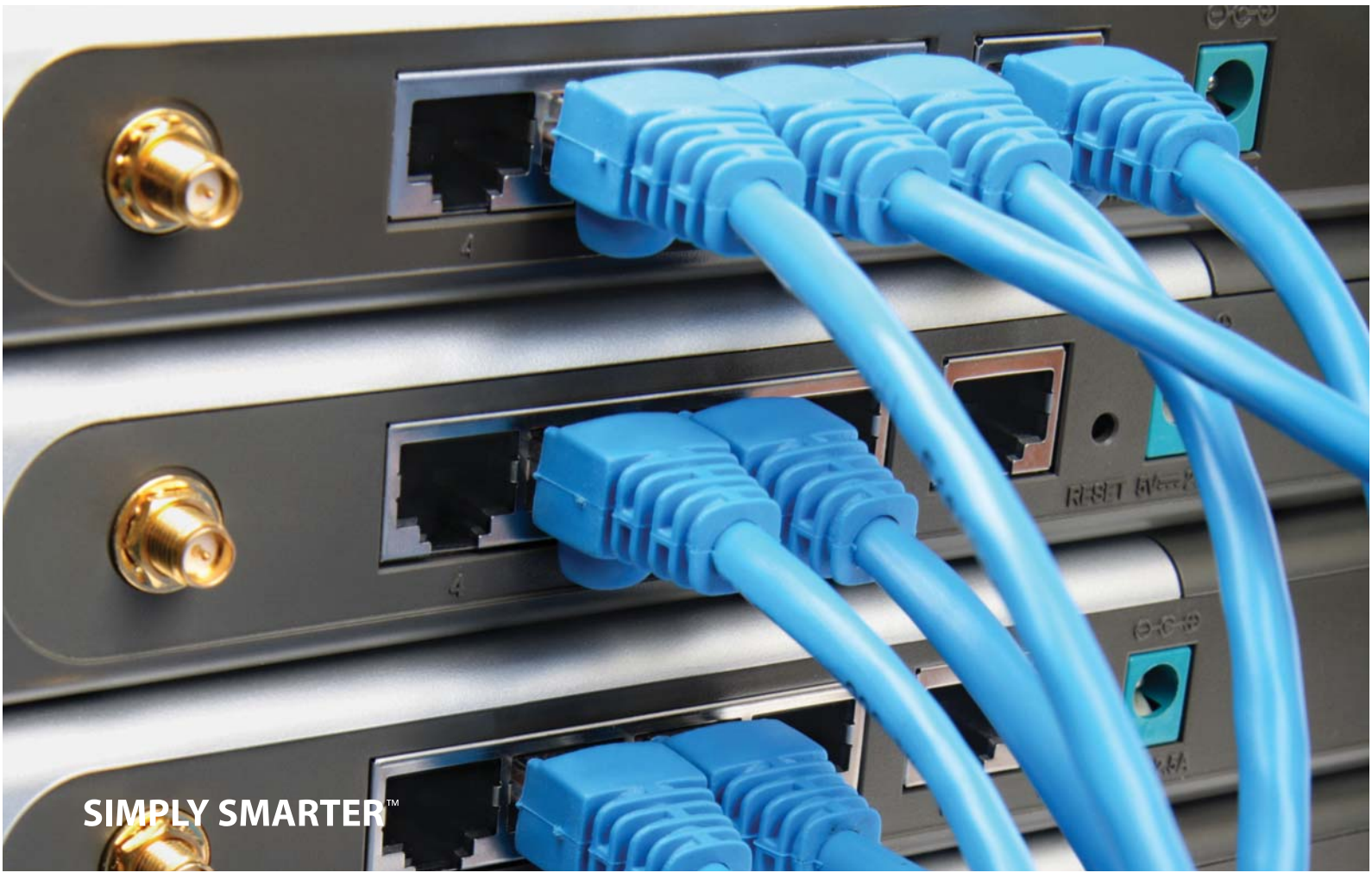
INTERSIL SELECTION GUIDE Q2 2012

COMMUNICATIONS INFRASTRUCTURE SOLUTIONS

High Speed Converters, High Speed Amplifiers,
Integrated FET Switching Regulators, PWM Controllers, LDOs,
Power Modules, Hot Swap & ORing FET Controllers, Bridge Drivers,
FET Drivers, Voltage References, Op Amps, Interface, RTCs,
Digital Potentiometers

intersil™



SIMPLY SMARTER™

Intersil's Solutions for Communications Infrastructure

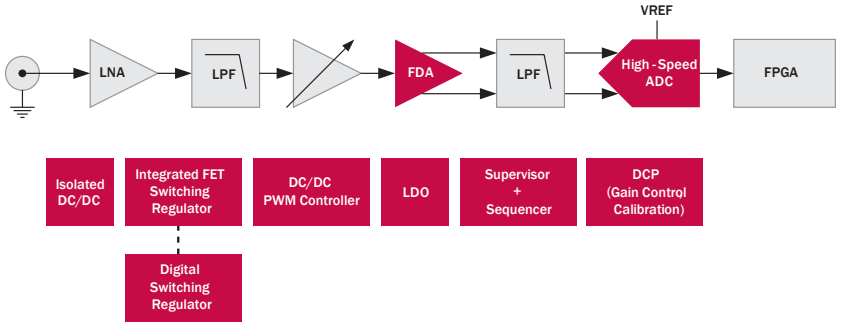
Intersil Corporation is a global technology leader specializing in the design and manufacture of high performance analog and mixed-signal semiconductors. Built on a solid foundation with many years of analog and power management experience, Intersil is committed to developing leadership solutions for the Communications Infrastructure market. Intersil's High Speed Signal Path products are built on advanced processes that enable ultra-high speed, lowest noise performance at a fraction of the power. Intersil's Power Management products offer a complete portfolio of high performance power solutions. These products range from standard LDOs to highly flexible DC-DC switching regulators to meet specific load requirements.

Communications Infrastructure equipment such broadband communication systems require high speed data converters and amplifiers for data transmission. They also use a wide variety of power demanding circuits, such as memory, ASICs, FPGAs and core processors that require high power efficiency and compact size from the DC-DC regulator. In this brochure you will find world class solutions from Intersil for your Communications customers.

Contents

Communications Infrastructure Modules

High Speed Data Acquisition

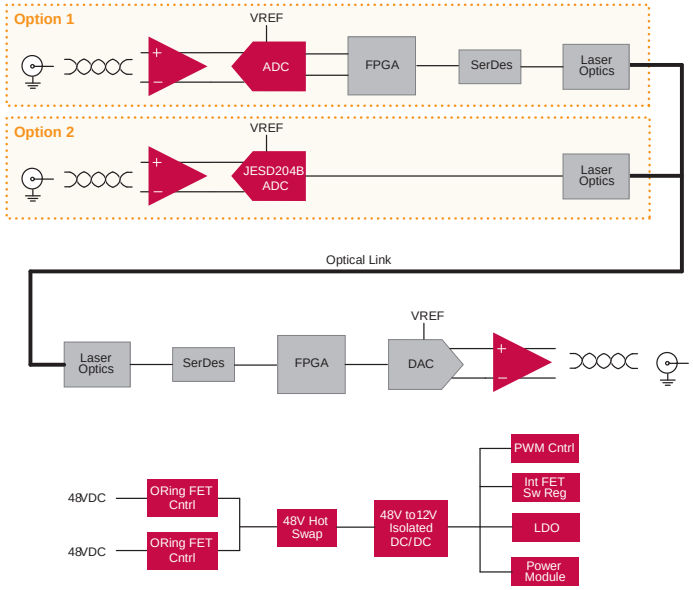


Key Products

Product Type	Part Number	Device Description
FDA	ISL55210 (page 12)	Wideband, Low-Power, Ultra-High Dynamic Range Fully Differential Amplifier
HS ADC	ISLA118P50	8-bit 500MSPS Low Power ADC
	ISLA214S50 (page 13), ISLA216S25 (page 14)	14-bit 500MSPS & 16-bit 250MSPS JESD204B High Speed Serial Output ADCs
	ISLA214P50, ISLA212P50, ISLA216P25	14- and 12-bit 500MSPS & 16-bit 250MSPS High Performance ADCs
LDO	ISL9016	6.5V Input Dual Low Noise High PSRR 150mA
	ISL80136 (page 5)	40V Input 150mA LDO
DCP	ISL22444	Quad Digitally Controlled Potentiometer (XDCP™), Low Noise, Low Power, SPI® Bus, 256 Taps

