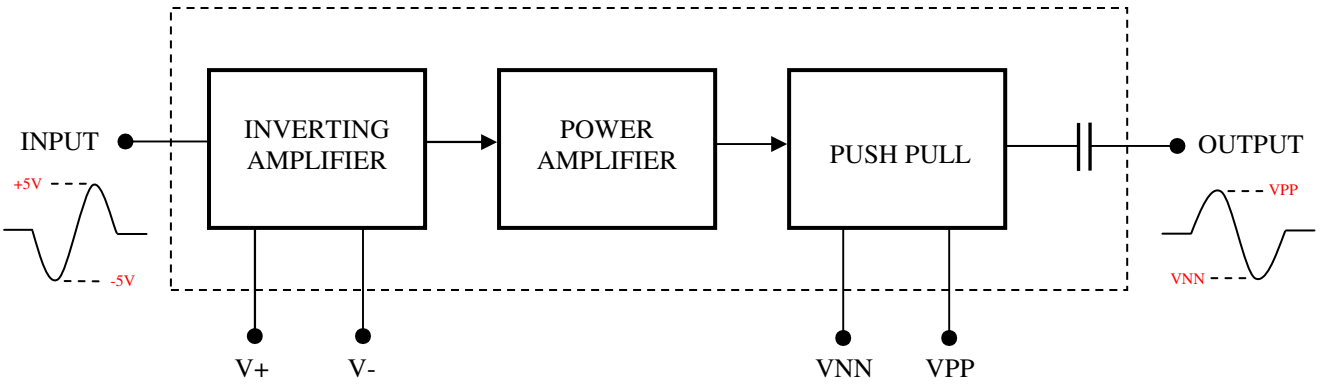
This device is an analog transmitter to generate arbitrary waveforms intented for use in applications requiring high voltage analog signals such as NDT ultrasound flaw detection, medical ultrasound imaging and piezoelectric transducer driver.

Using components with low distorsion and low power, this transmitter can provide efficient control of high voltage analog signals.

Input signal can have a low level. Typically, this level is +/- 5V, it depends on the amplification created by the board resistors.

Normaly, it used to the OPEN system but you can use it to make your own system or application, with the information described above.

Block Diagram



Ordering Information

Device	Package
	No standard
Analog Transmitter R5	LEATR5

Pin Configuration

Pin #	Pin Name
1	VIN
2	GND
3	NC
4	NC
5	V+
6	V-
7	NC
8	GND
9	VOUT
10	GND
11	GND
12	GND
13	NC
14	VPP
15	NC
16	VNN

Absolute Maximum Ratings

Parameter	Value
Input	+/-9V
V+	+18V
V-	-18V
VPP positive supply	+150V
VNN negative supply	-150V
Output	VNN to VPP

Absolute Maximum Ratings are those values beyond damage to the device may occur. Functional operation under theses conditions is not implied. Continuous operation of the device at the absolute rating level may affect device reliability. All voltages are referenced to device ground.

Operating Conditions

Parameter	Value
Input	-5V to +5V
V+	+12V
V-	-12V
VPP positive supply	+100V
VNN negative supply	-100V
Output	VNN to VPP

ESD CAUTION

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

Electrical Characteristics

(Over operating conditions unless otherwise specified)

Sym	Parameter	+25°C	Units
Rout	Output resistance	5	Ω
BW	Bandwidth to -3dB	12	MHz
Cout	Output capacitance (serial)	1	µF
Cin	Input capacitance	2.5	pF
Is	Power supply current	+/- 38	mA
Av	Voltage gain	10	V/V

