STANDARD MICROSYSTEMS CORPORATION
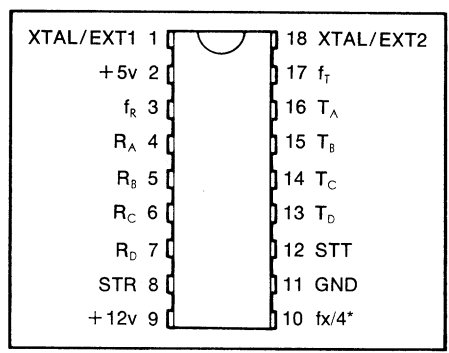
COM 5016
COM 5016T
COM 5036
COM 5036T

Dual Baud Rate Generator
Programmable Divider

FEATURES

- ☐ On chip crystal oscillator or external frequency input
- ☐ Choice of 2 x 16 output frequencies
- ☐ 16 asynchronous/synchronous baud rates
- ☐ DIRECT UART/USRT/ASTRO/USYNRT compatibility
- ☐ Full duplex communication capability
- ☐ High frequency reference output*
- ☐ TTL, MOS compatibility

PIN CONFIGURATION

XTAL/EXT1	1	18 XTAL/EXT2
+5v	2	17 f_T
f_R	3	16 T_A
R_A	4	15 T_B
R_B	5	14 T_C
R_C	6	13 T_D
R_D	7	12 STT
STR	8	11 GND
+12v	9	10 fx/4*

BLOCK DIAGRAM

*COM 5036/T only

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General Description

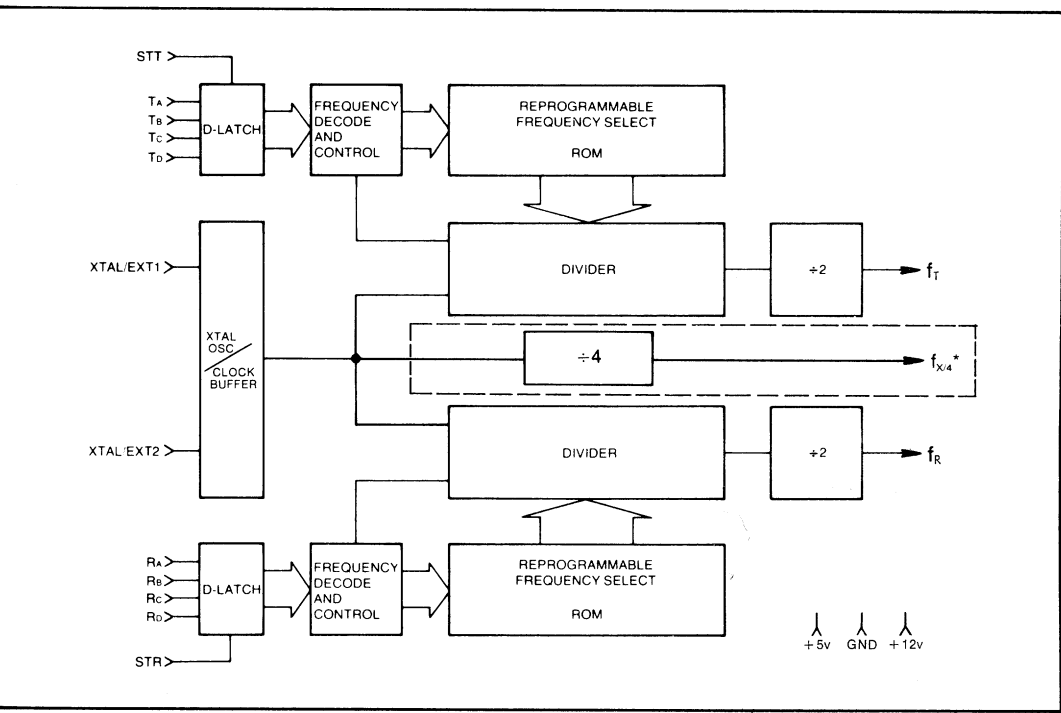The Standard Microsystems COM 5016/COM 5036 Dual Baud Rate Generator/Programmable Divider is an N-channel COPLAMOS® MOS/LSI device which, from a single crystal (on-chip oscillator) or input frequency is capable of generating 32 externally selectable frequencies.

The COM 5016/COM 5036 is specifically dedicated to generating the full spectrum of 16 asynchronous/synchronous data communication frequencies as shown in Table 1. One of the sixteen output frequencies is externally selected by four address inputs, on each of the independent dividers, as shown in Table 1.

Internal re-programmable ROM allows the generation of other frequencies from other crystal frequencies or input frequencies. The four address inputs on each divider section may be strobe (150ns) or DC loaded. As the COM 5016/COM 5036 is a dual baud rate generator, full duplex (independent receive and transmit frequencies) operation is possible.

The COM 5016/COM 5036 is basically a programmable 15-stage feedback shift register capable of dividing any modulo up to $(2^{15}-1)$.

By using one of the frequency outputs it is possible to generate additional divisions of the master clock frequency by cascading COM 5016/COM 5036's. The frequency output is fed into the XTAL/EXT input on a subsequent device. In this way one crystal or input frequency may be used to generate numerous output frequencies.

The COM 5016/COM 5036 can be driven by either an external crystal or TTL logic level inputs; COM 5016T/COM 5036T is driven by TTL logic level inputs only.

The COM 5036 provides a high frequency reference output at one-quarter (1/4) the XTAL/EXT input frequency.

Description of Pin Functions

Pin No.	Symbol	Name	Function
1	XTAL/EXT1	Crystal or External Input 1	This input is either one pin of the crystal package or one polarity of the external input.
2	V_{CC}	Power Supply	+5 volt supply
3	f_R	Receiver Output Frequency	This output runs at a frequency selected by the Receiver divisor select data bits.
4-7	R_A, R_B, R_C, R_D	Receiver-Divisor Select Data Bits	The logic level on these inputs, as shown in Table 1, selects the receiver output frequency, f_R.
8	STR	Strobe-Receiver	A high level input strobe loads the receiver data (R_A, R_B, R_C, R_D) into the receiver divisor select register. This input may be strobed or hard-wired to a high level.
9	V_{DD}	Power Supply	+12 volt supply
10	$f_X/4^*$	$f_X/4$	¼ crystal/clock frequency reference output.
11	GND	Ground	Ground
12	STT	Strobe-Transmitter	A high level input strobe loads the transmitter data (T_A, T_B, T_C, T_D) into the transmitter divisor select register. This input may be strobed or hard-wired to a high level.
13-16	T_D, T_C, T_B, T_A	Transmitter-Divider Select Data Bits	The logic level on these inputs, as shown in Table 1, selects the transmitter output frequency, f_T.
17	f_T	Transmitter Output Frequency	This output runs at a frequency selected by the Transmitter divisor select data bits.
18	XTAL/EXT2	Crystal or External Input 2	This input is either the other pin of the crystal package or the other polarity of the external input.

*COM 5036/T only   For electrical characteristics, see page 221.