Product Type	Part Number	Device Description
VREF	ISL21090	High Voltage Input (36V) Low Noise, Low Power Precision Bandgap Voltage Reference
	ISL21009	High Voltage Input (16V) Low Power Precision FGA Voltage Reference
	ISL21010	Micro Power Bandgap Votlage Reference
Switching Regulator	ISL8016 (page 7)	6A High Efficiency, Low I_{CC} Sync Buck
	ZL2101	Digital 6A Switching Regulator with Auto Compensation
PWM Controller	ISL9443 (page 6)	PWM w/ Diode Emulation Triple 25A Sync Buck
Isolated DC/DC	ISL6726 (page 6)	Active Clamp Forward PWM Controller
Supervisor	ISL88705	Dual Voltage Monitor
Sequencer	ISL6123	4 Ch Power Sequencer

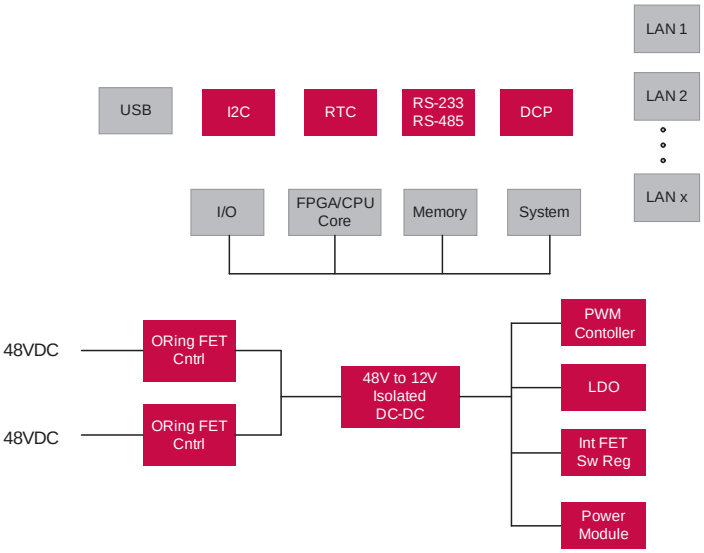
Wired Networking



Key Products

Product Type	Part Number	Device Description
Amplifier	ISL55210 (page 12)	Wideband, Low-Power, Ultra-High Dynamic Range Fully Differential Amplifier
ADC	ISLA224S25 (page 14)	Dual Channel 14-bit 250MSPS JESD204B High Speed Serial Output ADC
	KAD5612P-25	Dual Channel 12-bit 250MSPS Ultra-Low Power ADC
VREF	ISL21090	High Voltage Input (36V) Low Noise, Low Power Precision Bandgap Voltage Reference
	ISL21009	High Voltage Input (16V) Low Power Precision FGA Voltage Reference
	ISL21010	Micro Power Bandgap Votlage Reference
ORing	ISL6144	High Voltage ORing FET Controller
	ISL6146 (page 8)	High Power ORing FET Controller
Hot-Swap	ISL6140 (page 8)	-48V Hot Plug Controller
	ISL6185	USB Hot Plug Controller
Isolated DC/DC	ISL6726 (page 6)	Active Clamp Forward PWM Controller
PWM Controller	ISL9444 (page 6)	Triple 25A Sync Buck
	ZL6100 (page 11)	Digital Adaptive Current Sharing DC/DC Controller
Switching Regulator	ISL8036	Dual 3A High Efficiency Sync Buck
	ZL2106	6A Digital DC/DC Sync Buck Switching Regulator
LDO	ISL80102 (page 5)	6V Input 2A LDO
Power Module	ISL8200M (page 10)	10A Current Sharing Power Module
	ZL9117M (page 10)	Digital 17A DC/DC Power Module

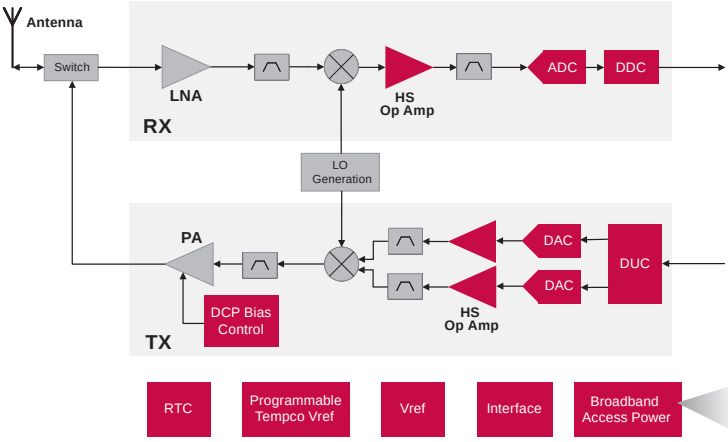
Ethernet Switches

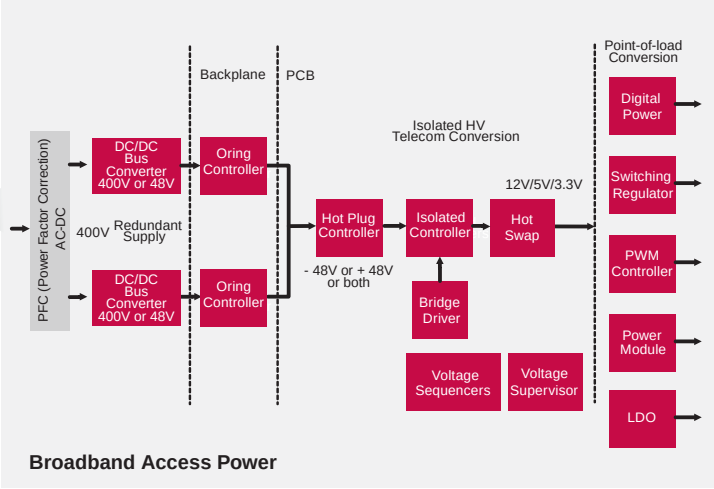


Key Products

Product Type	Part Number	Device Description
I^2C	ISL33001	I^2C Bus Buffer with Rise Time Accelerators
RTC	ISL12020M, ISL12022M	3:1 RTC + Temp Sensor + Crystal, 5ppm Temp Accuracy
RS-232/485	ISL3232E	±15kV ESD Protected, +2.7V to +5.5V, 150nA, 250kbps, RS-232 Transmitters/Receivers
	ISL4243E	±15kV ESD Protected, +2.7V to +5.5V, 10nA, 250kbps, RS-232 Transmitters/Receivers
DCP	ISL22316, ISL22326, ISL22346	128 Tap, 125°C Non Volatile, Low Noise, Low Power, I^2C Interface, Shutdown
ORing	ISL6144	High Voltage ORing FET Controller
	ISL6146 (page 8)	High Power ORing FET Controller
Isolated DC/DC	ISL6721A	Single Ended PWM Controller
LDO	ISL80101 (page 5)	1A LDO
	ISL80138 (page 5)	HV 150mA LDO
Switching Regulator	ISL85033 (page 7)	Wide V_{IN} 3A/3A Regulator
	ZL2106	Digital 6A DC/DC Switching Regulator
Power Module	ISL8200M (page 10)	10A Current Sharing Power Module
	ZL9117M (page 10)	Digital 17A DC/DC Power Module
PWM Controller	ISL9443 (page 6)	25A 3Ch PWM w/ Diode Emulation

Broadband Communication





Broadband Access Power

Key Products

Product Type	Part Number	Device Description
HS Op Amp	ISL55210, ISL55211 (page 12)	Wideband Fully Differential Amplifier
ADC	ISLA224S25, ISLA224S20 (page 14)	Dual 14-bit 250 & 200MSPS JESD204B High Speed Serial Output ADC
	ISLA214S50 (page 13)	14-bit 500MSPS JESD204B High Speed Serial Output ADC
	ISLA214P25, ISLA214P20, ISLA214P13	14-bit 250, 200, 130 MSPS High Performance ADC
	ISLA224P25, ISLA224P20, ISLA224P13	Dual 14-bit 250, 200, and 130 MSPS High Performance ADCs
	ISLA216P25, ISLA216P20, ISLA216P13	16-bit 250, 200, 130 MSPS High Performance ADC
	ISLA214P50, ISLA212P50	14- and 12-bit 500MSPS High Performance ADCs
	ISLA112P50, ISLA110P50	12- and 10-bit 500MSPS Low Power ADCs
DDC	ISL5216	4 Channel Programmable Digital Down Converter
DCP	ISL22313, ISL22323, ISL22343, ISL22316, ISL22326, ISL22346	Single/Dual/Quad Low Noise, Low Power I²C Bus Digitally Controlled Potentiometer
DAC	ISL5827, ISL5829, ISL5857, ISL5861	12-bit, +3.3V, 210/130/260MSPS, High Speed D/A Converter
	ISL5927, ISL5929, ISL5957, ISL5961	14-Bit, +3.3V, 210/130/260MSPS, High Speed D/A Converter
DUC	ISL5217	4 Channel Programmable Digital Up Converter
RTC	ISL12022M, ISL12020M, ISL12022MA	Real Time Clock Module with Embedded Crystal
	ISL12022, ISL12023	Low Power RTC with Battery-Backed SRAM and Embedded Temp Compensation