Typical Performance Characteristics

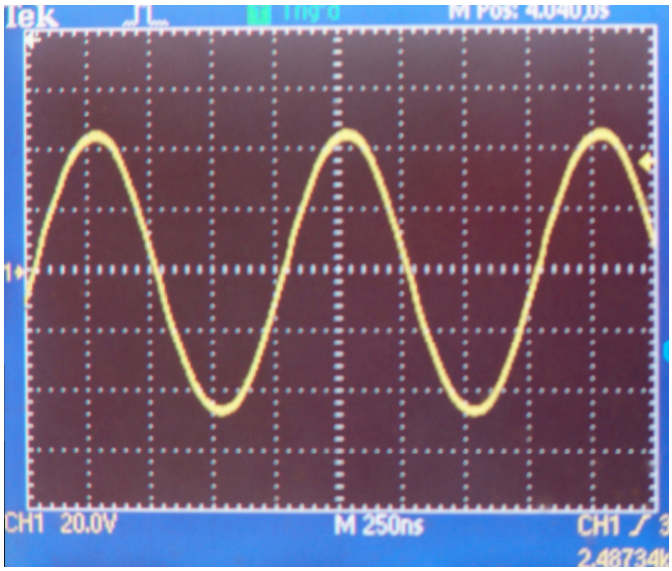


Figure 1 : Sine 1MHz

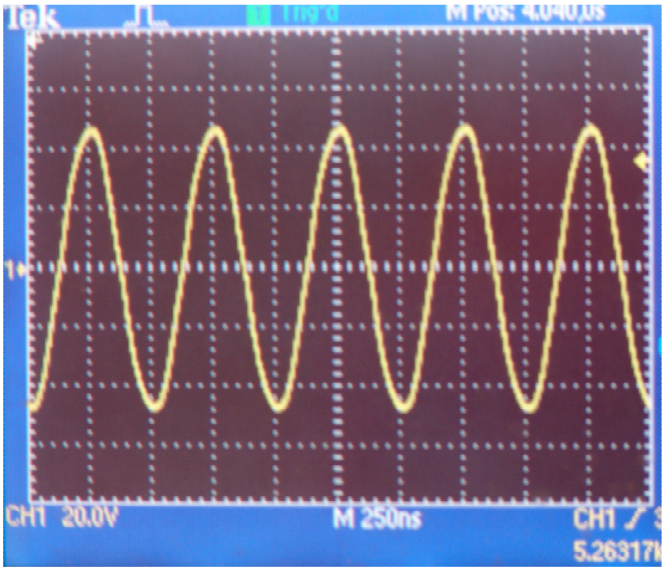


Figure 2: Sine 2MHz

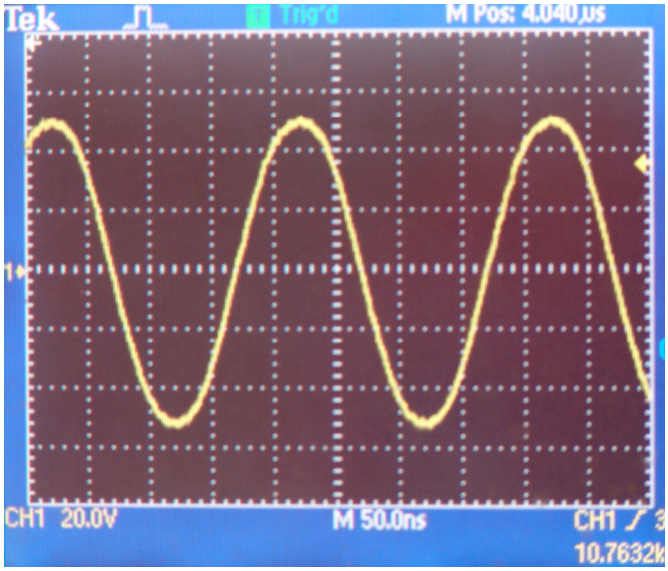


Figure 3: Sine 5MHz

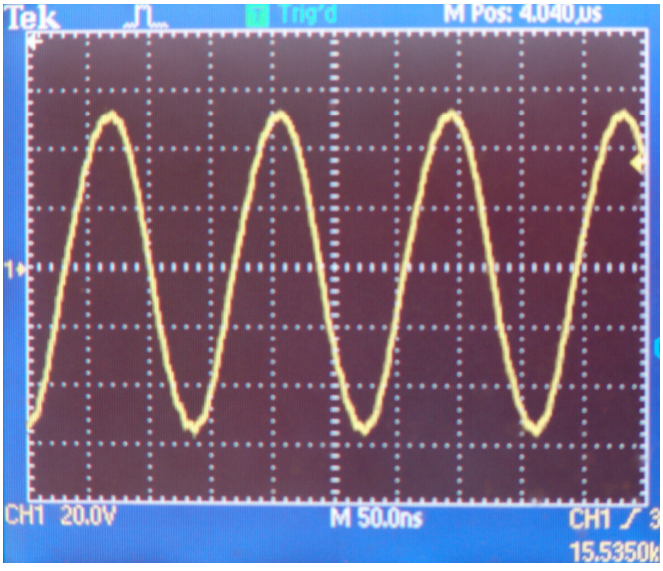


