



Product Selector

Edition 10

CML Focus Products

Products that are production-released and recommended for new designs

CML Microcircuits (CML) has, in over 40 years of operation, grown to be a world-leader in the design, development and support of low-power analogue, digital and mixed-signal semiconductors for telecommunications and control systems worldwide.

As an experienced designer and manufacturer of ultra low-power Application Specific Standard and Custom Product ICs for an ever-widening range of communications and control applications, CML builds a wealth of knowledge, experience and support into all of its products.

With a primary focus on all facets of wireless and wireline communications and control applications - from sub-audio through baseband to RF frequencies - CML offers a product portfolio that is second-to-none in the field.

Highly experienced in the design of IC products to operate to proprietary communications systems and protocols, CML's fast expanding custom design resource offers, in addition, unique paths to market for customer designs where a stock CML product does not suit. The newest member of this resource is our proprietary FirmASIC® technology, combining lowest overall cost, fastest time-to-market and lowest risk, with unsurpassed flexibility.

Ultra Low Power Operation

CML's IC products consume significantly less power and provide more functionality than competing devices. This, of course, offers many 'power/battery-saving' advantages to radio, data and telecoms designs.

High Integration

Permits many more individual functions on a single chip. The majority of CML products comprise multiple functions, all designed to serve not only the main application but also its peripheral and system activities.

As well as providing the main application functions, CML products generally offer the 'extra' analogue and digital functional and interfacing requirements not supplied by a DSP or host processor. This drastically reduces the requirement for extra ICs and their companion components, which in turn shrinks the overall PCB footprint requirement, thus allowing the design and production of a much smaller and lower-power end product.

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FirmASIC® Design Technology

FirmASIC® is a proprietary component technology from CML that reduces cost, time to market and development risk, with increased flexibility for the designer and the end application. FirmASIC® combines Analogue, Digital, Firmware and Memory technologies in a single silicon platform that can be focused to deliver the right feature mix, performance and price for a target application family.

Infinite Applications

CML's wide-ranging product portfolio offers an expansive list of application possibilities for these versatile ICs.

Due to the ease of implementation, continuous flexibility and the on-going application and technical support available, a CML IC product is the ideal and time-saving solution to the majority of customers communications and/or control problems.

Reliable Customer and Product Support

The CML network of over 100 distributor and representative companies worldwide, allied with its teams of application engineers, provides all CML customers with comprehensive local pre- and after-sales support.

From product inception, through the design, manufacture and qualification stages, CML is there providing unequalled technical and application support.

RF (Radio Frequency) Products

CML's range of Radio Frequency (RF) products provides a selection of modular building blocks for implementation as part or all of the 'wireless front-end' of a wide range of constant and non-constant envelope modulation systems.

The new RF Building Block range is designed to provide flexible, high-performance ICs required for HF/VHF/UHF professional radios, wireless data terminals, wireless microphones and marine and avionics radio systems.

With an operating frequency ranging down to 20MHz and up to 1GHz, the RF products offer: a combination RF transceiver, a separate RF modulator and demodulator, and a Cartesian feedback loop transmitter for efficiency and transmitter PA linearisation.

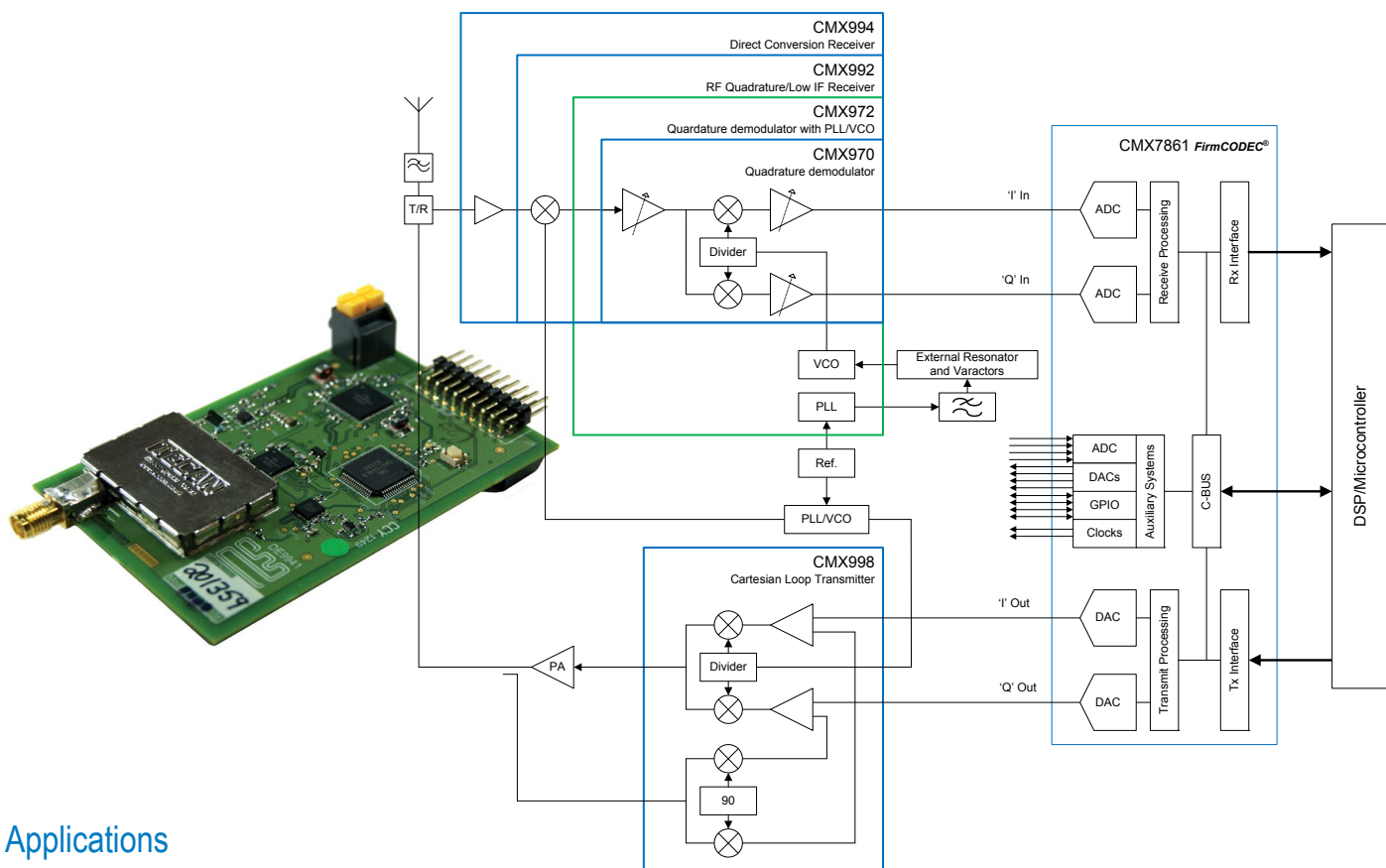
CML's RF devices are designed for use in a wide range of both narrowband and wideband applications, in the wireless data and digital PMR markets.