Product Type	Part Number	Device Description
VREF	ISL21090	High Voltage Input (36V) Low Noise, Low Power Precision Bandgap Voltage Reference
	ISL21009	High Voltage Input (16V) Low Power Precision FGA Voltage Reference
	ISL21010	Micro Power Bandgap Votlage Reference
Interface	ISL4221E, ISL3232E	+2.7V to +5.5V, 150nA, 250kbps, RS-232 Transmitters/Receivers
	ISL3175E	3.3V Half Duplex, 500kbps RS-485/ RS-422 Transceiver
ORing	ISL6144	High Voltage ORing FET Controller
	ISL6146 (page 8)	High Power ORing FET Controller
Hot Plug/ Hot Swap	ISL6115A	12V Power Distribution Controller
	ISL6185	USB Hot Plug Controller
	ISL6140 (page 8)	-48V Hot Plug Controller
Isolated Controller	ISL6754	ZVS Full Bridge PWM Controller
Bridge Driver	HIP2100	100V/2A Half Bridge Driver
	HIP2120	100V/2A High Frequency Half Bridge Driver with Adjustable Dead Time
Sequencers	ISL6123	4 Channel Power Sequencer
Supervisor	ISL88705	Dual Voltage Monitor
Power Module	ISL8200M (page 10)	10A Current Sharing Power Module
	ZL9117M (page 10)	Digital 17A DC/DC Power Module
LDO	ISL80103 (page 5)	High Performance 3A LDO
Switching Regulator	ISL95210	10A Synch Buck Regulator
PWM Controller	ISL8126	Dual n-Phase Buck PWM Controller
	ZL6105 (page 11)	Adaptive Digital DC/DC Controller with Auto Compensation

High Voltage LDO: ISL80136, ISL80138

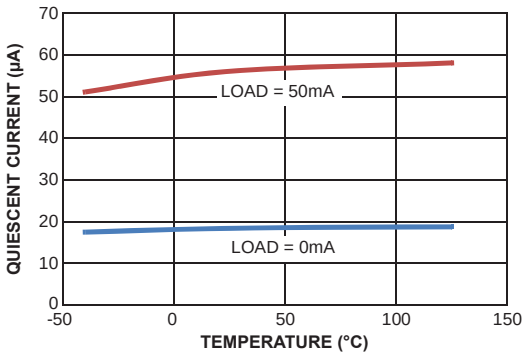
40V Input Low Quiescent Current LDOs

The ISL80136 and ISL80138 are high voltage linear regulators ideally suited for "always-on" and "keep alive" applications while consuming only 18µA of quiescent current at no load.

Key Features

- 6V to 40V Input Operating Voltage Range
- Ultra Low Quiescent Current
- Withstands 45V Peaks
- 5µA Shutdown Current (max)
- 50mA (ISL80136) or 150mA (ISL80138) Versions
- Low Drop Out 120mV at 50mA and 295mV at 150mA

Ultra Low Quiescent Current (18µA typ)



QUIESCENT CURRENT vs LOAD CURRENT (AT UNITY GAIN), V_{IN} = 14V

Features	Benefits
Wide input operating voltage	Good fit for 40V max industrial applications
Ultra low quiescent current	Increases battery life in always-on applications
6V min input voltage	No additional caps required to ride through brown out conditions
Leaded package	No need for x-ray, pins can be visually inspected

Evalboard Available!

High Current LDO: ISL80101, ISL80102, ISL80103

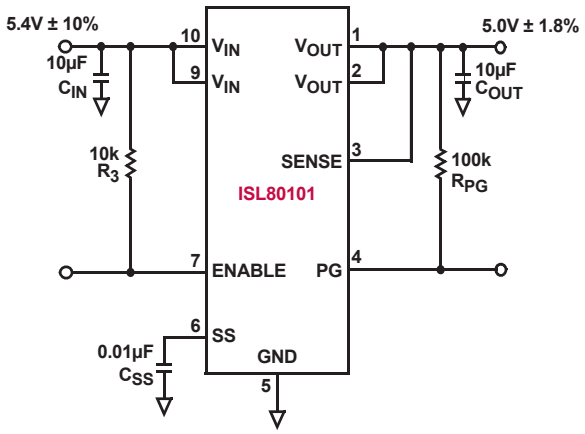
High Performance 1A/2A/3A LDOs

New family of 2.2V to 6V V_{IN}, single output LDOs capable of 1A, 2A, and 3A current drive

Key Features

- Designed for Fast Load Transient Response
- Tight ±1.8% V_{OUT} Accuracy Over -40°C to 125°C
- 62dB PSRR @120Hz, 55dB @1kHz
- <80µVrms Low Output Noise From 1kHz to 300kHz
- Less than 1µA Shutdown Current
- 4 Industry-standard Fixed & Adjustable V_{OUT} Options: 1.8V, 2.5V, 3.3V, 5V
- P_{GOOD}, Enable, Short-Circuit & Reverse Current Protection, & Over-Temperature Shutdown Capability

Typical Application Circuit



Applications

- DSP, FPGA and µP Core Power Supplies
- Noise-Sensitive Instrumentation Systems
- Post Regulation of Switched Mode Power Supplies
- Telecommunications and Networking Equipment
- Servers
- Hard Disk Drivers (HD/HDD)

PWM CONTROLLER

Evalboard Available!

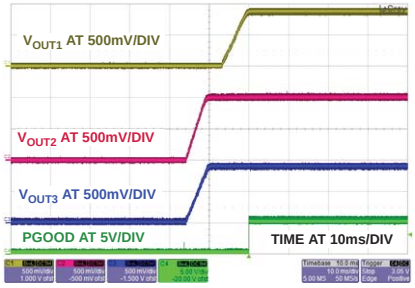
Triple Output PWM Controllers: ISL9443, ISL9444

Triple 180° Out of Phase, Synchronous Step Down PWM Controller

Key Features

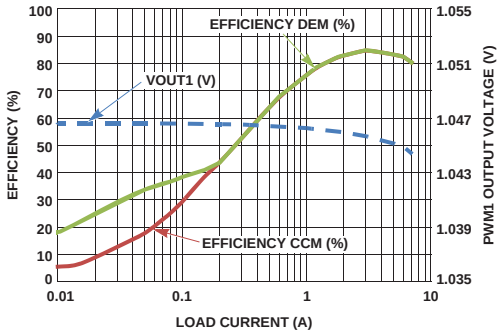
- Wide Input Voltage Range: 4.5V to 28V
- Three Integrated Synchronous Buck PWM Controllers
  - Internal Bootstrap Diodes
  - Independent Programmable Output Voltage
  - Independent Power Good indicators, Soft-Starting and Tracking
- Light Load Efficiency (Diode Emulation Mode) Enhancement
- Programmable Frequency: 200KHz to 1200kHz
- Out-of-Phase Switching (0°/180°/0°)
- Overcurrent, Overvoltage, Over-Temperature Protection

Independent Voltage Tracking



PGOOD RISING WAVEFORM

High Efficiency at Light Load



PWM1 EFFICIENCY AND LOAD REGULATION

Evalboard Available!