Figure 4: Sine 7MHz

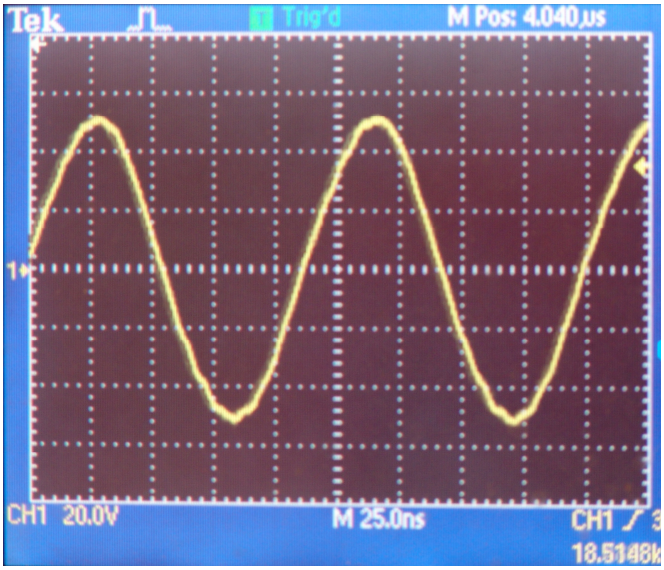


Figure 5: Sine 9MHz

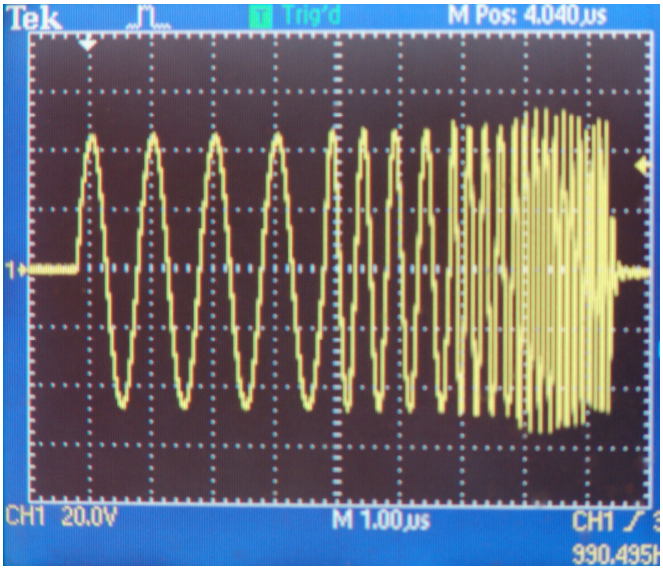


Figure 6: Sine with various frequencies

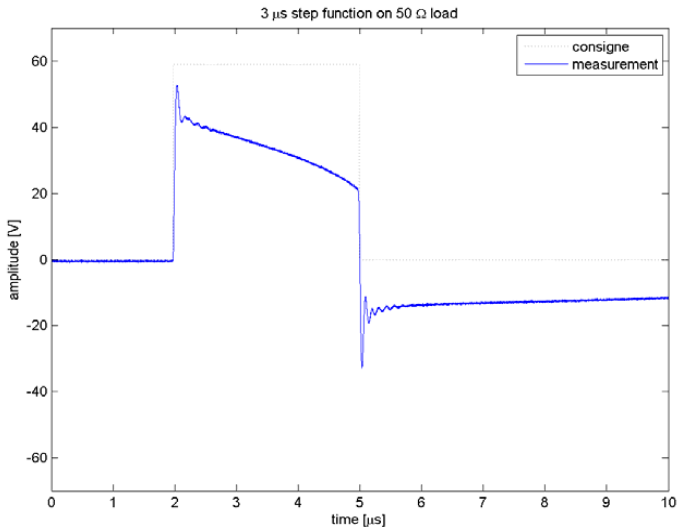


Figure 7: Step Response

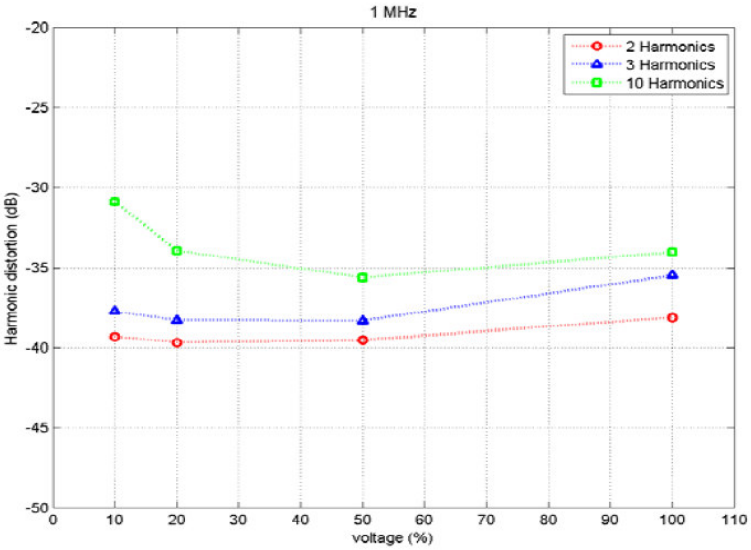


