

LOW EMI SPREAD SPECTRUM

EMC 530 Clock Oscillator

 **RoHS** 5.0VDC OR 3.3VDC; 8 AND 14 PIN DIP

PRODUCT DESCRIPTION

The EMC530 Clock Oscillator is an advanced spectrum spread modulator unit with a standard TTL or CMOS compatible output that meets clock requirements of all major CISC, RISC, and DSP processors. It modulates clock harmonics to reduce electromagnetic emissions and associated harmonics at the source. The EMC530 is a direct replacement for crystal oscillators and is plug compatible to standard 8 Pin Dip (Half Size) and 14 Pin Dip (Full Size) packages. It is available in a wide range of Selectable Output Frequencies (11 to 120 MHz).

The EMC530 can reduce emissions up to 20 dB. Compliance with international regulations can be obtained with EMC530 during pre-production and compliance testing, effectively eliminating multiple designs and testing cycles.

- Accelerate compliance approvals
- Reduce engineering and compliance costs
- Accelerate market launch schedules

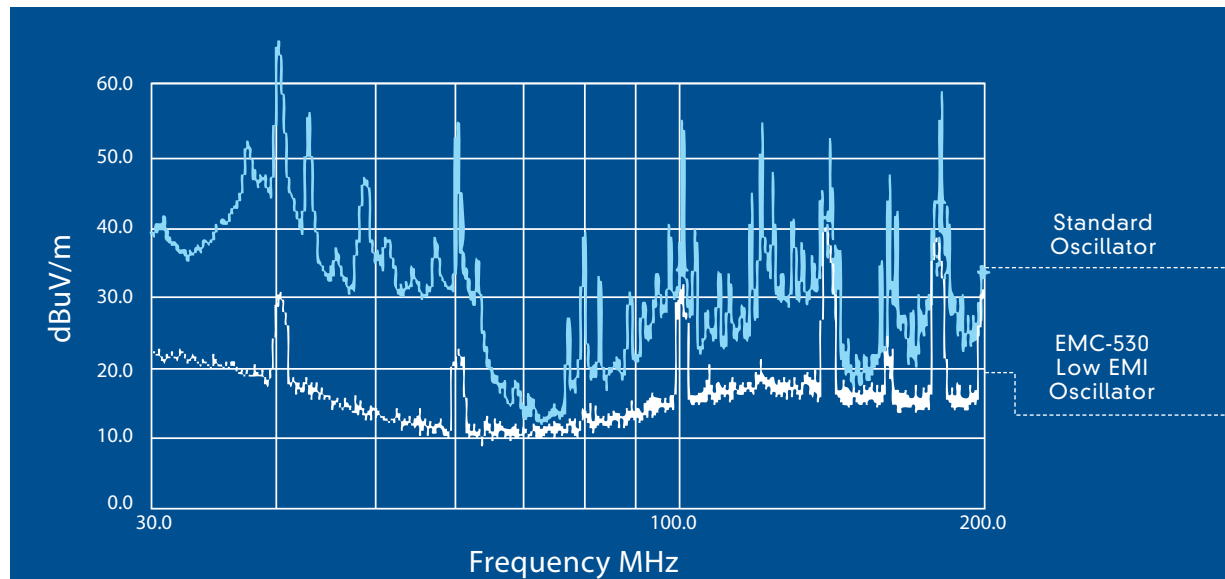
APPLICATION

The EMC530 Clock Oscillator is designed for installations into electronic equipment required to meet FCC or European EMC Directives and is particularly appropriate for applications in —

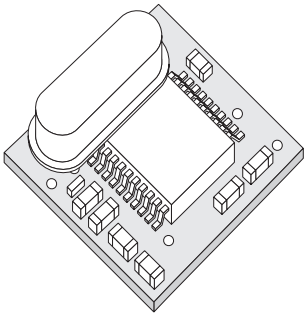
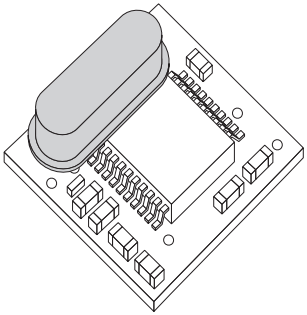
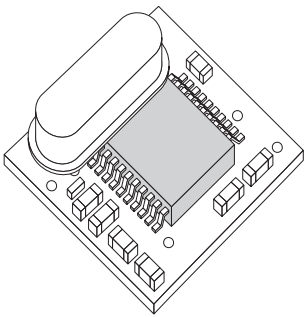
- Telecommunications
- Capital Equipment
- Consumer Electronics, Printers
- Aerospace
- Medical Equipment

Equipment previously classified as non-complying can be retrofitted at the compliance test lab or in the field with the EMC530 Clock Oscillator. Once upgraded, this same equipment can be shipped into any country requiring compliance.

