

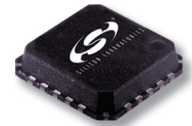


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# Wireless Products



## Aero™ GSM/GPRS Transceivers

- Complete multi-band GSM/GPRS cellular radio front-end using 100% standard CMOS technology
- Highest integration, easiest to design and manufacture
- Proven digital low-IF receiver architecture delivers high performance, low solution cost and reduced complexity
- Offset PLL transmitter integrated with Silicon Laboratories' patented synthesizer technology
- Digitally-controlled crystal oscillator (DCXO) enables the use of a standard crystal
- Software programmable universal baseband interface supports all major baseband solutions

Part Number	Description
Si4205-BM	Aero I Single Package Multi-Band Transceiver—GSM 850 or E-GSM 900/DCS 1800/PCS 1900
Si4206-BM	Aero I+ Single Package Multi-Band Transceiver with DCXO—GSM 850 or E-GSM 900/DCS 1800/PCS 1900
Si4210-GM	Aero II Single Chip Quad-Band Transceiver—GSM 850/E-GSM 900/DCS 1800/PCS 1900

## GSM/GPRS Power Amplifier

- Integrated power control, thermal/load mismatch protection, harmonic filtering and input/output matching
- Optimal current consumption for all power levels during burst operation enables longer talk times

Part Number	Description
Si4300-BM	Dual-Band E-GSM 900 and DCS 1800 Monolithic Power Amplifier System

### Actual Size



Top View



Side View

### Si4300 Power Amp

- Small 25 mm<sup>2</sup> (3.9 x 6.4 x 1.3 mm) package
- Single monolithic die on a ceramic substrate



## RF Synthesizers

- CMOS RF synthesizers with integrated VCOs, loop filters and varactors
- Low profile packages

Part Number	RF1	RF2	IF	Settling Time	Input Ref
<b>General Purpose RF Synthesizers</b>					
Si4133	900 to 2050 MHz	750 to 1500 MHz	62.5 to 1000 MHz	200 $\mu$ s <sup>1</sup>	2 to 26 MHz
Si4123	900 to 2050 MHz	n/a	62.5 to 1000 MHz	200 $\mu$ s <sup>1</sup>	2 to 26 MHz
Si4122	n/a	750 to 1500 MHz	62.5 to 1000 MHz	200 $\mu$ s <sup>1</sup>	2 to 26 MHz
Si4113	900 to 2050 MHz	750 to 1500 MHz	n/a	200 $\mu$ s <sup>1</sup>	2 to 26 MHz
Si4112	n/a	n/a	62.5 to 1000 MHz	200 $\mu$ s <sup>1</sup>	2 to 26 MHz
<b>GSM/GPRS RF Synthesizers</b>					
Si4133G	900 to 1800 MHz	750 to 1500 MHz	500 to 1000 MHz	140 $\mu$ s <sup>1</sup>	13 MHz
Si4123G	900 to 1800 MHz	n/a	500 to 1000 MHz	140 $\mu$ s <sup>1</sup>	13 MHz
Si4122G	n/a	750 to 1500 MHz	500 to 1000 MHz	140 $\mu$ s <sup>1</sup>	13 MHz
<b>Direct Conversion GSM/GPRS RF Synthesizer</b>					
Si4114G	1840 to 1990 MHz	1710 to 1840 MHz	n/a	140 $\mu$ s <sup>1</sup>	13/26 MHz
<b>Extended Frequency GSM/GPRS RF Synthesizer</b>					
Si4115G	2030 to 2240 MHz	n/a	n/a	140 $\mu$ s <sup>1</sup>	13/26 MHz
<b>3G W-CDMA RF Synthesizer</b>					
Si4133W	2300 to 2600 MHz	750 to 1700 MHz	62.5 to 1000 MHz	200 $\mu$ s <sup>1</sup>	2 to 40 MHz
<b>802.11 and ISM Band RF Synthesizers</b>					
Si4136	2300 to 2500 MHz	2025 to 2300 MHz	62.5 to 1000 MHz	80 $\mu$ s <sup>2</sup>	2 to 50 MHz
Si4126	n/a	2025 to 2300 MHz	62.5 to 1000 MHz	80 $\mu$ s <sup>2</sup>	2 to 50 MHz

