

RoHS Compliant & Pb Free Product

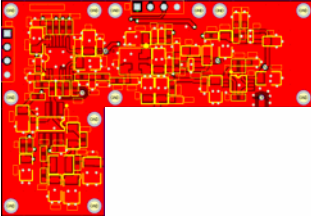
MC1-AN003

- Documents: Microwave Cell Application Note: Synthesizer Applications

Unlimited Possibilities!

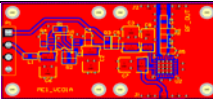
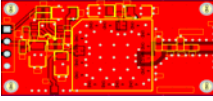
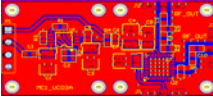
MicrowaveCells provides the following initial basic PLL and VCO PCB cells.


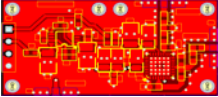
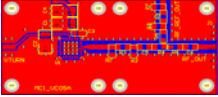
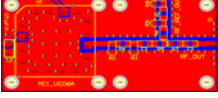
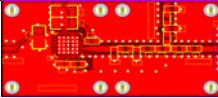
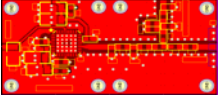
Table 1: PLL PCB Cells

Cell Name	Supported Package	Cell Size	PCB Layout	Supported Device Vendor	Minimum Supported Device Part #
MC1-PL01A	TSSOP-16	L (1x3+1)		Analog Devices	ADF4110/4111/4112/4113; ADF4116/4117/4118; ADF4153/4154/4156. www.analog.com

MC1-VC01A and MC1-VC05A supports the same footprints and the same devices, the difference is MC1-VC01A designed for valuation for VCO itself, and MC1-VC05A designed for using with PLL chip such as MC1-PL01A. The same concept applies for MC1-VC02A/MC1-VC06A, MC1-VC03A/MC1-VC07A, and MC1-VC04A/MC1-VC08A.

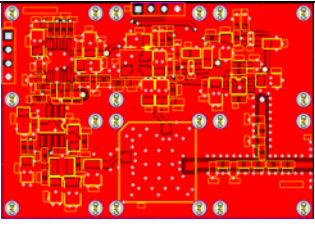
Table 2: VCO PCB Cells

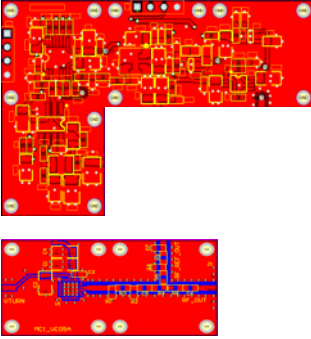
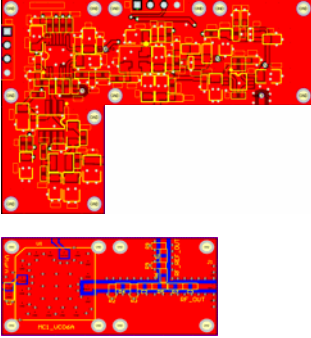
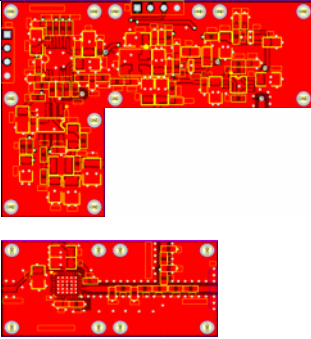
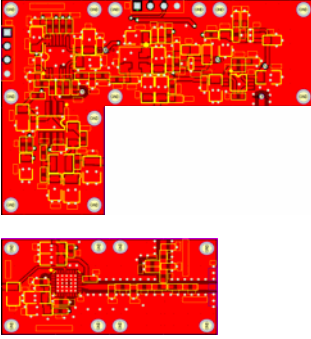