Rx	Product Description	RF/IF Range MHz	I/Q BW MHz	Input IP3 dBm	Noise Figure dB	Gain dB (V/V)	Supply Voltage V	Typ. Current mA	Package Type	Key Benefits
CMX970	RF/IF Quadrature Demodulator	20 - 300	10	-15	10	56	3.0 - 3.6	15	16-pin VQFN	Very low power, gain controls and flexible LO driver
CMX972	RF/IF Quadrature Demodulator with PLL	20 - 300	10	-15	10	56	3.0 - 3.6	24	32-pin VQFN	Very low gain controls, flexible LO, synthesiser with VCO amp
CMX992	RF/IF Quadrature Receiver with IF PLL	100 - 1000	1.4	11	15	61	3.0 - 3.6	52	48-pin VQFN	Dual superhet I/Q architecture, IF filter mux, VGA, flexible LO divider, IF synthesiser with VCO amp
CMX994	Direct Conversion Receiver	50 - 940	1.6	11	5	63	3.0 - 3.6	56	40-pin VQFN	Very high IIP2 for true-zero IF direct conversion receiver use, low power, complete LNA to zero-IF receiver path, IF filter, gain controls, flexible LO divider for Tx and Rx synthesiser with VCO amp

Tx	Product Description	RF/IF Range MHz	I/Q BW MHz	Output IP3 dBm	Noise Floor dBm/Hz	Output Power dBm	Supply Voltage V	Typ. Current mA	Package Type	Key Benefits
CMX971	RF Quadrature Modulator	20 - 1000	25	11	-150	0 (PEP)	3.0 - 3.6	61	16-pin VQFN	Very low power, excellent untrimmed performance, flexible LO divider
CMX993	RF Quadrature Modulator	30 - 1000	10	25	-155	3 (PEP)	3.0 - 3.6	95	16-pin VQFN	Amplifiers for analogue scaling and filtering, output gain control, flexible LO divider
CMX993W	RF Quadrature Modulator	30 - 1000	50	25	-155	3 (PEP)	3.0 - 3.6	96	16-pin VQFN	Amplifiers for analogue scaling and filtering, output gain control, flexible LO divider
CMX998	Cartesian Feedback Loop Transmitter	30 - 1000	100	-	-148	3 (PEP)	3.0 - 3.6	135	64-pin VQFN	I/Q modulator-based subsystem greatly linearises external RF PA

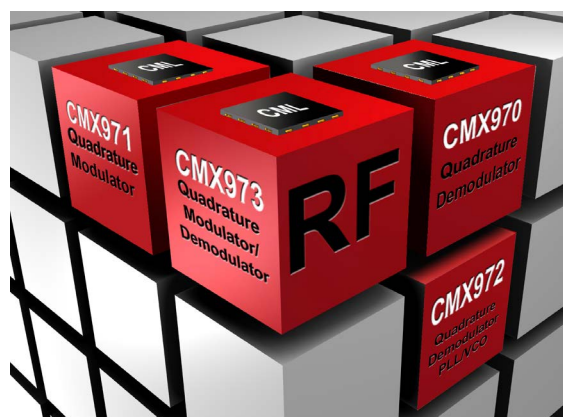
RF (Radio Frequency) Products

Tx/Rx	Product Description	RF/IF Range MHz	I/Q BW MHz	IP3 dBm	Noise		Supply Voltage V	Typ. Current mA	Package Type	Key Benefits
	Tx			Output	Floor dBm/Hz	Output Power dBm				
	Rx			Input	Figure	Gain				
CMX973	Low Power RF Qudrature Transceiver									
	Tx	20 - 1000	25	11	-150	0 (PEP)	3.0 - 3.6	61	32-pin VQFN	Very low power, small size, excellent performance, flexible LO divider, synthesiser with VCO amp
	Rx	20 - 300	10	-15	10	56dB (V/V)		15		
CMX991	RF Quadrature Transceiver									
	Tx	100 - 1000	1	-	-142	-10	3.0 - 3.6	82	48-pin VQFN	Small size dual superhet Rx, two-stage Tx shares Rx IF. flexible LO divider, IF synth with VCO amp
	Rx	100 - 1000	1.4	11	15	43dB (V/V)		52		



Applications

- Data over radio:
 - MSK, FSK, GMSK, QPSK, QAM
- Wideband modulation systems up to 50MHz
- Linear and non-linear modulation schemes
- Wireless telemetry
- Marine AIS systems
- Software Defined Radio (SDR)
- Satellite terminals
- Digital TV - CATV mod.
- Wi-Max implementations
- Analogue, digital and multimode radio:
 - TETRA, APCO, dPMR, DMR, PDT



Analogue Two-way Radio Products

CML's two-way radio products address both the full baseband and individual communication requirements of analogue military, PMR/LMR, trunked and leisure radio systems.

The analogue two-way radio product features include:

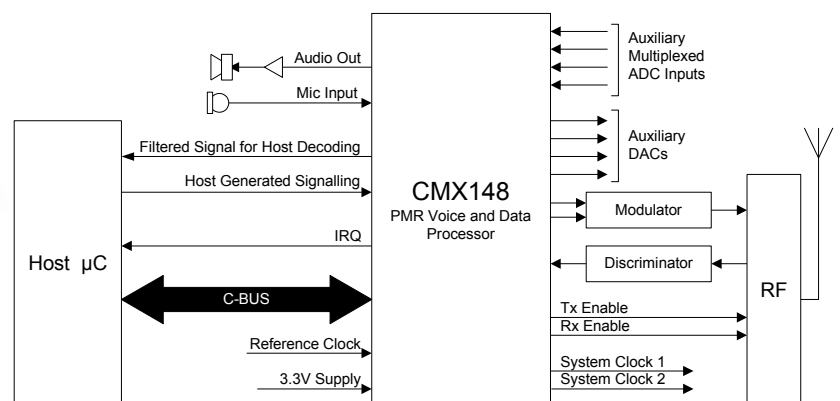
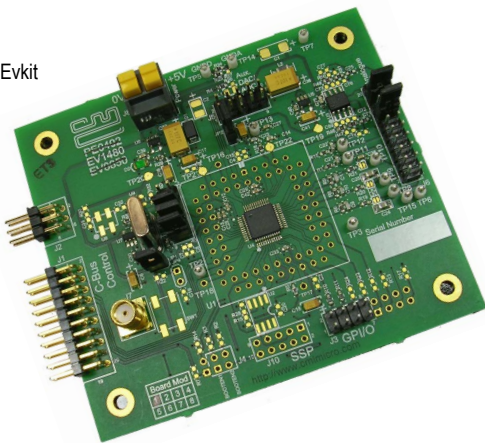
- Baseband functions: audio processing, data, CTCSS, DCS, Selcall, XTCSS, single-tone operations and DTMF
- Voiceband processing offering flexible functions such as: signal filtering, companding, scrambling, pre and de-emphasis and the digital control of all signal paths and levels
- In-band signalling in the form of DTMF, Selcall and general single, dual and multi-tone operations
- Sub-audio signalling (CTCSS and DCS), sub-audio signalling functions that operate alongside voiceband operations.
- Data functions are available on-chip, in both raw and packet formats, to enable data-over-radio (telemetry) and/or control signalling
- RF support features such as system clocks, RF synthesisers and auxiliary ADCs and DACs.
- Control of the majority of CML's IC products via a serial bus (C-BUS)

