MICRONAS

DATA COMMS

MAS 2122 300/1200 BPS CMOS FULL DUPLEX MODEM

T-75-33-05

FEATURES

- Internal Universal Asynchronous Receiver Transmitter (UART)
- DTMF or Pulse Dialing
- Call Progress Tone Detection
- Automatic Modem Handshaking
- Low Power, less than 300 mW at ±5 Vdc
- Operating Modes –
  - Asynchronous: 0 – 300 BPS FSK
    - 1200 and 600 BPS PSK
    - Normal: +1 to −2.5%
    - Overspeed: +2.3 to −2.5%
  - Synchronous: 1200 and 600 BPS PSK
  - Character Length: 8, 9, 10 or 11 bits
- DTE Interface
  - Electrical: CMOS/LSTTL Compatible
  - Functional:
    Microprocessor Bus (Data/Control)
    RS-232C TTL Level (Data/Control)
- Operation: 2-Wire Full Duplex
- Software Selected Fixed Compromise Equalization
- Test Configurations:
  - Local Analog Loop
  - Remote Digital Loop

APPLICATIONS

- CCITT V.22 A, B and V.21 Modems
- Bell 212A, 103 and 113 Modems

PIN CONFIGURATIONS

Extended Mode – μP Controlled

MAS 7246 (EXTENDED)

Pin	Signal		Pin	Signal
1	DB7		28	TXC
2	DB6		27	TXD
3	DB5		26	GNDD
4	DB4		25	ALE
5	DB3		24	SYN
6	DB2		23	CLK
7	DB1		22	SOF
8	DB0		21	SIF
9	CE		20	TXS
10	A1		19	VDD
11	A0		18	REL
12	RD		17	RNG
13	WR		16	RXD
14	INT		15	RXC

MAS 724 (EXTENDED)

Pin	Signal		Pin	Signal
1	GNDA		22	GNDD
2	VSSA		21	RXL
3	VSSD		20	TXL
4	SYN		19	RXF
5	CLK		18	CAP2
6	VDDN		17	CAP1
7	SOF		16	XT2
8	SIF		15	XT1
9	TXS		14	MC1
10	VDDD		13	QLT
11	VDDA		12	RXS

Basic Mode – RS-232C Interface

MAS 7276 (BASIC)

Pin	Signal		Pin	Signal
1	IET		28	TXC
2	RTS		27	TXD
3	CCT		26	GNDD
4	SCR		25	IMC
5	ASY		24	SYN
6	LOP		23	CLK
7	CHN		22	SOF
8	OSP		21	PSK
9	AHS		20	TXS
10	CL2		19	VDD
11	CL1		18	CAR
12	CUM		17	SMI
13	CSM		16	RXD
14	QUA		15	RXC

MAS 7277 (BASIC)

| Pin	Signal		Pin	Signal
1	GNDD		40	RXL
2	GNDA1		39	TXL
3	GNDA2		38	R3
4	VSSA		37	LOP/C3
5	VSSD		36	RXF
6	N/C		35	CAP2
7	N/C		34	CAP1
8	SYN		33	CHN/C4
9	N/C		32	RIC/R4
10	CLK		31	PT2/C2
11	VDDN		30	EQH/R2
12	SOF		29	XT2
13	PSK/SIF		28	XT1
14	TXS		27	PT1/C1
15	N/C		26	CCT
16	VDDD		25	EQL/R1
17	VDDA		24	MC1
18	RXS		23	MC2
19	EDT		22	TL2
20	QLT		21	TL1

GENERAL DESCRIPTION

The MAS 2122 is a highly versatile full duplex modem composed of two CMOS LSI circuits. With the MAS 2122, 300 and 1200 bit per second data communications can be easily designed into a variety of systems using minimal additional components. In addition, the MAS 2122 is flexible enough to accept serial or parallel data, microprocessor or TTL level RS-232C interface and handshaking.

The MAS 2122 provides Bell 212A, 103, 113, and CCITT V.22 A, B and V.21 modem capability plus dual tone multi-frequency (DTMF) tone generation, call progress tone detection, an internal universal asynchronous receiver and transmitter (UART), and timing sequences for automatic handshaking. Using these features, the MAS 2122 can dial, monitor calls, and create asynchronous data as well as provide worldwide modem capability.

The MAS 2122 can be configured in two interface modes: extended or basic. The extended mode is intended for microprocessor controlled circuits while the basic mode is provided for TTL level RS-232C circuits. In the extended mode, 6 internal control and status registers can direct and monitor both ICs through the 8-bit data bus. Three control registers allow the user to set functions such as the transmission speed, Bell or CCITT modes, and odd or even parity.
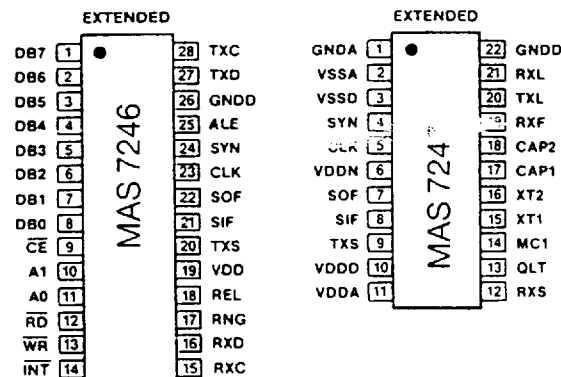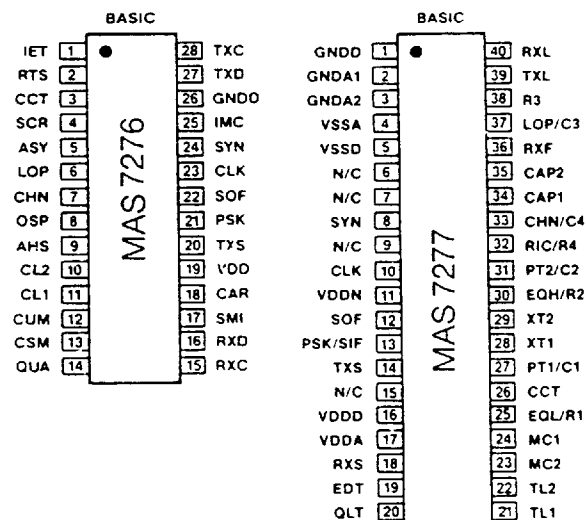
The MAS 2122 is designed for standalone as well as integrated modem applications. It can be used in computers, terminals, telephones, public branch exchanges, local area networks, and printers. Due to its low power usage and small size, the MAS 2122 will be especially advantageous in battery powered equipment such as portable computers.

For more detailed design information, please ask for the MAS 2122 Device Set Design Manual. In many uses, the MAS 2122 will require minimal outside control because of built-in functions such as the handshaking timing. In these cases, an undedicated microprocessor and brief software programs may be sufficient. For example, the surrounding, circuitry may be reduced to only the necessary Data Access Arrangement in the extended mode. In cases where additional circuitry is required, the 300mW power requirement of the MAS 2122 will help to keep the total power needs acceptable.