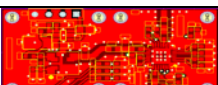
Cell Name	Supported Package	Cell Size	PCB Layout	Supported Device Vendor	Minimum Supported Device Part #
MC1-VC01A	LP4	1x2		Hittite	HMC384LP4/HMC385LP4/HMC386LP4/HMC388LP4/HMC389LP4/HMC390LP4/HMC391LP4/HMC416LP4/HMC429LP4/HMC430LP4/HMC431LP4/HMC466LP4/HMC505LP4/HMC506LP4/HMC532LP4 www.hittite.com
MC1-VC02A	5x5mm ² Mini-14s Mini-16	1x2		UMS ZCOM M/A-Com etc. many other vendors	www.vco1.com www.zcomm.com www.macom.com etc.
MC1-VC03A	LP5	1x2		Hittite	HMC507LP5/HMC508LP5/HMC509LP5/HMC511LP5 www.hittite.com

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MC1-VC04A	LP5	1x2		Hittite	HMC510LP5/HMC513LP5/HMC514LP5/HMC515LP5/HMC529LP5/HMC534LP5/HMC584LP5 www.hittite.com
MC1-VC05A	LP4	1x2		Hittite	HMC384LP4/HMC385LP4/HMC386LP4/HMC388LP4/HMC389LP4/HMC390LP4/HMC391LP4/HMC416LP4/HMC429LP4/HMC430LP4/HMC431LP4/HMC466LP4/HMC505LP4/HMC506LP4/HMC532LP4 www.hittite.com
MC1-VC06A	5x5mm ² Mini-14s Mini-16	1x2		UMS ZCOM M/A-Com etc. many other vendors	www.vco1.com www.zcomm.com www.macom.com etc.
MC1-VC07A	LP5	1x2		Hittite	HMC507LP5/HMC508LP5/HMC509LP5/HMC511LP5 www.hittite.com
MC1-VC08A	LP5	1x2		Hittite	HMC510LP5/HMC513LP5/HMC514LP5/HMC515LP5/HMC529LP5/HMC534LP5/HMC584LP5 www.hittite.com

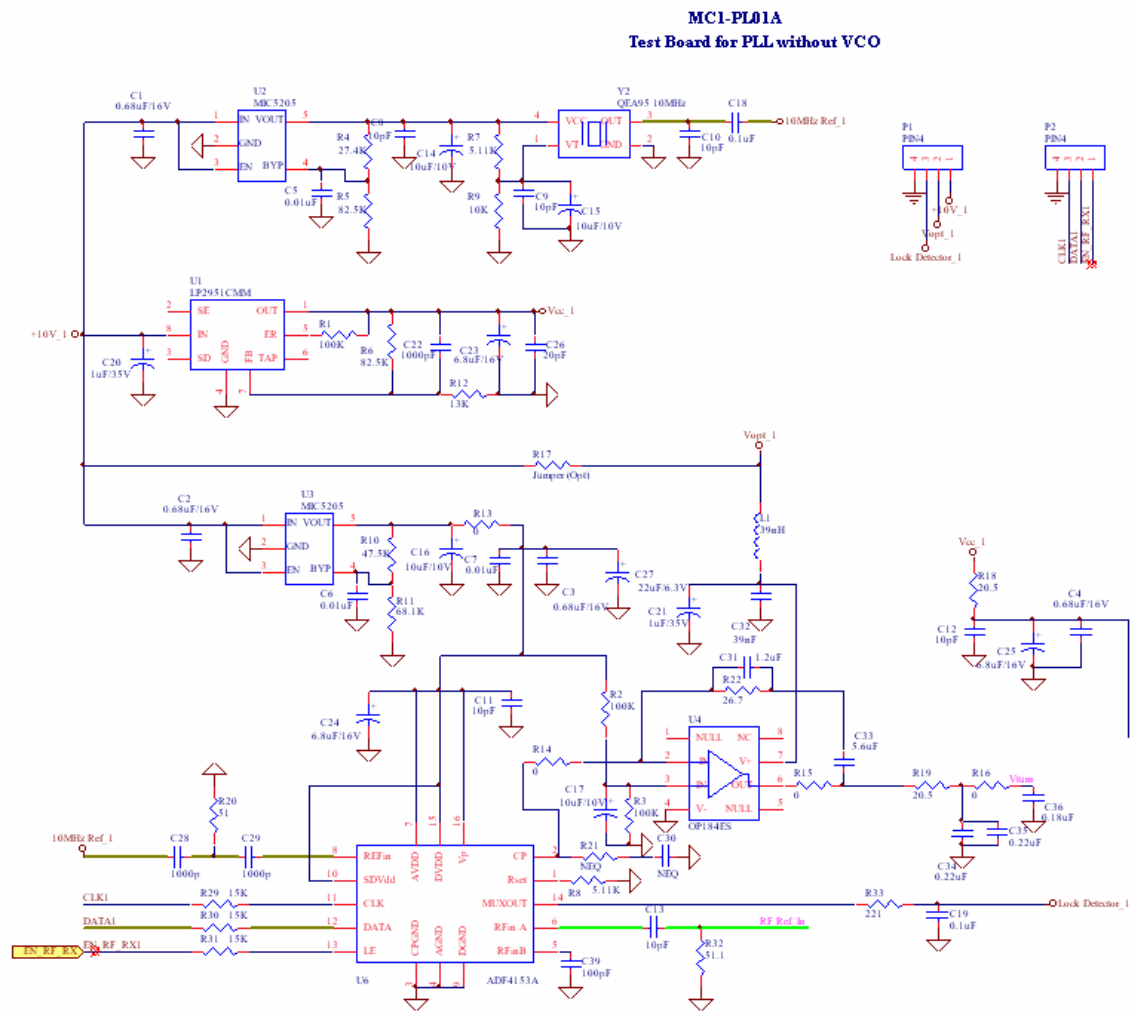
There are three kinds of synthesizer PCB cells offered. The first one is the integrated traditional PLL plus VCO such as MC1-SY01A. The second is the separated PLL and VCO, which use the common PLL cell (MC1-PL01A) combines with VCO cells such as MC1-VC05A/MC1-VC06A/MC1-VC07A and MC1-VC08A. The third is an integrated vender's PLL/VCO ones such as MC1-SY06A and MC1-SY07A.