	Product Description	Radio Systems	Audio Processing	Data	Signalling	Aux Functions	Supply Voltage V	Typ. Current mA	Package Type
CMX7031 CMX7041	Two-way Radio Processor	Professional TWR PMR Marine VHF Amateur AX.25	AGC Filtering Companding Scrambler Pre/De-emphasis Limiter	FFSK/ MSK 4FSK C4FM AX.25	CTCSS DCS DTMF Selcall XTCSS Programmable Tones	ADCs, DACs, RAMDAC, GPIO, Systems Clocks	3.0 - 3.6	7.8	48-pin VQFN/ LQFP 64-pin VQFN/LQFP
CMX148	PMR Audio and Data Processor	PMR446 FRS MURS GMRS Leisure Radio	Filtering Scrambler Pre/De-emphasis Limiter	FFSK/ MSK	DTMF	ADCs, DACs, RAMDAC, GPIO, System Clocks	3.0 - 3.6	9.8	48-pin VQFN/LQFP
CMX138A	Audio Scrambler and Sub-audio Signalling Processor	PMR446 FRS MURS GMRS Leisure Radio	Filtering Compander Scrambler Pre/De-emphasis Voice Scrambler	-	CTCSS DCS Programmable Tones	ADC, DAC, RAMDAC, GPIO, System Clocks	3.0 - 3.6	10.2	28-pin SOIC TSSOP
CMX881	Baseband Processor for PMR and Trunked Radio	PMR Trunked Radio	Filtering Compander Voice Scrambler Pre/De-emphasis Limiter	FFSK/ MSK	CTCSS DCS DTMF Selcall XTCSS Programmable Tones	ADC	2.7 - 5.5	5.5	28-pin SSOP TSSOP

Anaologue Two-way Radio Products

	Product Description	Radio Systems	Audio Processing	Data	Signalling	Aux Functions	Supply Voltage V	Typ. Current mA	Package Type
CMX882	Baseband Processor with GPS Data Signalling	PMR446 FRS MURS GMRS Leisure Radio	Filtering Compander Scrambler Pre/De-emphasis Limiter	FFSK/MSK	CTCSS, DCS	ADC	2.7 - 5.5	5.5	28-pin TSSOP
CMX883	Baseband Processor	PMR446 FRS MURS GMRS Leisure Radio	Filtering Compander Scrambler Pre/De-emphasis Limiter	-	CTCSS, DCS	ADC	2.7 - 5.5	5.5	28-pin TSSOP
CMX838	Family Radio Processor	FRS GMRS PMR446	Filtering Pre/De-emphasis Limiter	-	CTCSS	RF Synthesiser	2.7 - 5.5	13	28-pin TSSOP
CMX823	Programmable Paging Tone Decoder	Tone Paging	-	-	Selcall	-	2.7 - 5.5	1	16-pin SSOP

EV1480 Evkit



Applications

- General Two-way Radio
- Analogue PMR/LMR
- Trunked Radio
- FRS, GMRS, MURS and PMR446
Leisure Radio
- Wireless Data Comms
- Fixed and Rolling Code Voice Scramblers
- Status and Alarm Systems
- Portable and Mobile Radios
- On-site Repeaters
- Community Base Stations
- Marine VHF Radio
- Aviation Radio
- Amateur Radio
- National Weather Radio Systems
- Paging Systems
- Tone Squelch Systems
- Tone Signalling
- Door Access and Gate Entry



Digital PMR/LMR Products

CML offers a wide range of voice, signalling and data processing ICs for digital communications systems, integrating baseband processing and systems - specific Air Interface.

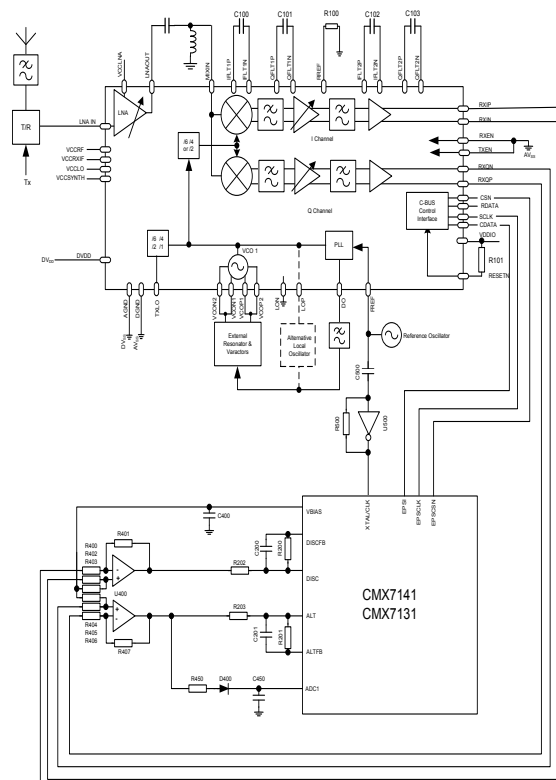
Features include: vocoder support, layer 1 and layer 2 of system Air Interface data coding, data modems, plus auxiliary functions supporting the overall radio design. Solutions are available for both FDMA and TDMA based PMR/LMR systems.

FDMA systems

dPMR446, dPMR mode 1/2/3, NXDN, ARIB-STD T98 and ARIB-STD T102

	Product Description	FDMA Systems	TDMA Systems	LD or I/Q Interface	Embedded Functions	Supply Voltage V	Typ. Current mA	Package Type
CMX7861	FirmCODEC™ Programmable Basedband Interface for DSP/Microcontroller	Universal	Universal	I/Q	Audioband Codec Channel Filters AUX ADCs, DACs, RAMDAC, GPIO and System Clocks	3.0 - 3.6	3	64-pin LQFP 64-pin VQFN
CMX7131 CMX7141	Multi-standard Digital PMR Processor	dPMR446 dPMR™ Mode 1/2/3 ARIB STD-T98 DCR/ARIB STD-T102 NXDN™ AnaloguePMR	-	LD or I/Q	Air Interface Protocols: Physical and Data Link Layers Audioband Codec AUX ADCs/DACs, RAMDAC, 4FSK, GPIO and System Clocks	3.0 - 3.6	4.4	64-pin LQFP 64-pin VQFN
CMX8341	Dual Mode Analogue/Digital PMR Processor	dPMR446 Analogue PMR	-	LD	Air Interface Protocol, Physical and Data Link Layers AUX ADCs/DACs, RAMDAC, GPIO and System Clocks Embedded RALCWI 2400bps Vocoder and 4FSK Modem.	3.0 - 3.6	4.4	100-pin LQFP