Single-Ended PWM Controller: ISL6726

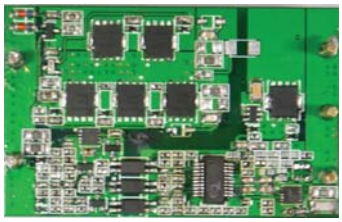
Highly-Integrated Active Clamp Forward PWM Controller

Key Features

- Supports N-channel and P-channel Active Clamp FETS
- Supports Single-Ended Synchronouse Rectifier Topology
- Adjustable Conduction Dead-Time Between Outputs
- MAX and MIN Duty Cycle Clamping
- Adjustable Soft-Start/Soft-Stop
- Bi-Directional Synchronization, 180º Phase Shift
- Average and Cycle-by-Cycle Current Limit
- Adjustable Current Limit Set-Point
- On/Off Enable Control with Low Power SLEEP Mode

200W ACF DC/DC Converter Reference Design

TOP VIEW OF ISL6726EVAL1Z (ACTUAL SIZE: 40x60x16mm)



BOTTOM VIEW OF ISL6726EVAL1Z (ACTUAL SIZE: 40x60x16mm)

- Intersil ICs
  - ISL6726 (Active Clamp Forward PWM Controller)
  - ISL6719 (100V Linear Bias Supply)
  - ISL89160 (Power MOSFET Driver)
- Topology: Current Mode ACF With SR
- Specification
  - 36V~75V Input
  - 5V/40A Output
  - Efficiency>92%
  - Output ripple<200mV

▶ **For more Information, see app note: AN1628**

Evalboard Available!

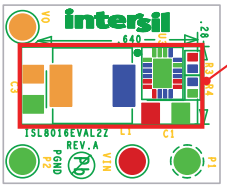
Single Output Buck Regulators: ISL8016

High Efficiency 6A Int. FET Buck Regulator

Key Features

- Input Voltage Range: 2.7V to 5.5V
- High Efficiency Over Full Load Range
  - PFM Mode for Improved Efficiency at Light Loads - 97% Peak Efficiency
  - 6A Guaranteed Output Current
- Space Saving and Fewer External Components
  - 1MHz Fixed & 4MHz Sync Freq Gives Small Inductor
  - Integrated High and Low Side MOSFET
  - Internal Compensation
  - 20 Ld 3x4 QFN
  - Small Overall Solution Size
  - Reduce Size of Inductor
- Design Flexibility
  - 100% Duty Cycle ($V_{IN} = V_{OUT}$)
  - Sync IN and Sync Out for Master Slave
  - ±10% Voltage Margining
  - Internal (1ms) or External Soft-start
  - Current Sharing Capability (Multiple IC's)

High Power Density, Small Solution Size



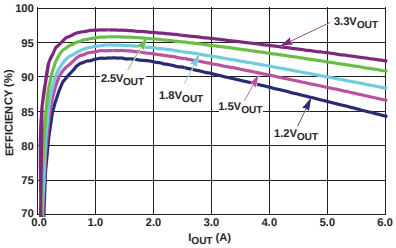
TOP COMPONENTS

0.64"x0.28"
Solution Size

ISL8016EVAL2Z
(ACTUAL SIZE)

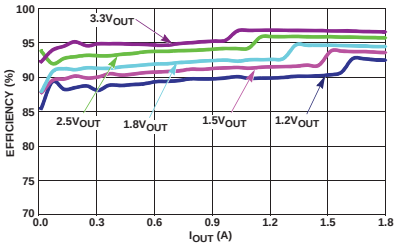
High Efficiency Over Full Load Range

Up to 97% efficiency



EFFICIENCY vs LOAD (1MHz $5V_{IN}$ PWM)

PFM mode for improved efficiency at light loads



EFFICIENCY vs LOAD (1MHz 5VIN PFM)

Evalboard Available!

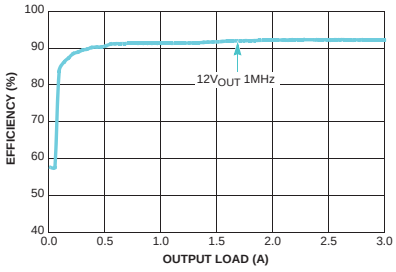
Multiple Output Integrated FET Buck Regulators: ISL85033

Dual Output, Standard Buck Regulator with Integrated High-side MOSFETs

Key Features

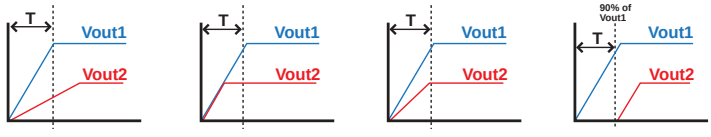
- 3A/3A Guaranteed Output Current
- 180° Out-of-Phase Operation or In-Phase Operation
- V_{IN} Range: 4.5V to 28V
- Output Current Sharing Capability - Tie 2 Ch to Get 6A
- Fsw: 500kHz (default) or 300kHz to 2MHz Adj.
- Synchronization to External Clock – 300kHz to 2MHz
- Independent EN and P_{GOOD} for Both Channels

High Efficiency Across Wide Load Range



EFFICIENCY vs LOAD, V_{IN} = 28V, T_A = +25°C

Simple Settings for Sequencing and Tracking



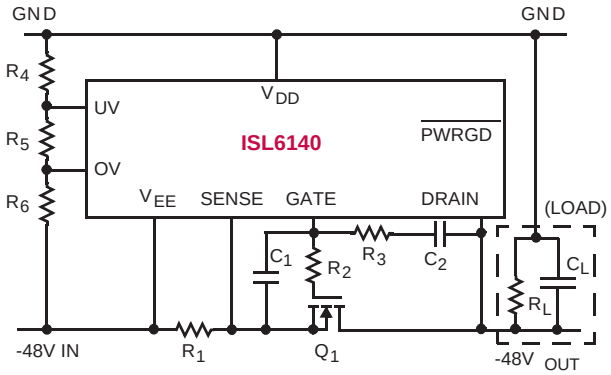
-48V Hot Swap Controller: ISL6140

Low Side Hot Swap Controller with an External NFET Switch

Key Features

- Controlled Voltages: -10V to -80V (-100V absolute max. rating)
- Bias Voltage: -10V to -80V
- Current Regulation Circuit: Low Ohmic Sense Resistor
- Programmable Inrush Current
- Programmable Electronic Circuit Breaker (Over-Current Shutdown)
- Programmable Over-Voltage Protection
- Programmable Under-Voltage Lockout
- PWRGD Control Output Options: Active Low ISL6140, Active High ISL6150
- Package: 8 Ld SOIC

Simplified Block Diagram



Applications

- Telecom Systems at -48V
- VoIP Servers
- +24V Wireless Base Station Power
- Negative Power Supply Control

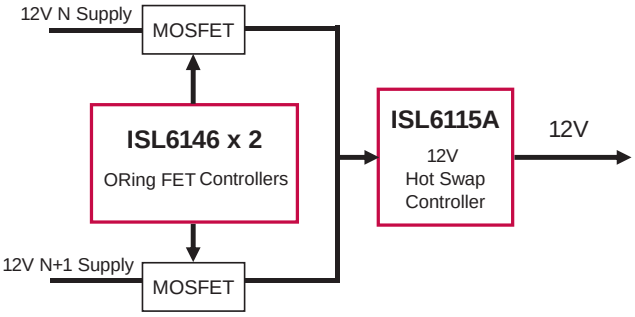
ORing FET Controller: ISL6146

High Power ORing FET Controller

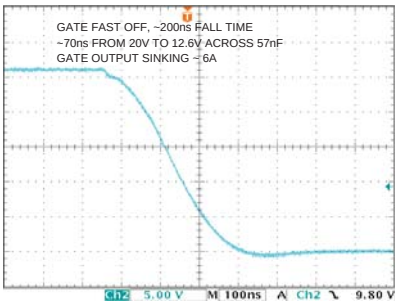
Key Features

- ORing Down to 1V and Up to 20V with ISL6146A, ISL6146B
- V_{IN} Hot Swap Transient Protection Rating to +24V
- High Speed Comparator Provides Fast <0.3µs Turn-off in Response to Shorts on Sourcing Supply
- Fastest Reverse Current Fault Isolation with 6A Turn-off Current
- Very Smooth Switching Transition
- Internal Charge Pump to Drive N-channel MOSFET

N+1 ORing System Protection



Fast FET Gate Turn Off



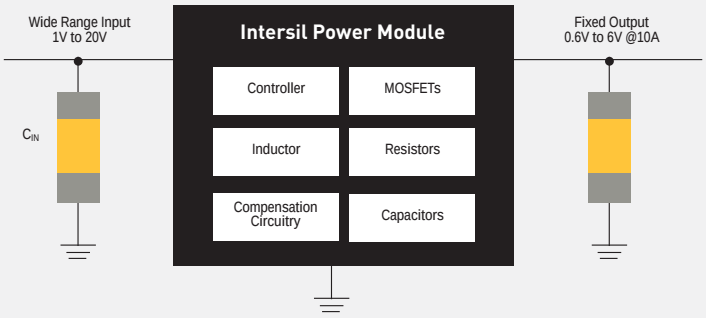
ISL6146 GATE HIGH CURRENT PULL-DOWN

Power Modules

Intersil's Power Modules Advantages:

❶ Highly Integrated Power Solution

Intersil Power Modules are highly integrated, ready-to-design solutions which include PWM controllers, drivers, MOSFETs, most passive components and various power management support ICs (eliminating the need to design with and layout up to 80 different components).



