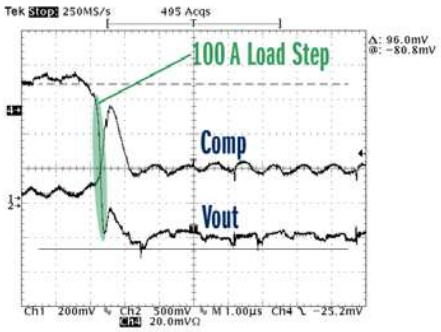
Dual-Edge & RPM Modulation Vcore Controllers

for IMVP8 Designs

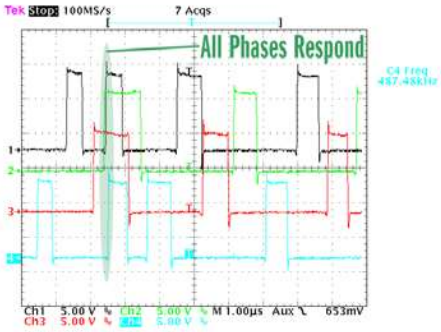
Features of Multi-Phase Dual Edge Architecture

- Current-mode dual-edge modulation for fast initial response to transient loading
- High-performance operational error amplifier
- Accurate total summing current amplifier
- High-impedance differential voltage and total current sense amplifiers
- Phase-to-phase dynamic current balancing
- “Lossless” DCR current sensing for current balancing



Features of Enhanced Single-Phase RPM Architectures

- High performance RPM control system
- Ultralow offset IOUT monitor
- Dynamic VID feed-forward
- Programmable droop gain
- Zero droop capable
- Thermal monitor
- Ultra-sonic operation
- Digitally controlled operating frequency



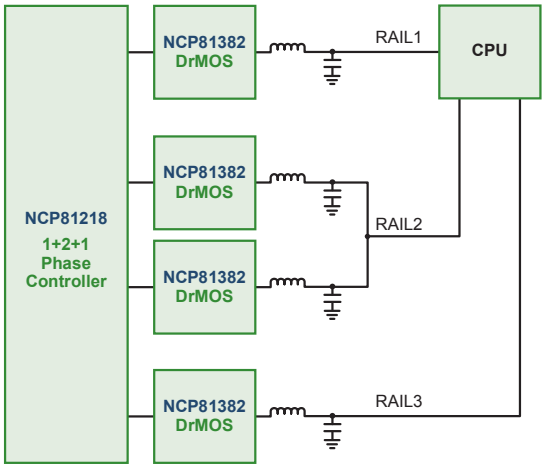
Device	Market	Function	VR Spec	Controller Architecture	Number of Rails	CPU Phases	Integrated Drivers	Interface	Package
NCP81201	Tablet	Controller	VR12.1	RPM	1	1	–	SVID	QFN-28
NCP81111	Microserver	Controller	VR12.5	Hybrid	1	1/2/3	–	SVID	QFN-32
NCP81203	Desktop	Controller	IMVP8	Dual Edge	2	3/2/1+2/1	–	SVID	QFN-52
NCP81203P	Notebook	Controller	IMVP8	Dual Edge	2	3/2/1+2/1	–	SVID	QFN-52
NCP81205	Notebook	Controller	IMVP8	Dual Edge & EN RPM	3	1/2/3+1/2/3+1	–	SVID	QFN-52
NCP81216	Ultrabook	Controller	IMVP8	Dual Edge & EN RPM	3	1+1/2+1	3 x 5 V	SVID	QFN-52
NCP81236	Ultrabook	Controller	IMVP8	Dual Edge & EN RPM	3	1/2+1+1	3 x 5 V	SVID	QFN-52
NCP81218	Ultrabook	Controller	IMVP8	Dual Edge & EN RPM	3	1+1/2+1	–	SVID	QFN-48
NCP81210	Ultrabook & Notebook	Controller	IMVP8	EN RPM	1	1	1 + FETs	SVID	QFN-40

Please contact ON Semiconductor for product datasheets.