DE9944 Demo Kit

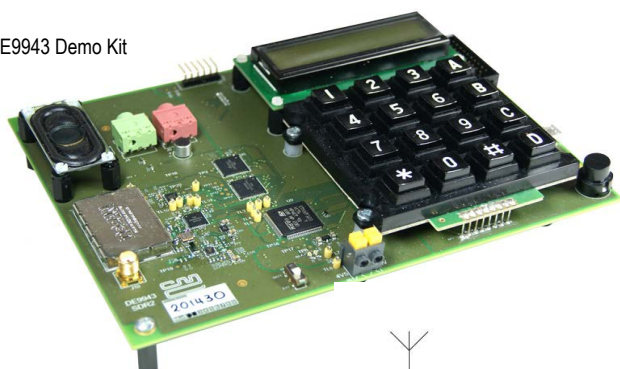


TDMA systems

TETRA, DMR, APCO P25, PDT

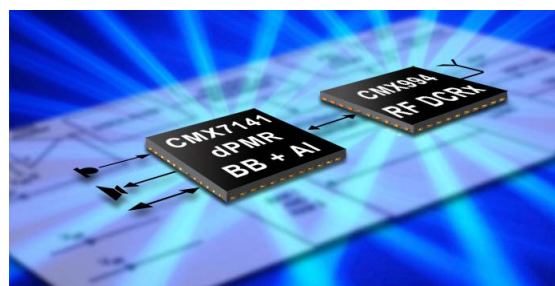
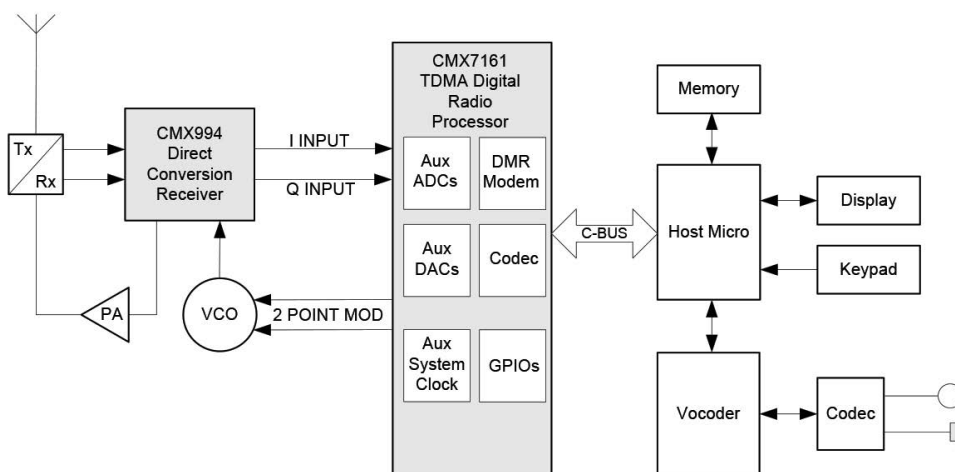
	Product Description	FDMA Systems	TDMA Systems	LD or I/Q Interface	Embedded Functions	Supply Voltage V	Typ. Current mA	Package Type
CMX7861	FirmCODEC™ Programmable Baseband Interface for DSP/Microcontroller	Universal	Universal	I/Q	Audioband Codec Channel Filters AUX ADCs, DACs, RAMDAC, GPIO and System Clocks	3.0 - 3.6	3	64-pin LQFP 64-pin VQFN
CMX981	Advanced Digital Radio Baseband Processor	-	TETRA APCO P25	I/Q	Channel Filters Audioband Codec AUX ADCs/DACs, RAMDAC, GPIO and Speaker Amp	2.25 - 2.75 (3.6 Tol I/O)	-	64-pin VQFN
CMX7161	TDMA Digital Radio Processor	-	DMR	I/Q	Audioband Codec Channel Filters AUX ADCs, DACs, RAMDAC, GPIO and System Clocks DMR Modem	3.0 - 3.6	-	64-pin LQFP 64-pin VQFN

DE9943 Demo Kit



Applications

- FDMA Systems
 - dPMR446, dPMR mode 1
 - NXDN,
 - ARIB STD-T102
 - ARIB STD-T98
 - DCR
- TDMA systems
 - TETRA, APCO P25
 - DMR, PDT
 - RCR-39
- Digital WLL
- Satcoms Terminals
- Aviation Systems
- Mixed-mode Analogue/Digital Radios
- Military Communications



Wireless Data Products

CML's wireless data products address a wide range of communications and control applications, offering operation to custom, freeformat and packet data systems.

Most common data-transfer protocols are catered for at a range of speeds from 1.2kbps to 200kbps, utilising: FSK, FFSK, GMSK, 2/4FSK and QAM modulation schemes.

The advent of CML's FirmASIC® technology has enabled the availability of the Multi-Mode Packet Data Modem offering configurable GMSK/GFSK, 2/4FSK, FFSK/MSK and QAM modulation schemes by the up-loading the appropriate Function Image™ file.

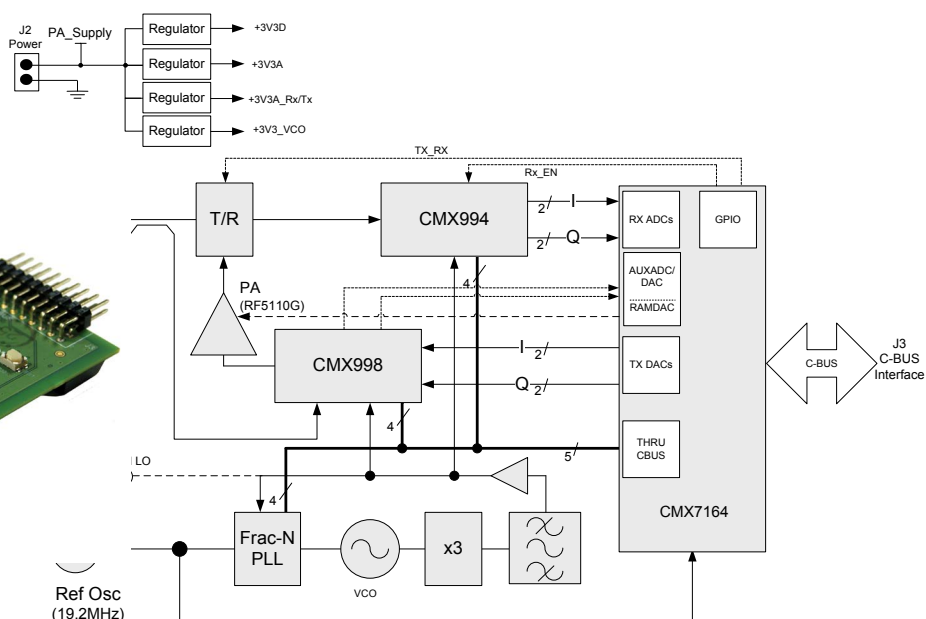
The CMX7164 multi-mode (GMSK, 2/4FSK and QAM) Packet Data Modem and CMX7163 QAM Packet Data Modem are complemented by CML's range of RF products, enabling highly-integrated wireless data modems to be implemented.

	Product Description	Modulation Schemes	Data Range kbps	Supply Voltage V	Typ. Current mA	Package Type	Auxiliary Features	Key Benefits
CMX7164	Multi-mode (I/Q) Wireless Data Modem	GMSK/GFSK 2/4 FSK 4/16/64 QAM	GMSK <=19.2 4 FSK <=20 QAM <96	3.0 - 3.6	Rx 17.9 Tx 12.7	64-pin VQFN LQFP	ADCs, DACs System Clocks GPIO RAMDAC	Multi-mode packet data modem for I/Q based systems
CMX7163	QAM (I/Q) Wireless Data Modem	4/16/64 QAM	QAM <=96	3.0 - 3.6	Rx 18.7 Tx 15.5	64-pin VQFN LQFP	ADCs, DACs System Clocks GPIO RAMDAC	High speed QAM packet data modem for I/Q based systems
CMX7143	Multi-mode Wireless Data Modem	FFSK/MSK GMSK/GFSK 4FSK	FFSK <=2.4 GMSK <=19.2 4FSK <=20	3.0 - 3.6	Rx 11.7 Tx 15.7	48-pin VQFN LQFP	ADCs, DACs System Clocks GPIO RAMDAC	Multi-mode packet data modem for RF LD systems

Wireless Data Products

	Product Description	Modulation Schemes	Data Range kbps	Supply Voltage V	Typ. Current mA	Package Type	Auxiliary Features	Key Benefits
CMX969	RD-LAP, MDC4800 Motient/ARDIS Packet Data Modem	4FSK FSK	RD-LAP = 19.2 MDC = 4.8	2.7 - 5.5	4	24-pin TSSOP	-	RD-LAP, MDC2800, Motient/ARDIS conformance
CMX909B	GMSK Packet Data Modem	GMSK	38.4	2.7- 5.5	3	24-pin TSSOP SSOP	-	General purpose GMSK packet data modem
FX919B MX919B	4FSK Packet Data Modem	4FSK	19.2	3.0 - 5.5	4	24-pin SOIC	-	General purpose 4FSK packet data modem
FX929B	4FSK RD-LAP Packet Data Modem	4FSK	19.2	3.0 - 5.5	4	24-pin SOIC	-	RD-LAP conformance
CMX589A	Full-duplex GMSK Modem	GMSK/GFSK	<= 200	3.0 - 5.5	4	16-pin SOIC TSSOP	-	General purpose high speed GMSK modem data-pump
CMX469A	1200/2400/4800 Baud FFSK/MSK Modem	FFSK/MSK	1200 2400 4800	3.0 - 5.5	4.5	20-pin SOIC 24-pin TSSOP	-	General purpose audio-band FFSK modem data-pump