❷ Leading Power Technology

- Efficiency >90%
- Latest power management features (Freq. Sync, Current Sharing, etc)
- Pin-to-pin compatible for changing power requirements
- Easy to use digital interface (ZL9101M & ZL9117M)

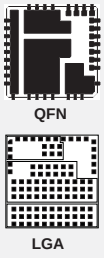
❸ QFN Package Technology

Designed Specifically to Enhance the Power Modules Solution

Best-in-Class Thermal Performance

- ✓ Thermal molding compound allows for even heat distribution
- ✓ Large copper islands (V_{IN}, V_{OUT}, PHASE, GND) optimize heat dissipation
- ✓ Theta J_A = 11.5°C/W (15% better than LGA package)
- ✓ Operates at full 10A load up to 80°C (LGA's full 10A load is at 40°C)

Easier Design



QFN vs LGA

- ✓ All QFN pins are accessible for testing and probing
- ✓ QFN is easier to solder and greatly reduces "lift off"
- ✓ QFN better endures shock and vibration

Power Modules

Device	Device Description	V_{IN} (range) (V)	V_{OUT} (range) (V)	I_{OUT} (A)	Current Share	Multi-phase	P_{GOOD}	Enable	Ambient Temp Range (°C)	Load Fault Protection	Peak Efficiency (%)	Package (mm)
ISL8200M	Complete Current Share 10A DC/DC Power Module	3 - 20	0.6 - 6	10	Y	Y	Y	Y	-40 to +85	Y	93	23 Ld QFN (15 x 15 x 2.2)
					Up to 6 phase single output with current balancing and sharing							
ISL8201M	10A, High Efficiency DC/DC Module	1 - 20	0.6 - 5	10	N	N	N	Y	-40 to +85	Y	95	15 Ld QFN (15 x 15 x 3.5)
ISL8204M	High Efficiency DC/DC Power Module	1 - 20	0.6 - 6	4	N	N	N	Y	-40 to +85	Y	95	15 Ld QFN (15 x 15 x 3.5)
ISL8206M	Complete High Efficiency DC/DC Power Module	1 - 20	0.6 - 6	6	N	N	N	Y	-40 to +85	Y	95	15 Ld QFN (15 x 15 x 3.5)
ISL8225M (Coming soon)	Dual 15A/15A High Efficiency Power Module	3 - 20	0.6 - 6	30	Y	Y	Y	Y	-40 to +85	Y	94	26 Ld QFN (17 x 17 x 7.5)
ZL9101M	Digital DC/DC PMBus 12A Module	4.5 - 13.2	0.54 - 3.6	12	Y	Y	Y	Y	-40 to +85	Y	95	21 Ld QFN (15 x 15 x 3.5)
ZL9117M	Digital DC/DC PMBus 17A Module	4.5 - 13.2	0.54 - 3.6	17	Y	Y	Y	Y	-40 to +85	Y	95	21 Ld QFN (15 x 15 x 3.5)

Evalboard Available!

10A Current Sharing Module: ISL8200M

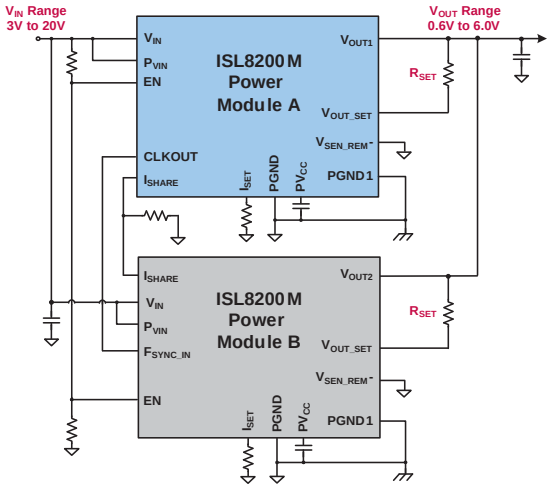
Complete Current Share, Low Profile 10A DC/DC Power Module

Key Features

- Switch Mode Power Supply in One Package
- Patented Current Share Architecture Reduces Layout Sensitivity When Modules are Paralleled
- Programmable Phase Shift (1 to 6 phase)
- Extremely Low Profile (2.2mm height)
- Input Voltage Range +3.0V to +20V at 10A, Current Share Up to 60A
- A Single Resistor Sets V_{OUT} from +0.6V to +6V
- Output Overvoltage, Overcurrent and Over-Temperature, Built-in Protection and Undervoltage Indication

Current Sharing Up to 6-Phases

Simplified current sharing for two ISL8200Ms for 20A output.



Extremely Low Profile

Evalboard Available!

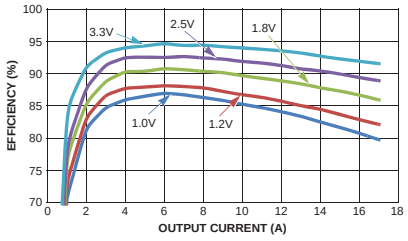
17A Digital Power Module: ZL9117M

Digital DC/DC PMBus 17A Power Module

Key Features

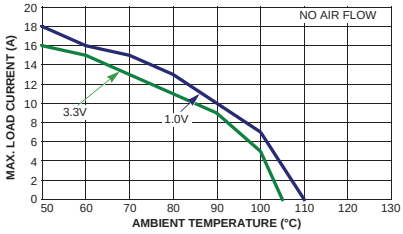
- Industry Best I_{OUT} vs. Ambient Temp Derating
- High Efficiency Up To 94%
- Best In Class Power Density (78W/cm3)
- Easy Design Configurability and Power Monitoring with Zilker Labs PowerNavigator™ Graphical Interface
- Built In Auto-Compensation Filter, Programmable Start-Up Delays, OCP, Output Voltage Tracking, Pre-Bias Output Start-Up
- Wide Input (4.5V to 13.2V) and Output Voltage (0.6V to 3.6V) Ranges
- 21 Ld 15mm x 15mm QFN

High Efficiency



EFFICIENCY, V_{IN} = 5V, FOR VARIOUS OUTPUT VOLTAGES LISTED

Industry's Best I_{OUT} vs Ambient Temperature

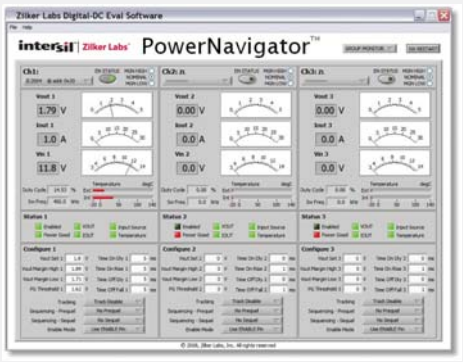


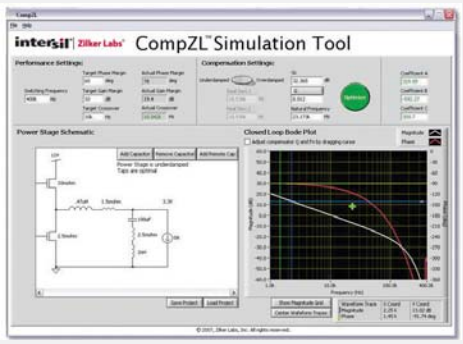
DERATING CURVE, $5V_{IN}$, FOR VARIOUS OUTPUT VOLTAGES LISTED

Digital Power

Intersil's Digital Power Advantages:

❶ Easy-to-Use Development Tools

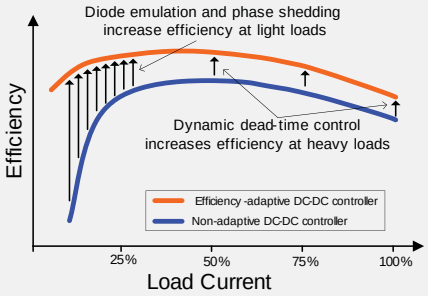




❷ High Efficiency and Fast Transient Response

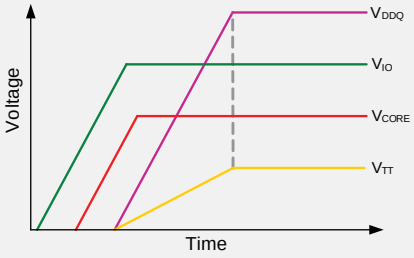
Power Conversion Benefits

- High V_{OUT} accuracy across line, load and temperature
- High current >40A per phase
- Active current sharing with phase add/drop



Power Management Benefits

- Voltage tracking (50% / 100%)
- Autonomous output sequencing
- Adjustable voltage margining (5% / 10%)



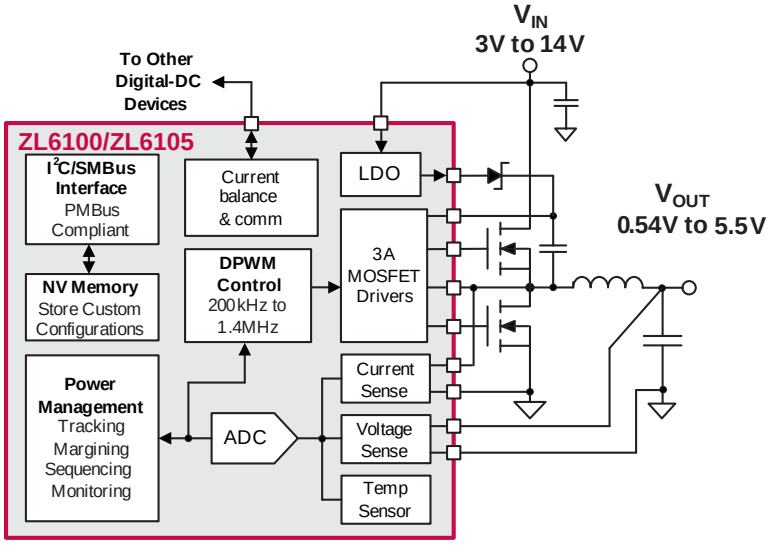
Evalboard Available!

Digital DC-DC Controller

Key Features

- Single-phase DC-DC Controller
  - 1% V_{OUT} accuracy
  - Parallel operation up to 8 devices
- Wide Range Single Rail Input
  - Eliminates external LDO
- Integrated Power Management
- Adaptive Algorithms
  - Improved efficiency/stability
- SMBus / PMBus Compliant
  - Communicate with host controller
- With Integrated Current Sharing
  - ZL6100
- With Auto Compensation
  - ZL6105

Integrated Power Management



HIGH SPEED AMPLIFIER

Evalboard Available!

Fully Differential Amplifiers: ISL55210, ISL55211

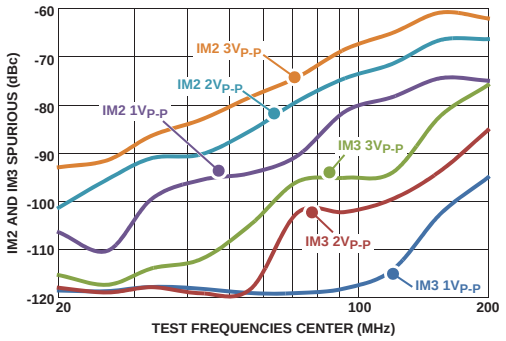
Wideband, Low-Power, Ultra-High Dynamic Range Differential Amplifier

Key Features

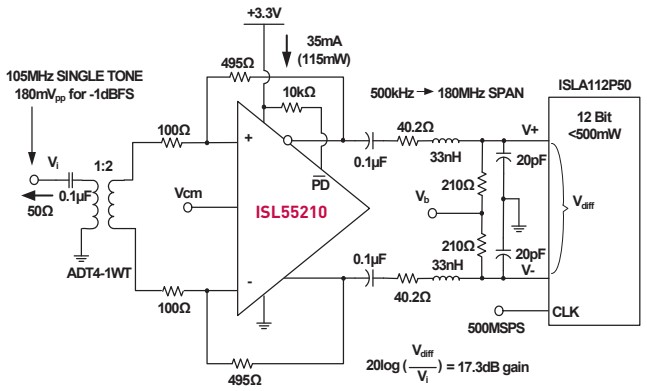
- Gain Bandwidth Product..... 4.0HGz
- Input Voltage Noise.....0.85nV/√(Hz)
- Differential Slew Rate 5,600V/µs
- $2V_{P-P}$, 2-tone IM3 (200Ω) 100MHz..... -109dBc
- Supply Voltage Range .....3.0V to 4.2V
- Quiescent Power (3.3V supply)..... 115mW

Ultra-Low Distortion

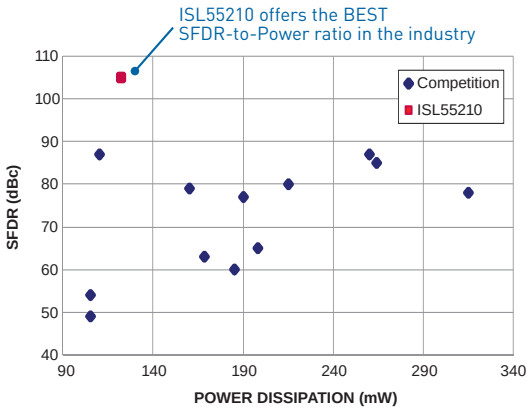
Suitable for driving high speed ADCs in 1st and higher Nyquist zone applications



Typical Application Circuit



World Best SFDR at Lowest Power

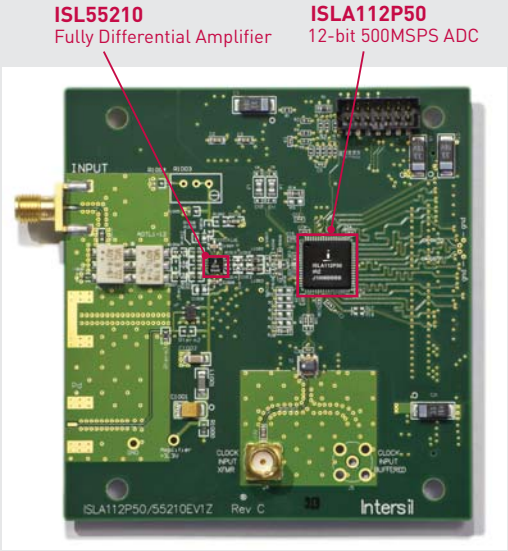


Ultra Low Power Broadband 8- to 14-bit Data Acquisition Platform

Seamlessly evaluate the performance of the entire signal chain (Amplifier/Filter/ADC) in your application.

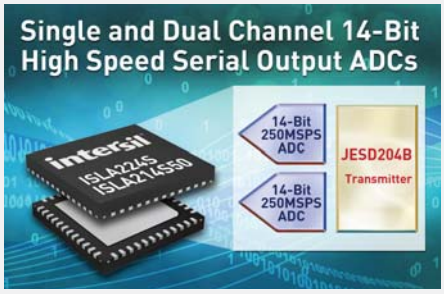
- Default Configuration includes ISL55210 & ISLA112P50
- Broadband Interstage Filter (F_{IN} = 100kHz to 100MHz)
- Full-scale: $200mV_{PP}$ (-10dBm)
- SNR > 65dBFS, SFDR > 80dBc, F_S = 200 to 500MSPS
- Use with KMB Motherboards and Free Konverter ADC Evaluation Software

▶ **For more info: intersil.com/converters/isla112P50-55210EV1Z**



ISLA112P50/55210EV1Z Evaluation Daughter Board

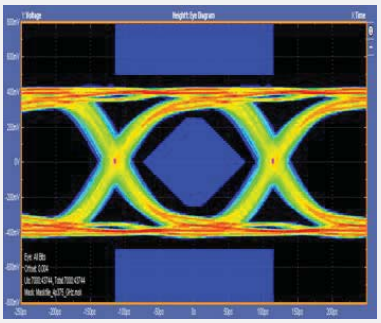
Advantages of JESD204B Serial Outputs



JESD204B High Speed Serial Output ADC Features and Benefits

- **Streamlined Output Interface**
  - True pin-compatibility, facilitating design re-use that reduces design time and cost
  - Fewer device pins, saving PCB area
  - Fewer traces to route, saving PCB area while reducing design time and cost
  - Embedded clock, eliminating clock routing and setup & hold time constraints
- **Deterministic Latency**
  - Constant device and serializer latency, providing a consistent period from ADC sample clock to serial output
  - Multi-chip time alignment, enabling synchronization of multiple ADC channels
- **Harmonic Clocking**
  - Integer division of clock, simplifying system design