<sup>1</sup>For a 200 kHz update rate, <sup>2</sup>For update rates > 500 kHz

# Wireline Products



## ISOmodem®

- Globally-compliant, 2-chip embedded modems ranging in speed from 2400 bps to 56 kbps
- Caller ID decode and parallel handset (intrusion) detection
- Smallest full-featured modem solution available

Part Number	Max Data Rate (bps)	Line-Side Device	Digital Interface	V.42, MNP2-4	BOM Components	Package
Si2401	2400	Si3010	UART	On-host processor	32	16-pin SOIC
Si2404	2400	Si3010	UART or parallel	On-chip	32	24-pin TSSOP
Si2415	14400	Si3018	UART or parallel	On-chip	32	24-pin TSSOP
Si2434	33600	Si3018	UART or parallel	On-chip	32	24-pin TSSOP
Si2457	56000	Si3018	UART or parallel	On-chip	32	24-pin TSSOP

## ProSLIC®

- Integrated SLIC and codec provides the smallest footprint available
- Supports full range of customer premises equipment (CPE), enterprise and carrier access applications
- Global ringing, caller ID, audio tone generation and GR-909 line testing

Part Number	# of Channels	Linefeed Circuitry	Ringing	On-Chip DC/DC Converter	On-Chip Codec	On-Chip Line Diagnostics	Package
Si3210/15	1	Discrete or Si3201	Internal (90 V <sub>PK</sub> )	Yes	Yes	DC, loopback	38-pin TSSOP
Si3211	1	Discrete or Si3201	Internal (90 V <sub>PK</sub> )	—	Yes	DC, loopback	38-pin TSSOP
Si3216	1	Discrete or Si3201	Internal (90 V <sub>PK</sub> )	Yes	Wideband	DC, loopback	38-pin TSSOP
Si3220	2	Discrete or Si3200	Internal (95 V <sub>PK</sub> )	—	Yes	Audio, DC, loopback	64-pin TQFP
Si3225	2	Discrete or Si3200	External (w/on-chip relay control)	—	Yes	Audio, DC, loopback	64-pin TQFP
Si3232	2	Discrete or Si3200	Internal (95 V <sub>PK</sub> )	—	—	DC, loopback	64-pin TQFP

## ADSL/ADSL2+ AFEs

- Highly-integrated ADSL analog front end (AFE) in less than 1.9 square inches of board space

Part Number	ADSL2+	ADSL/ADSL2	Nibble/Serial Interfaces	Digital RX PGA	PSD Filter	Package
Si3101	—	✓	2/2	—	✓	44-pin TQFP
Si3110	✓	✓	3/0	✓	—	44-pin TQFP

## Silicon DAAs

- Programmable interface to meet global telephone line requirements
- Isolate customer premises equipment (CPE) from telephone network
- Comply with both FCC and global telephony standards enabling a single board design to ship worldwide
- The Si3050 is ideal for “Voice/FXO” applications and is interface compatible with ProSLIC family devices

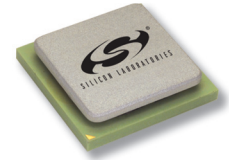
Part Number	Region	Digital Interface	Line Voltage Monitor	AC Termination Settings	BOM Components	Package
Si3034	Global	DSP serial	—	2	59	Two 16-pin SOIC
Si3035	FCC	DSP serial	—	1	42	Two 16-pin SOIC
Si3036	FCC	AC-Link	—	1	42	Two 16-pin SOIC
Si3038	Global	AC-Link	—	2	59	Two 16-pin SOIC or 16-pin TSSOP
Si3044	Global	DSP serial	Yes	2	59	Two 16-pin SOIC
Si3050	Global	PCM/SPI or GCI	Yes	4/16	32	20-pin TSSOP + 16-pin SOIC
Si3052	Global	PCI	—	4	32	64-pin TQFP + 16-pin SOIC
Si3054	Global	AC-Link	—	4	32	Two 16-pin SOIC
Si3055	Global	HD Audio	—	4	32	Two 16-pin SOIC
Si3056	Global	DSP serial	Yes	4/16	32	Two 16-pin SOIC

## Voice Codec

- Wide dynamic range in a small footprint
- Minimum of required external components

Part Number	Microphone Amplifier	Input Mixer	Headphone Driver	Handset Hybrid	Package
Si3000	✓	✓	✓	✓	16-pin SOIC