DE9941 Demo Kit



Applications

- ☐ Narrowband Radio Systems
- ☐ Data Over Radio
- ☐ Radio-paging
- ☐ Wireless Telemetry
- ☐ Machine-to-Machine (M2M)
- ☐ Wireless Control Systems
- ☐ Wireless Monitoring
- ☐ SCADA Implementations
- ☐ Traffic (Vehicle) Location
- ☐ Differential GPS
- ☐ ISM Bands
- ☐ Software Defined Radio (SDR)



Digital Voice Products

CML's DuraTALK® family of digital voice products comprises a range of flexible technologies supporting voice-data generation, coding, transcoding and decoding functions for digital communication systems, as well as many other in-band audio applications where there is a need for storage and playback.

The DuraTALK® family currently consists of the following technologies:

- TWELP™: Crystal clear digital voice for professional radio
- RALCWI™: CML's low bit-rate Vocoder
- Transcoding: On-chip multi-transcoding/conversion of data formats
- CVSD and ADM: Flexible error tolerant encoders/decoders

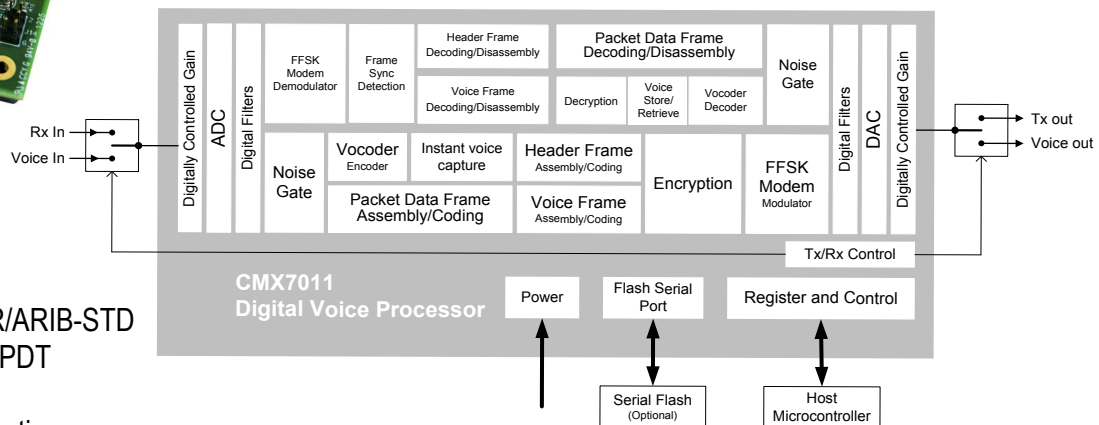
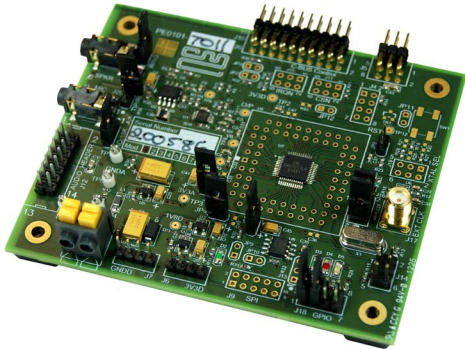
The flexible, low power, highly integrated TWELP™, RALCWI™, Transcoder and CVSD ICs are suited to wireless and wireline voice applications such as voice scramblers, alarm systems, military field applications and professional or leisure digital two-way radios.

	Product Description	Voice-data Scheme	Voice-band Codec	Supply Voltage V	Typ. Current mA	Package Type	Additional Features	Key Benefits
CMX7011	Digital Voice Encryption/ACE Processor	RALCWI™	Yes	3.0 - 3.6	30	48-pin VQFN 48-pin LQFP	I/O Filters Packet data Voice Storage Encryption	Complete voice encryption system including Air Interface protocol
CMX7262	Professional Radio 2400bps Vocoder	TWELP™	Yes	3.0 - 3.6	23	64-pin VQFN	I/O Filters	High performance low-bit rate Vocoder
CMX7261	Digital Voice Multi-transcoder	ADM CVSD PCM G.729A G.711	Yes	3.0 - 3.6	52	64-pin VQFN	I/O Filters	Performs as a group of audio codecs

Digital Voice Products

	Product Description	Modulation Schemes	Data Range kbps	Supply Voltage V	Typ. Current mA	Package Type	Auxiliary Features	Key Benefits
CMX608 CMX618 CMX638	Low-cost 2400bps Vocoder	RALCWI™	Yes (Not CMX608)	3.0 - 3.6	20	48-pin VQFN 48-pin LQFP	I/O Filters	Low-cost 2400bps Vocoder with robust FEC. CMX638 offer duplex operation
CMX649	Adaptive Delta Modulation (ADM) Codec	ADM PCM CVSD	Yes	2.7 - 5.5	2.9	20-pin TSSOP SOIC	I/O Filters	General purpose error tolerant voice coding scheme
CMX639	CVSD Voice Codec	CVSD	Yes	3.0 - 5.5	1.9	16-pin SOIC 24-pin TSSOP	I/O Filters	General purpose error tolerant voice coding scheme
FX609 MX609	CVSD CODEC	CVSD	Yes	4.5 - 5.5	3.5	24-pin PLCC SOIC	I/O Filters	General purpose error tolerant voice coding scheme
FX619	'Eurocom' Codec	CVSD	Yes	4.5 - 5.5	4.5	24-pin PLCC SOIC	I/O Filters	CVSD Codec conforming to the 'Eurocom' standard
MX629	'Military' Delta Modulation Codec	CVSD	Yes	4.5 - 5.5	5.5	24-pin PLCC	I/O Filters	CVSD Codec conforming to MIL-STD 188-113

PE0101-7011 Evkit



Applications

- Digital FDMA Radios: dPMR/ARIB-STD
- Digital TDMA Radios: DMR/PDT
- Voice-over IP (VoIP)
- Voice Scrambling and Encryption
- Digital Wireless Local Loop
- Military Communications
- Satcom Terminals
- Terrestrial Flight Telephone Systems
- Cordless Telephones
- Alarm Systems
- Voice Store and Forward
- Voice Annunciators
- Voice Store and Retrieval
- Call Center Call Logging
- Delay Lines

DuraTALK®

Marine Comms Products

CML offers an increasing range of voice and data communication ICs in the support of marine safety equipments.

AIS has become the essential navigation/safety equipment onboard leisure sailing yachts/motor cruisers, through to commercial vessels (fishing, cargo and passenger ships).

CML's AIS products include all the necessary signalling functionality, including the GMSK modem, DSC modem and embedded AIS protocol. AIS Class A, AIS Class B, AIS Rx only applications, AIS-SART, MOB/PLB and marine VHF voice communications are all supported.