Figure 8: Harmonic Distorsion at 1MHz

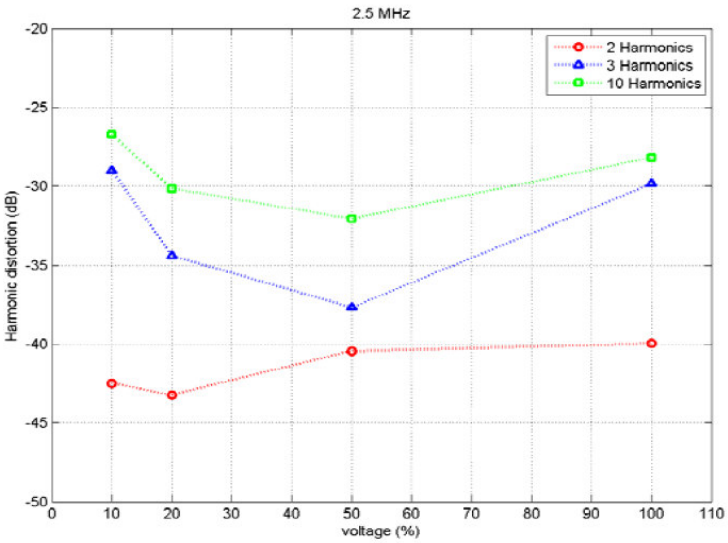


Figure 9: Harmonic Distorsion at 2.5MHz

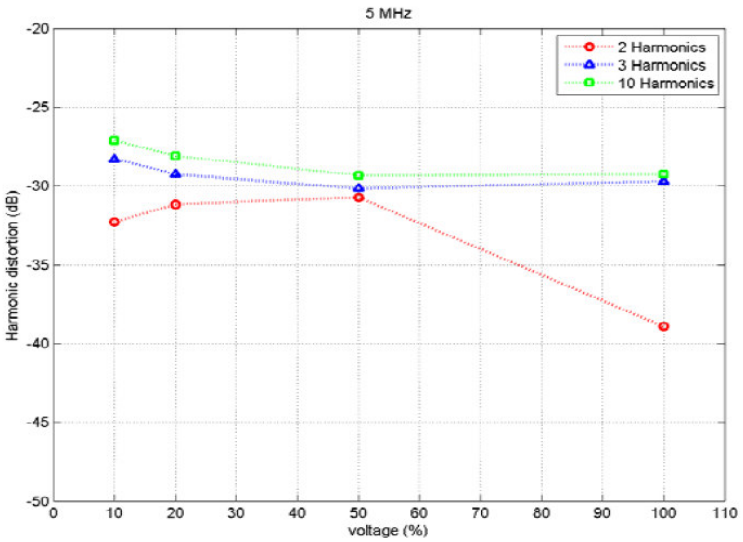
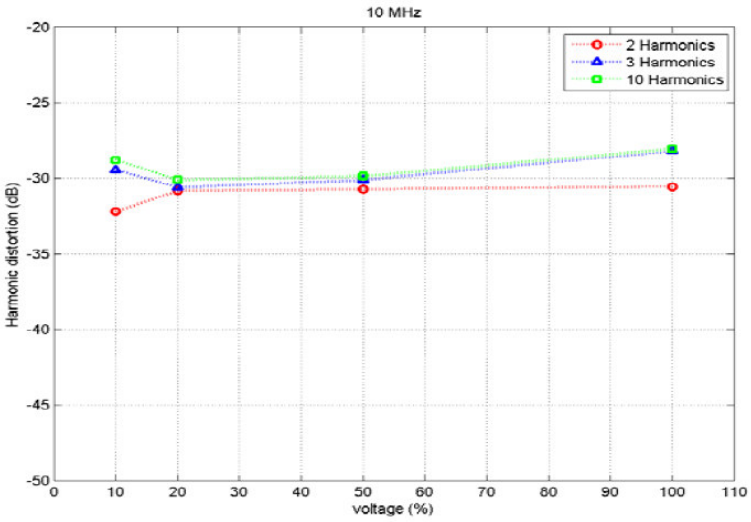
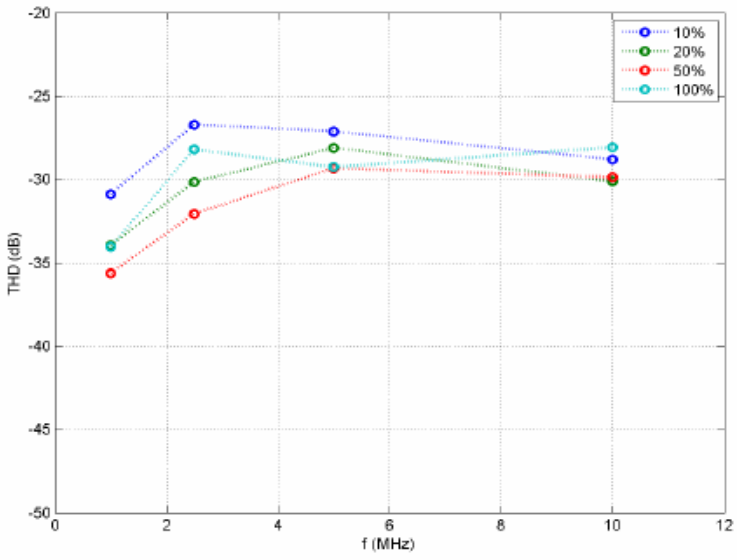