# Networking Products



## SiPHY® High-Speed Transceivers

- Integrated limiting amplifier, CDR, CMU and MUX/DEMUX
- Low jitter generation:  $<2.0 \text{ mUI}_{\text{RMS}}$  (typ OC-48)
- Jitter attenuating CMU eliminates the external clean-up PLL
- Low power operation

Part Number	Description
Si5100	OC-48, STM-16 SONET/SDH Transceiver, 1:16 Deserializer and 16:1 Serializer
Si5110	OC-48, STM-16 SONET/SDH Transceiver, 1:4 Deserializer and 4:1 Serializer

## Precision Clock ICs

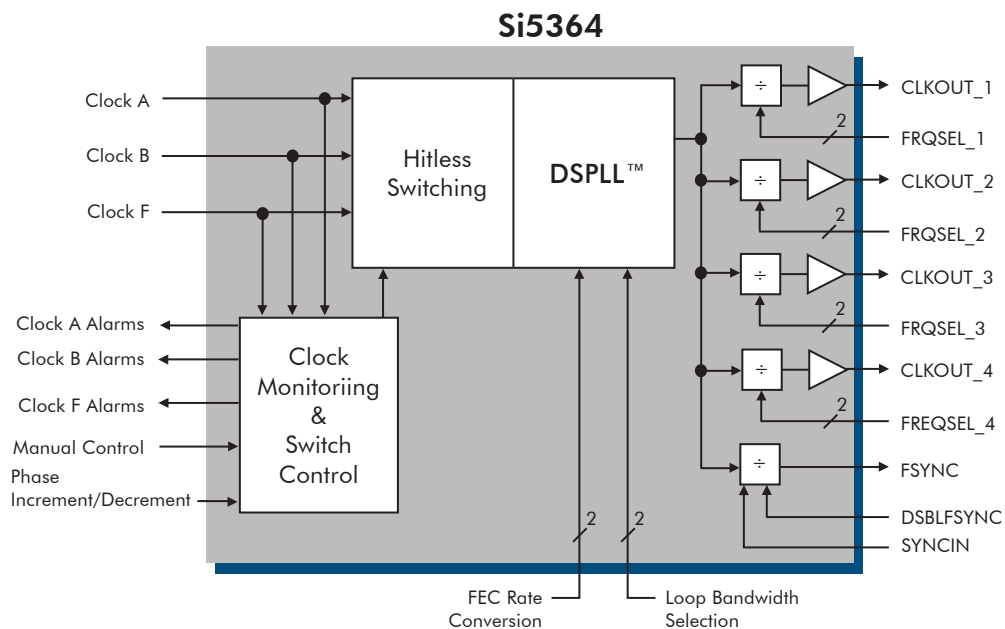
- Jitter generation less than  $0.3 \text{ ps}_{\text{RMS}}$  (typ OC-192)
- Forward and reverse FEC clock scaling
- Selectable loop filter bandwidths

Part Number	Description
Si5310	Precision Clock Multiplier/Regenerator, 155 MHz, 622 MHz
Si5320	SONET/SDH Clock Multiplier/Jitter Attenuator, 19 MHz, 155 MHz, 622 MHz Output, 15/14 Scaling
Si5321	SONET/SDH Clock Multiplier/Jitter Attenuator, 19 MHz to 2.5 GHz Output, G.709 FEC and 66/64 Scaling
Si5364	SONET/SDH Clock Multiplier/Jitter Attenuator, Auto Hitless Switching, Four Outputs at 19 MHz, 155 MHz or 622 MHz

## Clock and Data Recovery ICs

- Multi-rate operation: OC-3/12/48, STM-1/4/16, GbE and 2.7 Gbps
- Low jitter generation; low power operation
- DSPLL™ technology eliminates external loop filter components

Part Number	Description
Si5010	OC-12/3, STM-4/1 SONET/SDH, 2.5 V
Si5013	OC-12/3, STM-4/1 SONET/SDH, with limiting amp, 3.3 V
Si5017	OC-48, STM-16 SONET/SDH, 2.7 Gbps, with limiting amp, 3.3 V
Si5018	OC-48, STM-16 SONET/SDH, 2.7 Gbps, 2.5 V
Si5020	OC-48/12/3, STM-16/4/1 SONET/SDH, GbE, 2.7 Gbps, 2.5 V
Si5022	OC-48/12/3, STM-16/4/1 SONET/SDH, GbE, 2.7 Gbps, with limiting amp, 2.5 V
Si5023	OC-48/12/3, STM-16/4/1 SONET/SDH, GbE, 2.7 Gbps, with limiting amp, 3.3 V