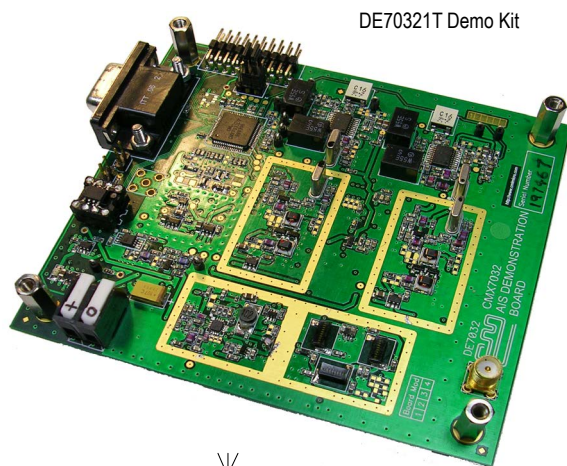
A VHF marine radio is an essential piece of equipment in both coastal and deep-water operations.

CML provides complete world voice signalling and data solutions supporting voice communication, DSC, ATIS, DTMF, NWR WAT and SAME.

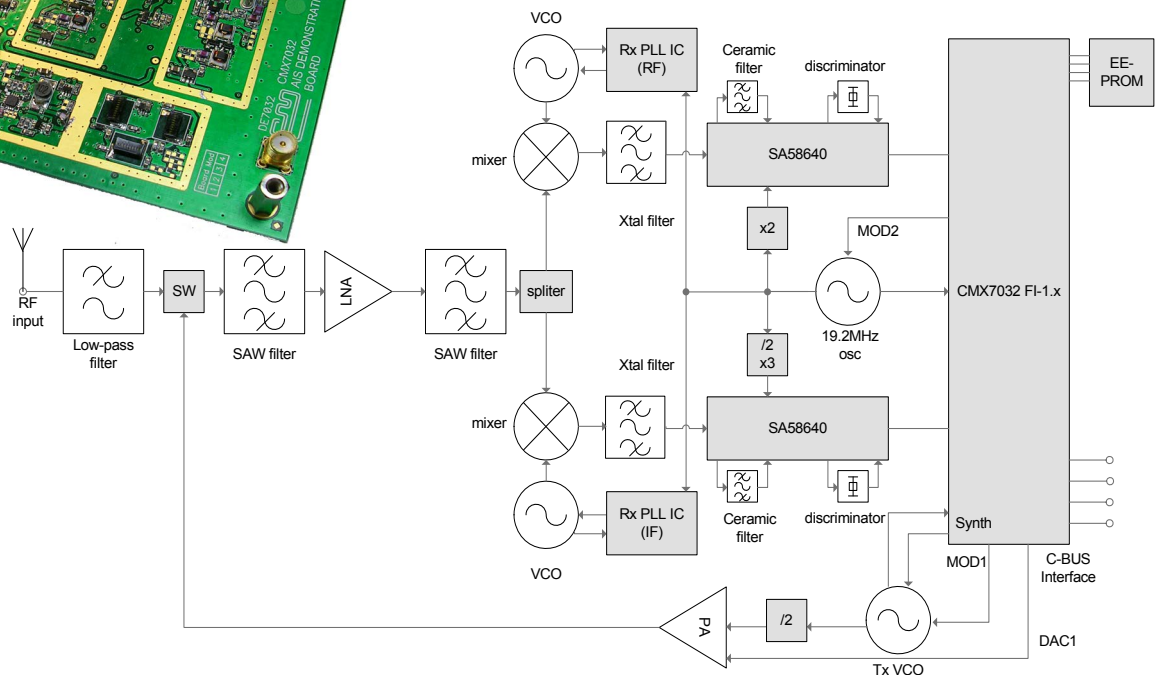
	Product Description	AIS	Modem	Voice	Auxiliary Functions	Supply Voltage V	Typ. Current mA	Package Type	Key Benefits
CMX885	Marine VHF Processor	-	DSC	Yes	ADCs DACs RAMDAC System Clks	3.0 - 3.6	8mA	48-pin VQFN 48-pin LQFP	Low cost Marine VHF voice and DSC processing Includes ADCs, DACs, RAMDAC and system clocks
CMX7045	AIS-SART Processor	SART PLB MOB	GMSK DSC	-	ADCs DACs RAMDAC System Clks	3.0 - 3.6	20mA	48-pin VQFN 48-pin LQFP	Embedded AIS-SART Air-Interface
CMX7042	AIS Baseband Processor	Class B Dual Rx	GMSK DSC	-	ADCs DACs RAMDAC System Clks	3.0 - 3.6	20mA	48-pin VQFN 48-pin LQFP	Function Images support: AIS Class B Dual AIS Rx

Marine Comms Products

	Product Description	AIS	Modem	Voice	Auxiliary Functions	Supply Voltage V	Typ. Current mA	Package Type	Key Benefits
CMX7032	AIS Baseband Processor with RF Synthesisers	Class B Dual Rx	GMSK DSC	-	ADCs DACs RAMDAC System Clks	3.0 - 3.6	20mA	64-pin VQFN 64-pin LQFP	CMX7042 + RF synthesisers
CMX910	AIS Class A Baseband Processor	Class A	GMSK DSC	-	ADCs DACs	3.0 - 3.6	35mA	64-pin VQFN	Complete AIS Class A processor

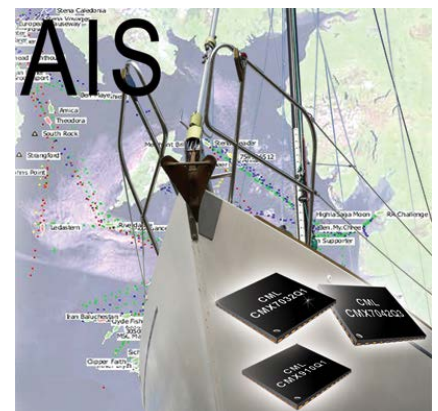


DE70321T Demo Kit



Applications

- ☐ Automatic Identification System (AIS)
- ☐ AIS Class A transponder
- ☐ AIS Class B transponder
- ☐ AIS-SART (Search and Rescue Transmitter)
- ☐ Man overboard systems (MOB)
- ☐ Personal Location Beacon (PLB)
- ☐ Aids to Navigation (ATON)
- ☐ Marine VHF Radio
- ☐ Automatic Transmission Identification System (ATIS)
- ☐ Asset tracking
- ☐ Coastal security



Wireline Telecom - Modems Products

CML's Low Power Wireline Modem products are employed worldwide in all types of communication applications.

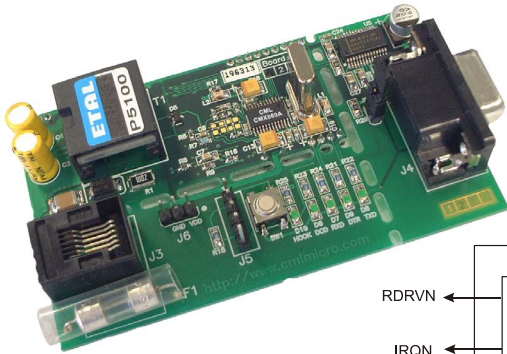
CML's highly integrated ICs demand very little power or μ C assistance, a factor that often means that the products can be line powered.

The wireline data IC range covers most relevant ITu-T V recommendations and compatible Bellcore data specifications. These single chip wireline data products offer a full suite of wireline signalling functions to cater for complete system operations from line and call set-up right through to the completed data transaction.