Table 3: Synthesizer PCB Cells

Cell Name	Supported Package	Cell Size	PCB Layout	Supported Device Vendor	Supported Device Part #
MC1-SY01A	PLL: TSSOP-16 VCO: 5x5mm ² Mini-14s Mini-16	2x3		PLL: Analog devices VCO: UMS, Z-com, M/A com, etc.	PLL : ADF4110/4111/4112/ 4113; VCO: ADF4116/4117/4118; ADF4153/4154/4156. VCO : Any VCO with the supported footprint

MC1-SY02A	PLL: TSSOP-16	2x3		PLL: Analog devices	Refer to PL01A and VC05A
PLL: MC1-PL01A	VCO: LP4			VCO: Hittite	
VCO: MC1-VC05A					
MC1-SY03A	PLL: TSSOP-16	2x3		PLL: Analog devices	Refer to PL01A and VC06A
PLL: MC1-PL01A	VCO: 5x5mm ²			VCO: UMS, Z-com, M/A com, etc.	
VCO: MC1-VC06A	Mini-14s Mini-16				
MC1-SY04A	PLL: TSSOP-16	2x3		PLL: Analog devices	Refer to PL01A and VC07A
PLL: MC1-PL01A	VCO: LP5			VCO: Hittite	
VCO: MC1-VC07A					
MC1-SY05A	PLL: TSSOP-16	2x3		PLL: Analog devices	Refer to PL01A and VC08A
PLL: MC1-PL01A	VCO: LP5			VCO: Hittite	
VCO: MC1-VC08A					
MC1-SY06A	TSSOP-24	1x2		Analog device	ADF4360-X series www.analog.com
MC1-SY07A	TSSOP-24	1x2		Silicon Labs	Si4133/Si4123/Si4122/Si4113/Si4112/Si4136/Si4126 www.silabs.com

The MC1-PL01A schematic shows below:



The PCB footprint supports the local reference source, local regulators and the most popular passive and active loop filters with stuffing options. The control software can be free downloaded from PLL vendor website depends on which PLL chip is used. The same concept applies to all synthesizer PCB cells.

www.microwavecells.com