Ultrabook Solution

NCP81218 1+2+1 Phase Controller

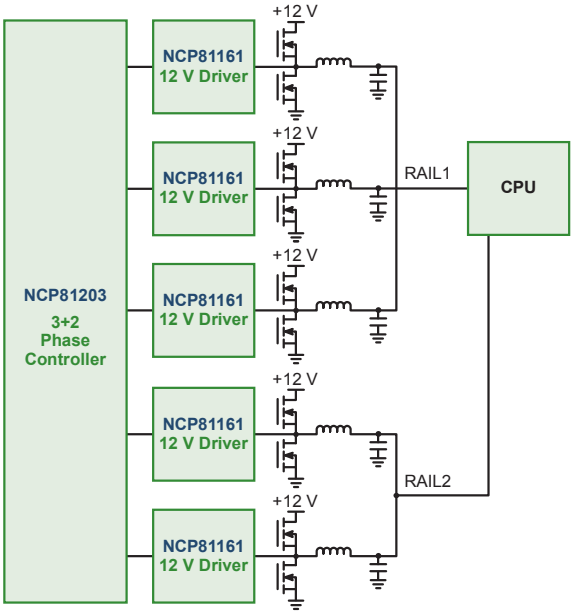
- Dual Edge & DCR current sensing for fast transient response
- EN RPM for fast transition between DCM and CCM mode
- True Differential Current Balancing
- IMVP8 compliant



Desktop Solutions

NCP81203 3+2 Phase Controller

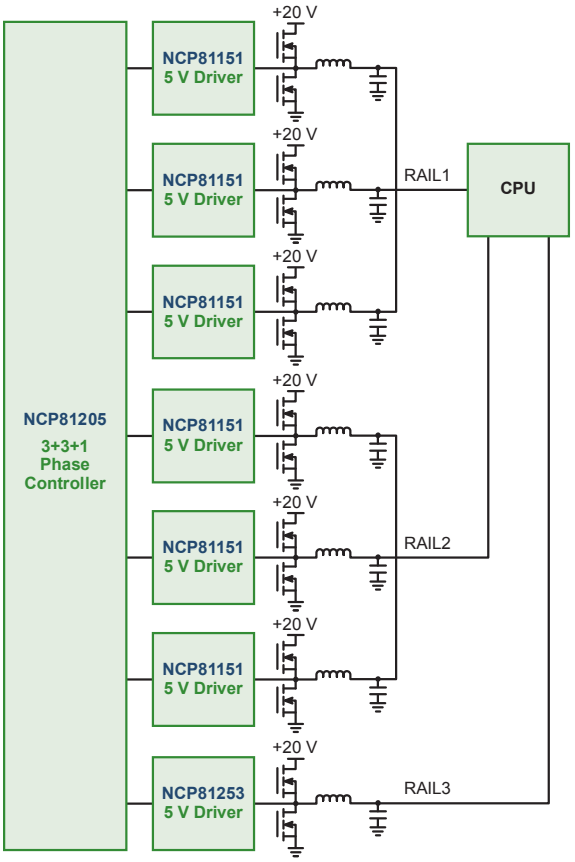
- Dual Edge for fast transient response
- Constant on-time for light load efficiency
- Supports all MLCC output capacitor solutions
- IMVP8 compliant



Notebook Solutions

NCP81205 3+3+1 Phase Controiler

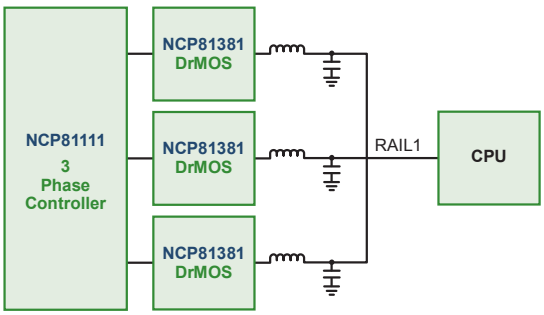
- Dual Edge & DCR current sensing for fast transient response
- EN RPM for fast transition between DCM and CCM mode
- True Differential Current Balancing
- IMVP8 compliant