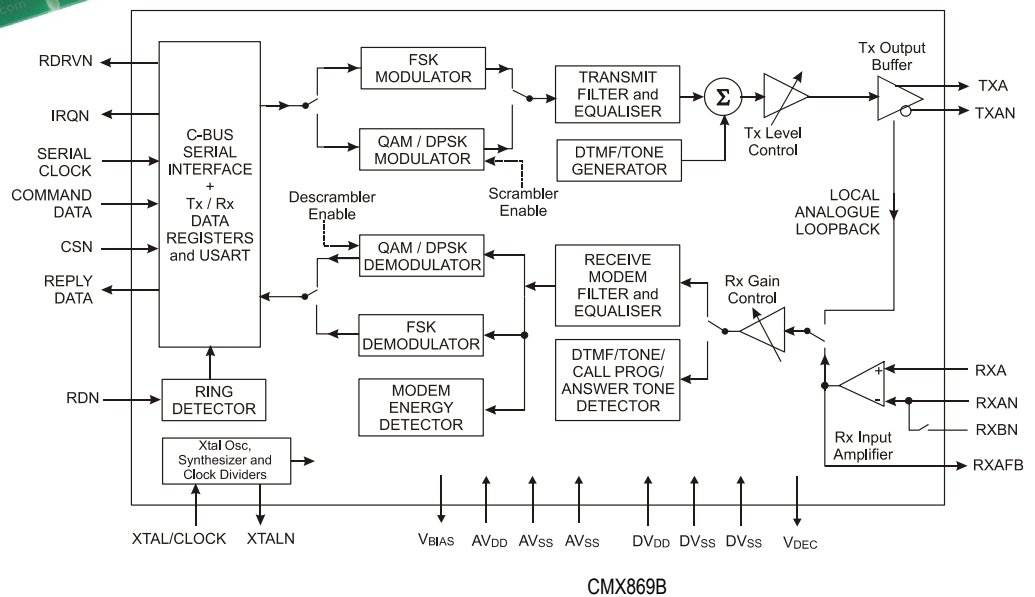
	Product Description	V.32	V.22	V.23	V.21	Bell 202	Bell 103	DTMF	CLI	Supply Voltage V	Typ. Current mA	Package Type	Key Benefits
CMX869B	V.32 bis Modem	Y bis	Y bis	Y	Y	Y	Y	Y	Y	3.0 - 3.6	8.6	24-pin SOIC TSSOP	Ring Detect USART Hybrid support Line equalisation
CMX868A	V.22 bis Modem	-	Y bis	Y	Y	Y	Y	Y	Y	2.7 - 5.5	3.0	24-pin SOIC SSOP	Ring Detect USART Hybrid support Line equalisation
CMX867A	V.22 Modem	-	Y	Y	Y	Y	Y	Y	Y	2.7 - 5.5	3.0	24-pin SOIC TSSOP	Ring Detect USART Hybrid support Line equalisation
CMX866	V.22 Modem with AT Commands	-	Y	Y	Y	Y	Y	Y	Y	2.7 - 5.5	5	28-pin SSOP	Ring Detect USART Hybrid support Line equalisation
CMX865A	DTMF/FSK Combo	-	-	Y	Y	Y	Y	Y	Y	3.0 - 3.6	4.0	16-pin SOIC TSSOP	Hybrid support and Audio codec access

Wireline Telecom - Modems Products

	Product Description	V.32	V.22	V.23	V.21	Bell 202	Bell 103	DTMF	CLI	Supply Voltage V	Typ. Current mA	Package Type	Key Benefits
CMX860	Telephone Signalling Transceiver	-	-	Y	-	Y	-	Y	Y	2.7 - 5.5	3	28-pin SOIC	Hybrid support
CMX850	Communications Controller With Embedded 8051	-	Y	Y	Y	Y	Y	Y	Y	3.0 - 3.6	6.8	100-pin LQFP	Line reversal detect Off-hook detect Watch-dog timer UART AUX ADC PWM outputs Embedded 8051
FX604 MX604	V.23 Compatible Modem	-	-	Y	-	-	-	-	-	3.0 - 5.5	1.0	16-pin SOIC	PABX applications
FX614 MX614	Bell 202 Compatible modem	-	-	-	-	Y	-	-	-	3.0 - 5.5	1.0	16-pin SOIC	Ideally suited to WLL, FWT, CWT, HART applications



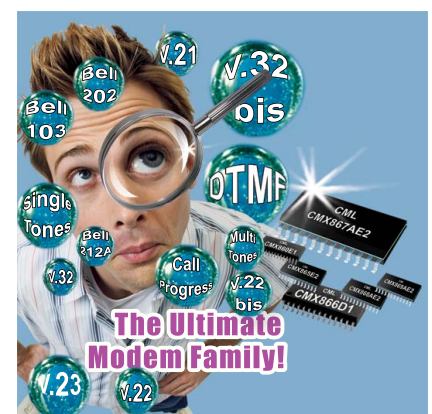
DE8691 Demo Kit



CMX869B

Applications

- ☐ Low power wireline modems
- ☐ Wireline telemetry
- ☐ Pair-gain systems
- ☐ Public Switched Telephone Network (PSTN)
- ☐ Least cost routers
- ☐ Internet appliances
- ☐ Remote meter reading
- ☐ Set-top boxes
- ☐ Subscriber pulse metering
- ☐ Wireless Local Loop (WLL)
- ☐ Banking/billing systems



Wireline Telecom - Telephony Products

CML's wireline telephony products cover all aspects of a telephone system's operating requirements in the analogue, digital and mixed signal fields and are employed worldwide in all types of communication applications.

CML's highly integrated ICs perform the majority of telecoms voice, signalling and data functions whilst demanding very little power or μ C assistance, a factor that often means that the product can be line powered.

Analogue, digital and mixed-mode (POTS-to-ISDN) products are also available singularly, or in multi-feature combinations.

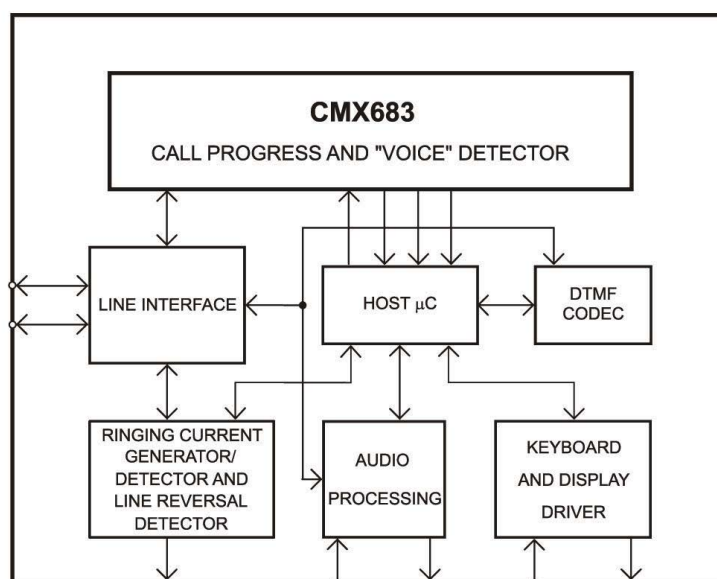
The telephony range of IC products covers all of the voice and signalling requirements of a modern day telephone system.

From Rx/Tx DTMF, calling-line ID and call progress functions through-to voice recognition in both the digital and analogue domains, these products also offer on-chip line/phone interfacing.