Eye Diagram for 14-bit 250MSPS ADC Running on One Lane (4.375Gbps)



Eye Diagram at 4.375Gb/s (14-bit, 250MSPS)

JESD204B Device	Resolution	Max Sample Rate
ISLA216S25	16-Bit	250 MSPS
ISLA216S20	16-Bit	200 MSPS
ISLA216S13	16-Bit	130 MSPS
ISLA214S50	14-Bit	500 MSPS
ISLA224S25	Dual 14-Bit	250 MSPS
ISLA224S20	Dual 14-Bit	200 MSPS

JESD204B 14-Bit 500MSPS ADC: ISLA214S50

Fastest 14-bit ADC with JESD204B High Speed Serial Outputs

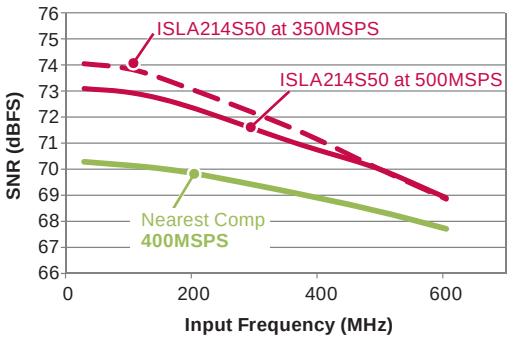
Key Features

- SNR: 73dBFS, SFDR: 83dBc, f_S=500MSPS
- Power Consumption at 500MSPS: 1060mW
- JESD204B High Speed Serial Outputs
  - Supports 500MSPS in Both 2 & 3 Lane Configurations
  - Deterministic Latency & Multi-Chip Time Alignment
  - 2x Harmonic Clocking
- 7x7mm 48-QFN Package

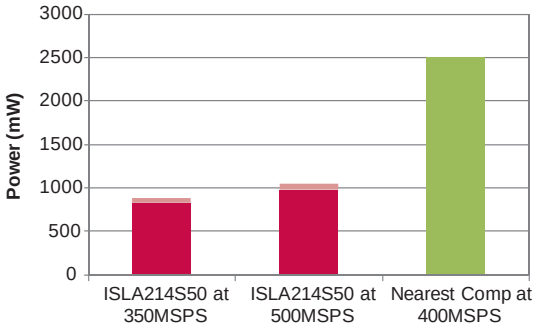
Advantages Over the Competition

- 7x Fewer Outputs
- 75% Smaller Footprint
- 25% Higher Sample Rate
- 3dB Higher SNR
- 60% Lower Power Consumption

High SNR



Low Power



JESD204B 16-Bit 250MSPS ADC: ISLA216S25/20/13

Fastest 16-bit ADC with JESD204B High Speed Serial Outputs

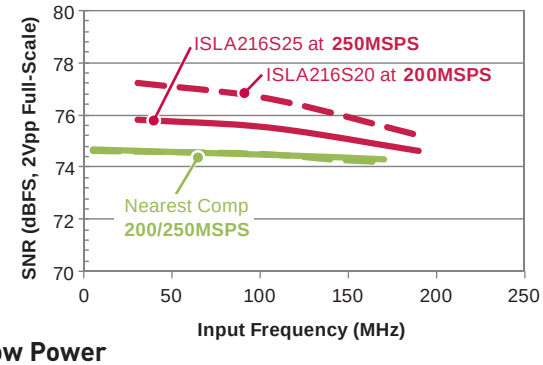
Key Features

- SNR: 75.8dBFS, SFDR: 87dBc, f_S=250MSPS
- Power Consumption at 250MSPS: 890mW
- JESD204B High Speed Serial Outputs
  - Backwards Compatible with JESD204A
  - Deterministic Latency & Multi-Chip Time Alignment
  - 2x/4x Harmonic Clocking
- 7x7mm 48-QFN Package

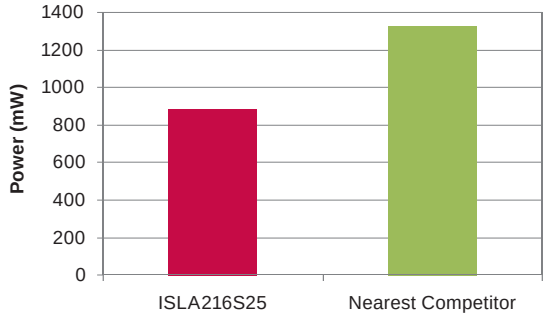
Advantages Over the Competition

- 4x Fewer Outputs
- 50% Smaller Footprint
- 33% Lower Power Consumption
- Highest Available SNR at only $2V_{PP}$ f_S Input

High SNR



Low Power



JESD204B Dual 14-bit 250MSPS ADC: ISLA224S25/20/12

Fastest Dual 14-bit ADC with JESD204B High Speed Serial Outputs

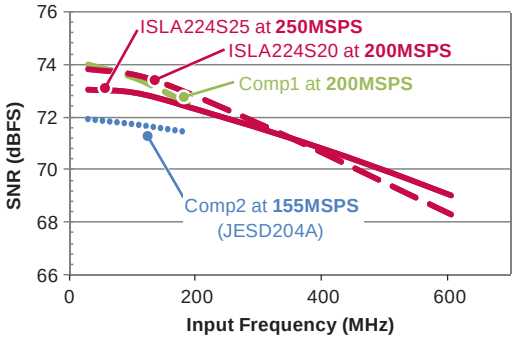
Key Features

- SNR: 73.1dBFS, SFDR: 86dBc, f_S=250MSPS
- Power Consumption at 250MSPS: 990mW
- JESD204B High Speed Serial Outputs
  - Backwards Compatible with JESD204A
  - Deterministic Latency & Multi-Chip Time Alignment
  - 2x/4x Harmonic Clocking
- 7x7mm 48-QFN Package

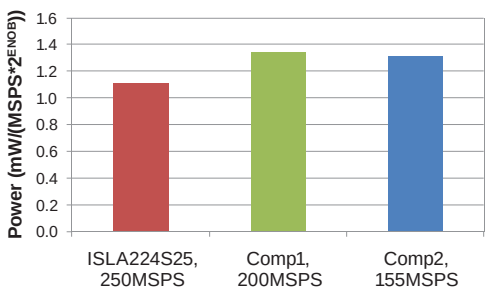
Advantages Over the Competition

- First Dual 14-bit ADC Available with JESD204B Outputs
- 25% Higher Sample Rate
- Deterministic Latency & Multi-Chip Time Alignment
- Best High IF SNR

High SNR



Low Power



Dual 14-Bit Serial ADC Power
(normalized by Sample Rate & ENOB)