# Microcontroller Products



## General Purpose

- Offer outstanding value for a wide variety of general-purpose embedded applications

Part Number	MIPS (peak)	Flash	RAM (bytes)	Dig I/O	Internal Osc	ADC	Package
C8051F206	25	8 kB	1280	32	± 20%	12-bit, 32-ch., 100 ksps	TQ48
C8051F226	25	8 kB	1280	32	± 20%	8-bit, 32-ch., 100 ksps	TQ48
C8051F220, 221	25	8 kB	256	32, 22	± 20%	8-bit, 32-ch., 100 ksps	TQ48, LQ32
C8051F230, 231	25	8 kB	256	32, 22	± 20%	—	TQ48, LQ32
C8051F236	25	8 kB	1280	32	± 20%	—	TQ48

## USB

- Single-chip solution featuring integrated full-speed USB 2.0 function controller and on-chip clock recovery

Part Number	MIPS (peak)	Flash	RAM (bytes)	Dig I/O	Internal Osc	ADC	Package
C8051F320	25	16 kB	2304	25	± 1.5%	10-bit, 17-ch., 200 ksps	LQ32
C8051F321	25	16 kB	2304	21	± 1.5%	10-bit, 13-ch., 200 ksps	MLP28

## CAN

- Single-chip solution featuring an integrated CAN 2.0 B controller and ADCs

Part Number	MIPS (peak)	Flash	RAM (bytes)	Dig I/O	Internal Osc	ADC	Package
C8051F040, 041, 042, 043	25	64 kB	4352	64, 32	± 2%	12-bit, 13-ch., 100 ksps	TQ100, TQ64
C8051F060, 061, 062, 063	25	64 kB	4352	59, 24	± 2%	16-bit, 2-ch., 1 Msps	TQ100, TQ64

## Interface Products

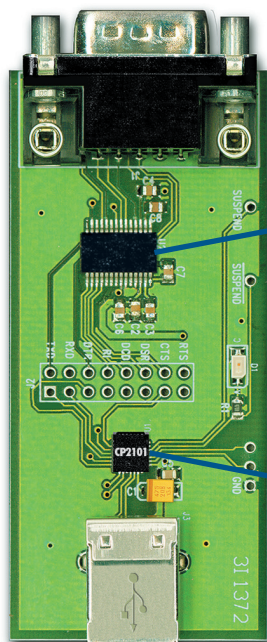
- Highly-integrated USB-to-UART bridge controller for updating RS-232 designs to USB

Part Number	USB 2.0	UART Data Rate	RX/TX Buffer	Internal USB Clock	VREG	EEPROM	Package
CP2101	12 Mbps	300 bps–921 kbps	512 B/512 B	✓	✓	512 B	MLP28

### CP2101EK Evaluation Board

(Actual Size)

1.375 x 3 in.