	Product Description	Digitally Controlled Amplifiers	Data	Signalling	Supply Voltage V	Typ. Current mA	Package Type	Key Benefits
MX019	Digitally Controlled Quad Amp Array	4	-	-	4.5 - 5.5	1.5	16-pin SOIC	General purpose digitally controlled quad amplifier array
FX029 MX029	Digitally Controlled Amplifier Array	2	-	-	4.5 - 5.5	3	16-pin SOIC	General purpose digitally controlled dual amplifier array
CMX673	Call Progress Tone Detector	-	-	Single Call Progress Dual Tone Detectors	2.7 - 5.5	0.5	16-pin SOIC 20-pin TSSOP	Universal call progress detector
CMX683	Call Progress Tone Detector Plus Voice Detector	-	-	Single Call Progress Dual Tone Detector	2.7 - 5.5	0.6	16-pin SOIC TSSOP	Call progress detector with voice detection
CMX602B	Calling Line Identifier Plus Call Waiting	-	V.23 Demodulation	CLI Decoder CIDCW Decoder	2.7 - 5.5	0.5	16-pin SOIC TSSOP	Featurephone applications

Wireline Telecom - Telephony Products

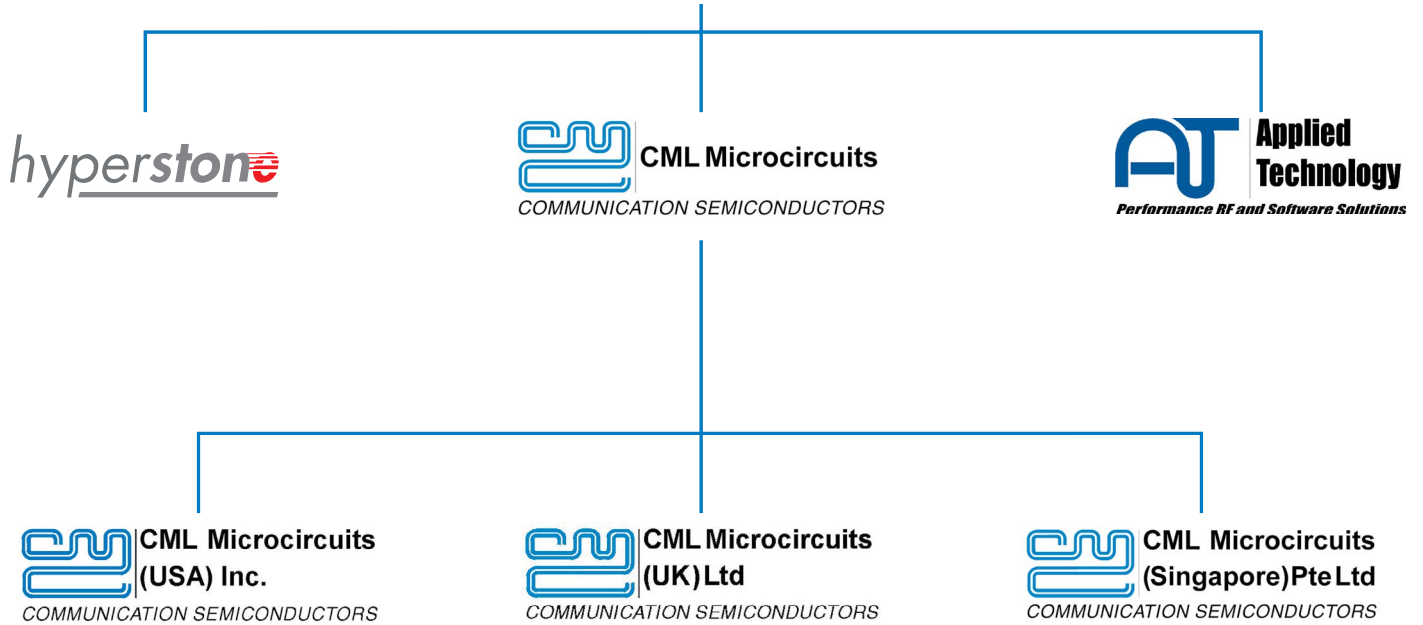
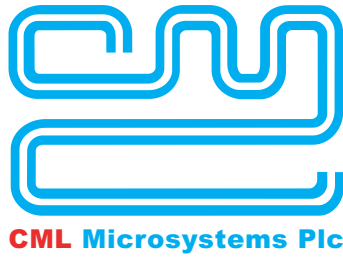
	Product Description	Digitally Controlled Amplifiers	Data	Signalling	Supply Voltage V	Typ. Current mA	Package Type	Key Benefits
CMX612	Calling Line ID Plus Tone Decode for VMW	-	V.23/Bell 202 Demodulation	CLI Decoder CIDCW Decoder VMWI Decoder	2.7 - 5.5	0.5	20-pin TSSOP	Featurephone applications
CMX631A	SPM Detector	-	-	SPM Detector (12kHz/16kHz)	2.7 - 5.5	0.8	16-pin SOIC PDIP 24-pin SSOP	Payphone applications
CMX641A	Dual SPM Detector Plus Payphone Security	-	-	Dual SPM Detector (12kHz/16kHz)	2.7 - 5.5	1.2	24-pin SOIC	PABX applications
CMX605	Digital-to-Analogue (POTS) Signalling Interface with DTMF Encoder Decoder	-	FSK V.23/Bell 202	DTMF SPM Generation Ringing Signals Flexible Tones Fax/Answer Originate	2.7 - 5.5	1.6	16-pin PLCC	Ideally suited to WLL, FWT, CWT applications



Applications

- ☐ Low power wireline
- ☐ Modems and wireline telemetry
- ☐ Telephones, Featurephones
- ☐ Payphones and PABX
- ☐ Calling line ID (CLI)
- ☐ Public Switched Telephone Network (PSTN)
- ☐ Integrated System Digital Network (ISDN)
- ☐ Least cost routers
- ☐ Pair-gain systems
- ☐ Internet appliances
- ☐ Set-top boxes
- ☐ Remote meter reading
- ☐ Subscriber pulse metering
- ☐ Wireless Local Loop (WLL)





Custom ASIC Design Resources

CML Microcircuits offers a complete 'turnkey' service for the design and supply of custom ASIC solutions. Supporting all stages of ASIC development, from concept through design, layout, prototype-testing and the supply of production tested devices.

Through CML, customers gain access to leading-edge technologies and a design team with extensive expertise specialising in: Analogue, Digital, Mixed-Signal, Memory and RF integrated circuit design.

Technologies available encompass state-of-the-art processes and geometries, including: CMOS, BiCMOS, BiPOLAR and SiGe.

Extensive custom cell libraries are available comprising: logic, analogue/mixed-signal, digital; including memory, μ Controller, RISC/DSP and IP cores.

FirmASIC® is a CML proprietary technology that has been successfully deployed in a wide range of standard and custom product offerings.

Key benefits of this technology include: fast time-to-market, low cost, low risk, small footprint and unsurpassed flexibility.

A growing family of approved and stable FirmASIC® hardware platforms is available, each providing a different mix of fixed and re-definable functions.

The whole essence of FirmASIC® is delivering a product with the right feature mix, performance and cost for a specific target application, in the shortest possible time.

For more information on CML's Design Resource please speak to your local CML contact or enquire on-line via the home page of our website: www.cmlmicro.com.



Embedded Products

As part of CML's extensive wireline portfolio, CML features the CMX850 Communications Controller IC.

This extremely compact and low-power modem/ μ Controller integration satisfies all of the communications, control, data and signalling requirements of any wireline end-product using on-line communications.

Hyperstone, a fabless semiconductor company and a member of the CML Plc Group, offers a wide range of microprocessor and microcontroller products based on unified RISC/DSP architecture.

Hyperstone Inc., based in the USA, represents the full range of Hyperstone products in North and South America, providing distribution and product engineering support.

Focus Products

- ☐ E2 RISC/DSP Microcontroller
- ☐ hyNet XS and S Communication Controllers
- ☐ F4 and S6 Flash Memory Controllers
- ☐ Integrated Development Tools Available



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