

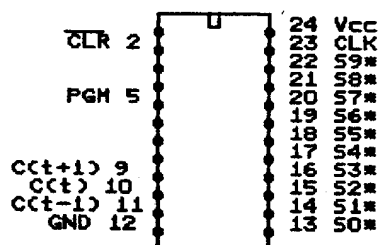
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T-46-1305

CA001 GPS C/A CODE
CODE GENERATOR

(Preliminary)

PRELIMINARY

CA001 C/A Code
Generator(*Planned parallel state output..
Not currently implemented).Description

The CA001 GPS C/A Code Generator is a serially programmable code generator, that is capable of generating all of the C/A codes transmitted by the Global Positioning Satellite (GPS). The code generator can be quickly programmed, by clocking a 20 bit serial code selection word into the device. To program the generator, the device is initially cleared by applying a low level clear pulse the CLR line. The serial code is then clocked into the PGM input on the rising edge of a clock signal applied to the CLK input. Once the twenty bit code has been clocked in, the PGM line must be held at a logic zero until it is necessary to reprogram the generator. With the PGM line held low, the desired C/A code will be clocked out on the rising edge of the CLK input. Three outputs are available to provide the necessary delayed codes for tau-dither or delay-lock correlator implementations. By choosing output C(t) as a reference (or on-time code), the C(t+1) output will be advanced one bit, while the C(t-1) output will be delayed one bit. Alternatively, the user may select adjacent outputs, (e.g. C(t) and C(t+1)) for correlator implementations involving half bit delays.

The standard CA001 Code Generator utilizes low power schottky surface mount technology. However, because standard SMD packaging is used, the generator can also be constructed using other devices such as standard TTL, Schottky TTL or HCMOS, as well as Mil-Spec and commercial packaging.

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Code Nr. Delay Pair Program Word (Hexadecimal)

Char Ø	0,0	80820
1	2,6	DOBE5
2	3,7	80160
3	4,8	400B0
4	5,9	20058
5	1,9	55EF6
6	2,10	2AF7B
7	1,8	A9AB0
8	2,9	54D58
9	3,10	2A6AC
10	2,3	108D3
11	3,4	E00FB
12	5,6	A46E5
13	6,7	BA7E0
14	7,8	5D3F0
15	8,9	2E9FB
16	9,10	174FC
17	1,4	E1A82
18	2,5	70D41
19	3,6	D0232
20	4,7	68119
21	5,8	DC41E
22	6,9	6E20F
23	1,3	11B7D
24	4,6	3824B
25	5,7	F45B7
26	6,8	926A9
27	7,9	A17B6
28	8,10	50BDB
29	1,6	D184B
30	2,7	808B7
31	3,8	A80C9
32	4,9	BC4F6
33	5,10	5E27B
34	4,10	E26D5
35	1,7	81B19
36	2,8	A891E

Technical Specifications
(Low Power Schottky)

Power: 5Vdc @ 64 ma. (typ.) 108 ma.(max.)
 Clock 25 Mhz (min) 36 Mhz (typ.)
 tPHL 24 ns (typ.) 36 ns (max.) CLR in to Q out (high-low transition)
 tPHL 17 ns (typ.) 27 ns (max.) CLK in to Q out (high-low transition)
 tPLH 21 ns (typ.) 32 ns (max.) CLK in to Q out (low-high transition)
 tC 0 ns [delay between C(t+1), C(t), C(t-1)]

Operating Temperature: 0 - 70 deg. C. (74LS)
 -65 to 150 deg. C (54LS) (preliminary)