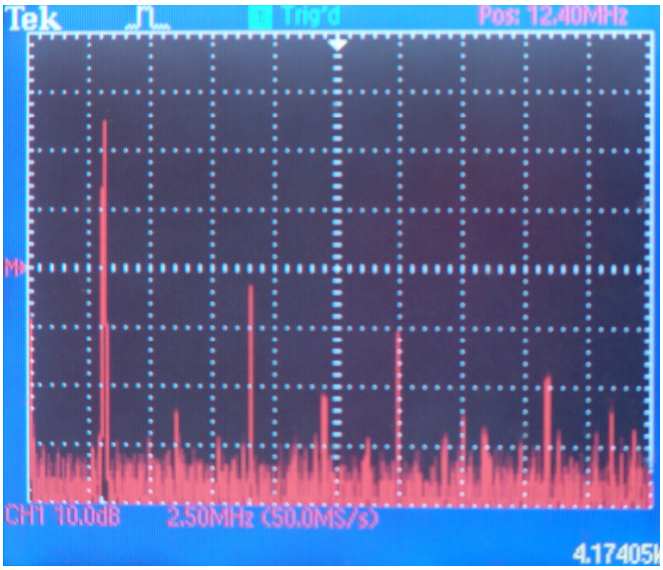
Figure 10: Harmonic Distorsion at 5MHz



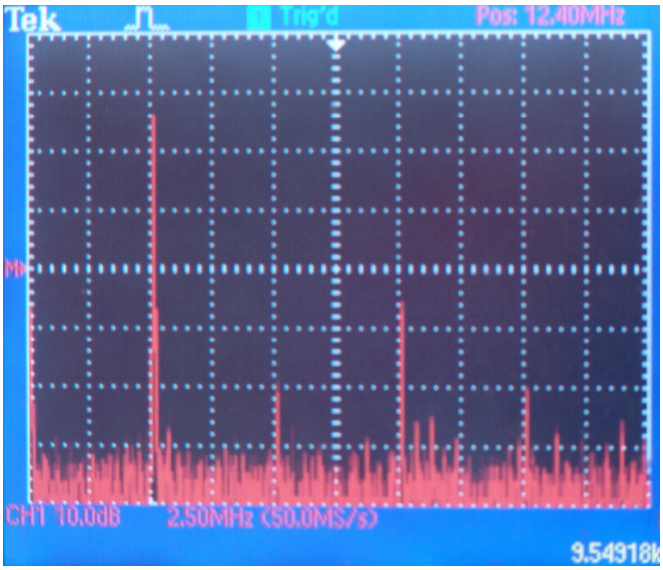
TPC 11: Harmonic Distorsion at 10MHz



TPC 12: THD vs. Frequency



TPC 13: Spectrum at 3MHz



TPC 14: Spectrum at 5MHz