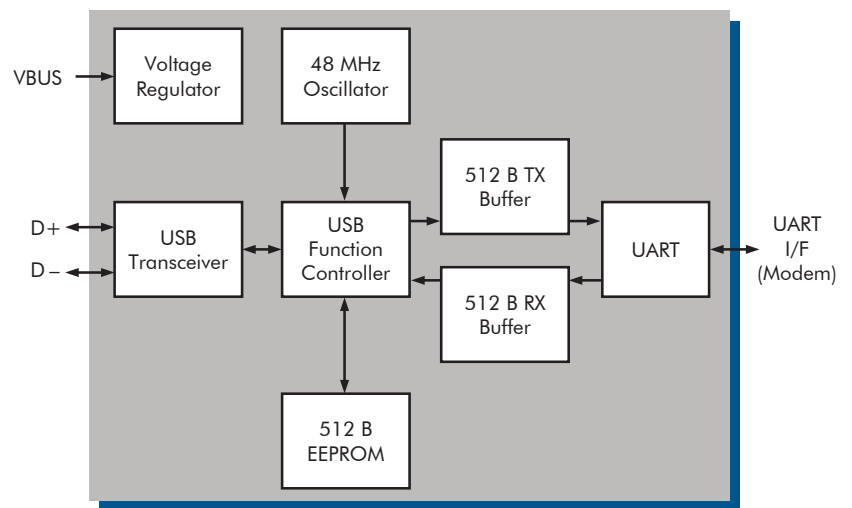


**RS-232 Transceiver**

**CP2101**

- USB 2.0 compliant
- -40 to 85 °C operation
- 5 x 5 mm 28-pin MLP

### CP2101



# Microcontroller Products



## Precision Mixed-Signal

- High-performance MCU family ideal for precision analog and computation-intensive applications

Part Number	MIPS (peak)	Flash	RAM (bytes)	Dig I/O	Internal Osc	ADC	DAC	Package
C8051F000, 001, 002	20	32 kB	256	32, 16, 8	± 20%	12-bit, 8-ch., 100 ksps	12-bit, 2-ch.	TQ64, TQ48, LQ32
C8051F005, 006, 007	25	32 kB	2304	32, 16, 8	± 20%	12-bit, 8-ch., 100 ksps	12-bit, 2-ch.	TQ64, TQ48, LQ32
C8051F010, 011, 012	20	32 kB	256	32, 16, 8	± 20%	10-bit, 8-ch., 100 ksps	12-bit, 2-ch.	TQ64, TQ48, LQ32
C8051F015, 016, 017	25	32 kB	2304	32, 16, 8	± 20%	10-bit, 8-ch., 100 ksps	12-bit, 2-ch.	TQ64, TQ48, LQ32
C8051F018, 019	25	16 kB	1280	32, 16	± 20%	10-bit, 8-ch., 100 ksps	—	TQ64, TQ48
C8051F020, 021, 022, 023	25	64 kB	4352	64, 32	± 20%	12-bit, 8-ch., 100 ksps	12-bit, 2-ch.	TQ100, TQ64
C8051F064, 065	25	64 kB	4352	59, 24	± 2%	16-bit, 2-ch., 100 ksps	12-bit, 2-ch.	TQ100, TQ64
C8051F066, 067	25	32 kB	4352	59, 24	± 2%	16-bit, 2-ch., 100 ksps	12-bit, 2-ch.	TQ100, TQ64
C8051F120, 121, 122, 123	100	128 kB	8448	64, 32	± 2%	12-bit, 8-ch., 1 Msps	—	TQ100, TQ64
C8051F124, 125, 126, 127	50	128 kB	8448	64, 32	± 2%	12-bit, 8-ch., 100 ksps	12-bit, 2-ch.	TQ100, TQ64
C8051F350, F351	50	8 kB	768	17	± 2%	24-bit, 8-ch., 1 ksps	8-bit, 2-ch.	LQ32, MLP28
C8051F352, F353	50	8 kB	768	17	± 2%	16-bit, 8-ch., 1 ksps	8-bit, 2-ch.	LQ32, MLP28

## Small Form Factor

- Fully-featured MCUs in tiny micro leadframe packages (MLP) for small form-factor applications

Part Number	MIPS (peak)	Flash	RAM (bytes)	Dig I/O	Internal Osc	ADC	DAC	Package
C8051F300	25	8 kB	256	8	± 2%	8-bit, 8-ch., 500 ksps	—	MLP11
C8051F301	25	8 kB	256	8	± 2%	—	—	MLP11
C8051F302	25	8 kB	256	8	± 20%	8-bit, 8-ch., 500 ksps	—	MLP11
C8051F303	25	8 kB	256	8	± 20%	—	—	MLP11
C8051F304	25	4 kB	256	8	± 20%	—	—	MLP11
C8051F305	25	2 kB	256	8	± 20%	—	—	MLP11
C8051F310	25	16 kB	1280	29	± 2%	10-bit, 21-ch., 200 ksps	—	LQ32
C8051F311	25	16 kB	1280	25	± 2%	10-bit, 17-ch., 200 ksps	—	MLP28
C8051F330	25	8 kB	768	17	± 2%	10-bit, 16-ch., 200 ksps	10-bit, 1-ch.	MLP20
C8051F331	25	8 kB	768	17	± 2%	—	—	MLP20