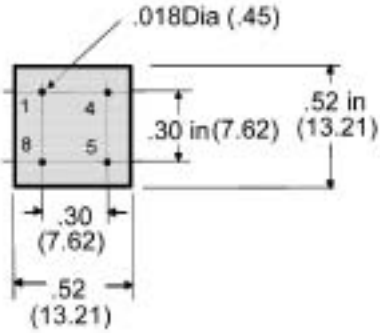
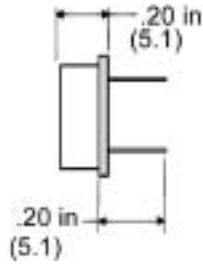
OUTPUT DATA



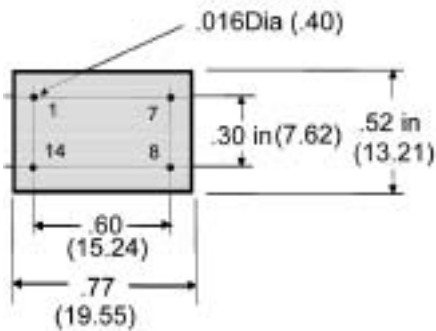
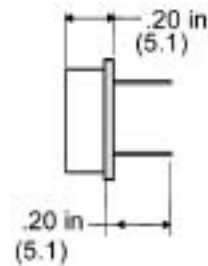
STANDARD OSCILLATOR COMPARED TO LOW EMI OSCILLATOR



DIMENSIONS



8 Pin Dip (Half Size)



14 Pin Dip (Full Size)

ORDERING OPTIONS

PRODUCT MODEL NUMBER + PACKAGE TYPE + OPERATING TEMPERATURE - FREQUENCY - BANDWIDTH - LF

EMC530

8P for 8 PIN
CC for 14 PIN

B = 0° C To +70° C

-020.000 for 20 MHz
-032.768 for 32.768 MHz
-128.000 for 128 MHz

-C1 = ±2.5% (Default)
-C2 = ±.625%
-C3 = ±1.25%
-C4 = ±5%

Lead Free

EXAMPLE: EMC530CCB-033.000-C1

For 3.3V Operating Voltage, 0° C to +70° C, 33.000 MHz, ±2.5% Center Spread

ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Min	Max	Units
Operating Voltage	VDD	0	6	VDC
Input, relative to VSS	VIRvss	-0.3	VDD+0.3	VDC
Output, relative to VSS	VORvss	-0.3	VDD+0.3	VDC
AVDD relative to DVDD	ΔVpp	-100	100	mV
AVSS relative to DVSS	ΔVss	-100	100	mV
Temperature, Operating	TOP	0	70	°C
Temperature, Storage	TST	-65	150	°C

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Units
Input Low Voltage	VIL	—	—	0.8	VDC
Input High Voltage	VIH	2	—	—	VDC
Input Low Current	IIL	—	—	100	μA
Input High Current	IIH	—	—	100	μA
Output Low Voltage IOL=10mA, VDD=5V	VOL	—	—	0.4	VDC
Output High Voltage IOL=10mA, VDD=5V	VOH	VDD-1.0	—	—	VDC
Output Low Voltage IOL=6mA, VDD=3.3V	VOL	—	—	0.4	VDC
Output High Voltage IOL=5mA, VDD=3.3V	VOH	2.4	—	—	VDC
Short Circuit Current (FOUT)	ISC	—	—	30	mA
Bandwidth Variations			5%*		%

* Unit is set @ 5% total BW (± 2.5% of center frequency)

TIMING CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Units
Output Rise Time Measured at 10%-90% @ 5VDC	tTLH	3.3	3.5	3.8	ns
Output Fall Time Measured at 10%-90% @ 5VDC	tTHL	2.1	2.3	2.5	ns
Output Rise Time Measured at 0.8V-2.0V @ 5VDC	tTLH	0.7	0.75	0.8	ns
Output Fall Time Measured at 0.8V-2.0V @ 5VDC	tTHL	0.6	0.7	0.8	ns
Output Rise Time Measured at 10%-90% @ 3.3VDC	tTLH	4.8	5	5.4	ns
Output Fall Time Measured at 10%-90% @ 3.3VDC	tTHL	2.9	3.2	3.4	ns
Output Rise Time Measured at 0.8V-2.0V @ 3.3VDC	tTLH	1.6	1.75	1.9	ns
Output Fall Time Measured at 0.8V-2.0V @ 3.3VDC	tTHL	1.1	1.3	1.5	ns
Output Duty Cycle	TsymF1	45	50	55	%

Measurements performed at VDD=3.3 and 5.0V ± 10%, TA= 0°C to 70°C, Fout=50.0 MHz

PIN CONFIGURATION

8 PIN DIP (HALF SIZE)	
Pin Number	Function
1	NC
4	GND
5	OUTPUT
8	VCC

14 PIN DIP (FULL SIZE)	
Pin Number	Function
1	NC
7	GND
8	OUTPUT
14	VCC