Additional Recommended Communications Infrastructure Products

Product Type	Where Used	Part Numbers	Key Features / Advantages
LDO	Analog I/O, DSP, Memory, ASIC	ISL9016	Dual Low Noise Low Icc High PSRR 150mA
		ISL9021A	Single Low Noise Low Icc High PSRR 250mA
		ISL80136	40V Low Icc 50mA with SHDN
		IS6719	100V Linear Bias Supply
Non-Isolated PWM Controller	DC to DC Bus Supply, POL Regulation, FPGA and Core Power	ISL8120	Dual/nPhase Buck PWM Controller
		ISL6420B	Advanced Sync Buck 28V In Controller
		ISL9440	Triple Buck PWM + LDO Controller
Isolated Controller	AC/DC and DC/DC Supply Isolation, HV Supplies, Telecom and Datacom Bricks	ISL6721A	Single End PWM Controller
		ISL6740A	Double Ended PWM Controller
		ISL6745A	Double Ended PWM Controller
Switching Regulator	Analog I/O, DSP, Memory, ASIC, POL Regulation	ISL85402	40V 2A Buck Regulator
		ISL8023/4	5V 3A/4A Sync Buck Regulator
		ISL9112	I^2C Control Buck Boost 2A Reg
		ISL95210	5V 10A Sync Buck Regulator
Multi Output Switching Regulator	Switching Regulation	ISL8088	Dual High Efficiency Low Icc 0.8A Sync Buck
		ISL8022	Dual High Efficiency Low Icc 2A Sync Buck
		ISL8033/36	Dual High Effciency 3A Sync Buck
Power Module	Highly Compact Power Solution, FPGA and Core Power, POL Regulation,	ISL8201M, ISL8204M, ISL8206M	4A/6A/10A Power Modules
		ZL9101	12A Digital PMBus Module
Hot Plug	USB Hot Plug Protection, Networking Card Supply Protection	ISL6185	USB Hot Plug Controller
		ISL6115/16/17/20	12V, 5V, 3.3V, 2.5V Power Distribution Cntrl
ORing FET	High Voltage Supply Redundancy Protection	ISL6144	High Voltage ORing FET Controller
Bridge Driver	High Voltage Power Supplies, Half and Full Bridge DC-DC Converters	ISL2100A/2101A	100V 2A Half Bridge Driver
		ISL89400/89401	100V 1.25A Half Bridge Driver
		HIP4080A/4081A	80V 2.5A Full Bridge Driver
		HIP4086	3 Phase Bridge Driver
FET Driver	Synchronous Buck Converter MOSFET Drivers, DC-DC Converter Power Supplies	ISL89160-89168	Dual HS 6A FET Driver
High Speed Op Amp	Analog I/O	EL5166 (EN), EL5167	1.4GHz Single, Low Noise (1.7nV/√Hz) Op Amp
		EL5164 (EN), EL5165	600MHz, Single, Low Noise (2.1nV/√Hz) Op Amp
		EL5131	High Gain, Single, Low Noise (1.8nV/√Hz) Op Amp
		EL5236, EL5237 (EN)	High Gain, Dual, Low Noise (1.5nV/√Hz) Op Amp
Voltage Reference	Analog I/O	ISL21090	High Performance, High Precision, Low Power, Low Noise Bandgap Voltage Reference
		ISL21009	High Performance, 3ppm/°C, Ultra Low Power FGA Voltage Reference
		ISL21010	Low Cost Bandgap Voltage Reference
General Purpose Op Amp	Analog I/O	ISL28177	40V, Single, Precision Op Amp
		ISL28325/ISL28345	40V, Dual/Quad, Op Amp
Interface	Non Isolated Interface to Micro Controller	ISL317xE	3V IEC6000 ESD RS485 w/ Hot Plug & Fail Safe
		ISL315xE	5V IEC6000 ESD RS485 w/ Hot Plug & Fail Safe
		ISL328x/9x	Single Tx/Rx RS-485/422
		ISL32x7xE	Quad Tx/Rx RS-485/422
		ISL81387, ISL41387	±15kV ESD 5V, Dual Protocol (RS-232/RS-485)
		ISL3330/1/2/3	Single/Dual Channel ±15kV ESD 3V, Dual Protocol (RS-232/RS-485)
RTC	External Micro Controller Clock	ISL12020M, ISL12022M	3:1 RTC + Temp Sensor + Crystal, 5ppm Temp Accuracy
Digital Potentiometers (DCP)	Sensor Calibration & Bias Input Module Amp Gain Adjustment Output Module Amp Gain Adjustment	ISL22316, ISL22326, ISL22346	128 Tap, 125°C Non Volatile, Low Noise, Low Power, I^2C Interface, Shutdown
		ISL96017	128 Tap, Non Volatile, I^2C , DCP with 16k bits User Memory, Small Package
		ISL22317	128 Tap, 1% Accurate Non Volatile, I^2C Interface DCP
		ISL95811	256 Tap, Non Volatile, Low Power, I^2C Interface DCP with 5 Bytes of User Memory
		ISL22313, ISL22323, ISL22343	256 Tap, Dual Supply, Non Volatile, Low Power, I^2C Interface
		ISL22414, ISL22424, ISL22444	256 Tap, Dual Supply, Non Volatile, Low Power, SPI Interface

Design Resources

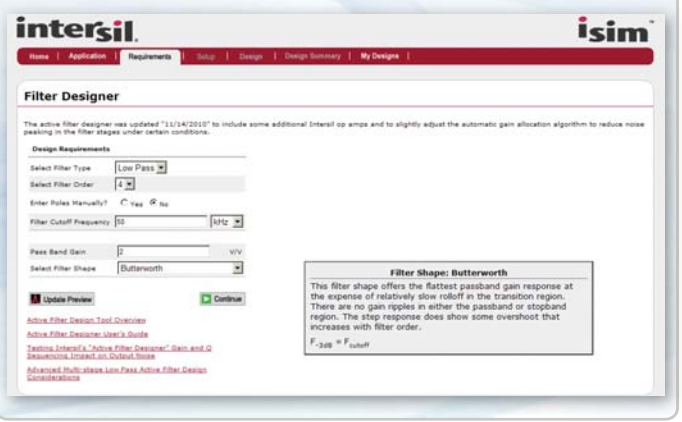
iSIM

Advanced design tool for creating complex solutions in 4 easy steps.

www.intersil.com/isim

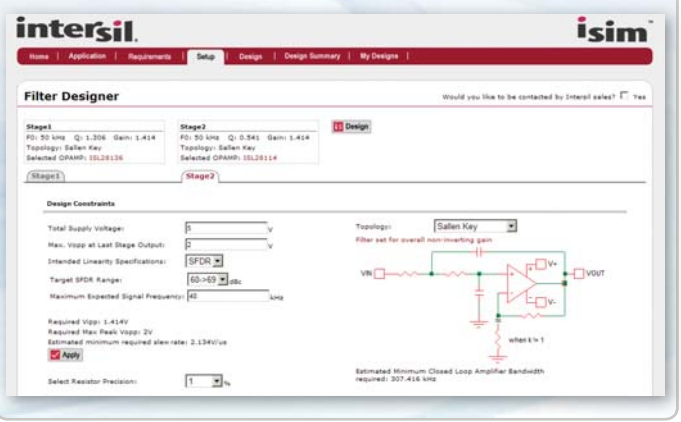
1 Design Requirements Interview

Simply enter your design requirements, such as input and output voltage and current etc.



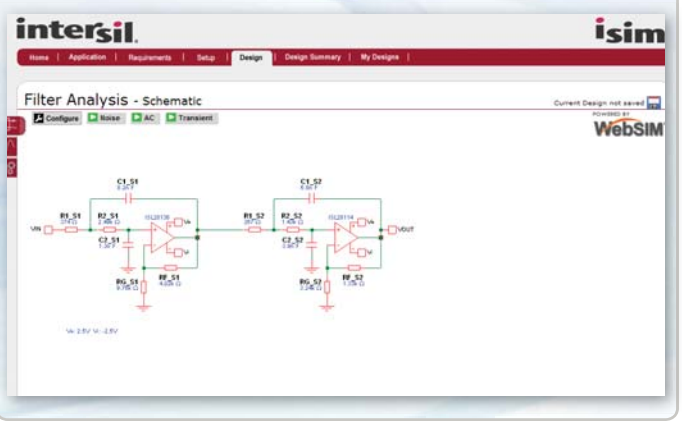
2 Design Configuration

iSim automatically calculates optimum loop compensation and calculates appropriate values for resistors and capacitors.



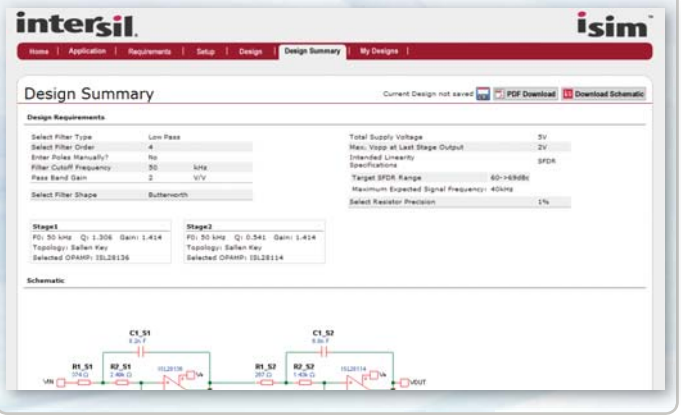
3 Design Verification by Remote Simulation

Your design is displayed in an Online Schematic, which allows you to test your application in a virtual test bed. iSim allows AC, transient analysis.



4 Summary, Download, Design & More

Once the design has been verified, iSim generates a Bill of Materials and a comprehensive design report including simulation results, schematic and design data.



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