Microserver Solutions

NCP81111 3-Phase Digital Controller

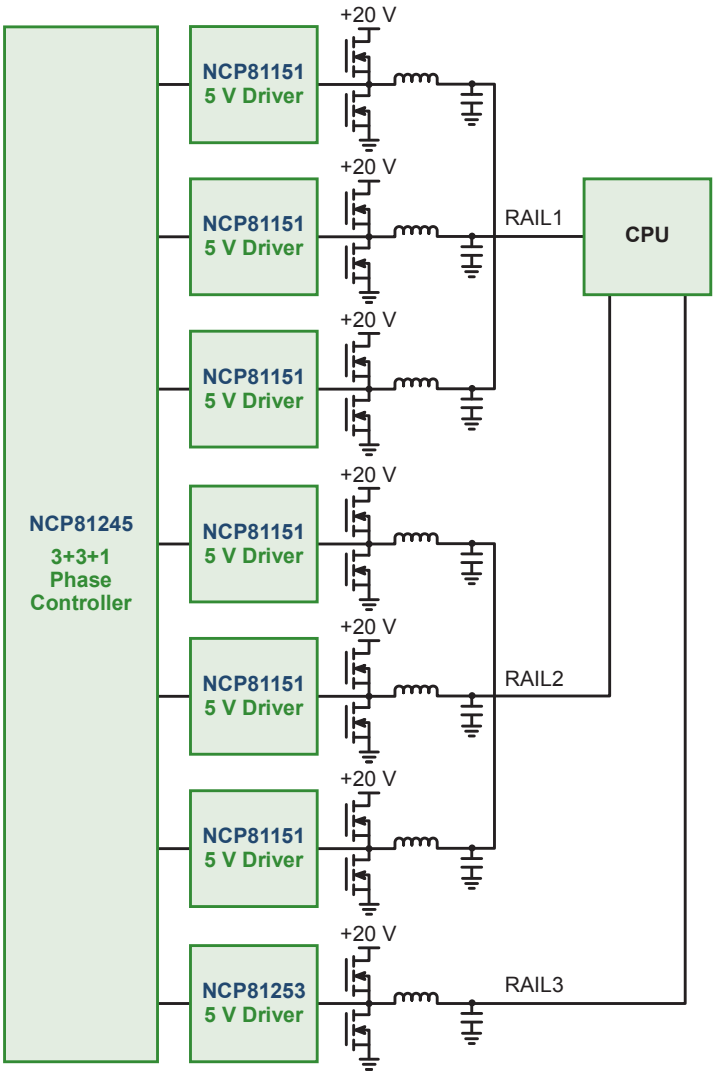
- Optimised to operate at 5MHz using DrMOS
- Can operate as general purpose I2C controller regulator
- Internal compensation using GUI interface
- VR12.5/6 compliant



IMVP8 Multiphase Controllers for Embedded Applications

NCP81245 3+3+1 Phase Controller

- Dual Edge & DCR current sensing for fast transient response
- EN RPM for fast transition between DCM and CCM mode
- True Differential Current Balancing
- IMVP8 compliant



Device	Market	Function	VR Spec	Controller Architecture	Number of Rails	CPU Phases	Integrated Drivers	Interface	Package
NCP81243	Desktop	Controller	IMVP8	Dual Edge	2	3/2/1+2/1	–	SVID	QFN-52
NCP81245	Notebook	Controller	IMVP8	Dual Edge & EN RPM	3	1/2/3+1/2/3+1	–	SVID	QFN-52
NCP81246	Ultrabook	Controller	IMVP8	Dual Edge & EN RPM	3	1+1/2+1	3 x 5 V	SVID	QFN-52
NCP81248	Ultrabook	Controller	IMVP8	Dual Edge & EN RPM	3	1+1/2+1	-	SVID	QFN-48
NCP81255	Ultrabook & Notebook	Controller	IMVP8	EN RPM	1	1	1 + FETs	SVID	QFN-40
NCP81145	Ultrabook & Notebook	5 V Driver	–	for Dual Edge Rail	–	–	–	–	DFN-8
NCP81146	Desktop	12 V Driver	–	for Dual Edge Rail	–	–	–	–	DFN-8
NCP81253	Ultrabook & Notebook	5 V Driver	–	for EN RPM rail	–	–	–	–	DFN-8