Ying Leung International Ltd.
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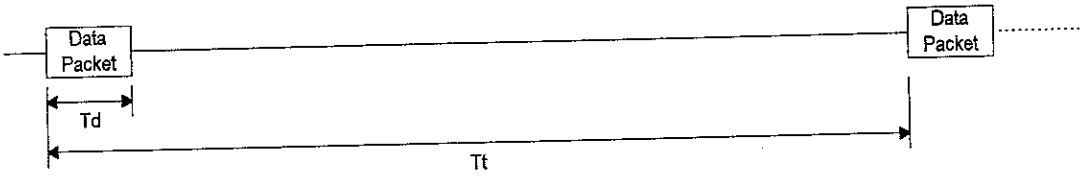
Technical Description:

Description of Transmission signal of Friend Finder:

The unit will transmit data periodically. Once a data packet is transmitted, the unit will stay in silent period until another data packet is transmitted. The length of silent period depends on the length of data packet.

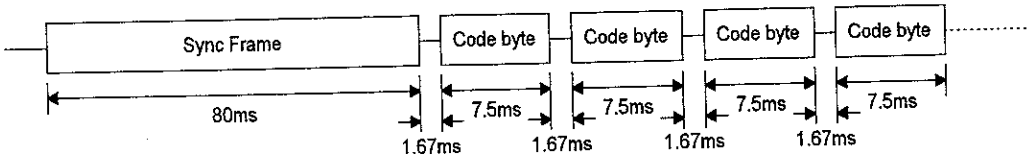


where Td is data packet length, and
Tt is time between data packets.

- Figure 1 -

Data Packet:

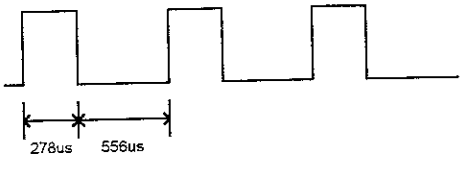
A data packet is divided into one "Sync Frame" and "Code byte" as illustrated in Figure 2.



- Figure 2 -

Sync Frame consists of 96 "Sync Bit" as illustrated in Figure 3. The Sync Frame will last for 80ms and then followed by Code bytes.

Sync Bit:



- Figure 3 -

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Each code byte consists of 9 code bits and the transmission rate is 1200bps. Thus each code byte duration is 9/1200 = 7.5ms. Before a code byte is sent, there is a delay of 2 bits transmission time equals to 1.67ms for separation between code bytes.

The length of data packet Td depends on how many code bytes are sent within the data packet by following formula.

Td = (no. of code bytes) x (7.5+1.67)ms + 80ms

The minimum number of code bytes is 1 and the maximum number of code bytes is 90. Thus minimum length of Td is 89.2ms and maximum length of Td is 905ms.

Time between Data Packets:

Table 1 shows the relationship between length of data packet Td and time between data packets Tt. In general, the time Tt will not less than 30 times of pervious transmitted signal and not less than 10.5sec.

no. of code bytes	Td (ms)	Tt (sec)	
		min	max
1 ~ 28	89.2 ~ 337	10.5	12.5
29~ 30	346 ~ 355	11.0	13.0
31	364	11.5	13.5
32~ 33	373 ~ 383	12.0	14.0
34~ 35	392 ~ 401	12.5	14.5
36~ 37	410 ~ 419	13.0	15.0
38~ 39	428 ~ 438	13.5	15.5
40	447	14.0	16.0
41~ 42	456 ~ 465	14.5	16.5
43~ 44	474 ~ 483	15.0	17.0
45~ 46	493 ~ 502	15.5	17.5
47	511	16.0	18.0
48~ 49	520 ~ 529	16.5	18.5
50~ 51	538 ~ 548	17.0	19.0
52~ 53	557 ~ 566	17.5	19.5
54~ 55	575 ~ 584	18.0	20.0
56	593	18.5	20.5
57~ 58	603 ~ 612	19.0	21.0
59~ 60	621 ~ 630	19.5	21.5
61~ 62	639 ~ 648	20.0	22.0
63	658	20.5	22.5
64~ 65	667 ~ 676	21.0	23.0
66~ 67	685 ~ 694	21.5	23.5
68~ 69	703 ~ 713	22.0	24.0
70~ 71	722 ~ 731	22.5	24.5
72	740	23.0	25.0
73~ 74	749 ~ 758	23.5	25.5
75~ 76	768 ~ 777	24.0	26.0
77~ 78	786 ~ 795	24.5	26.5
79	804	25.0	27.0
80~ 81	813 ~ 823	25.5	27.5
82~ 83	832 ~ 841	26.0	28.0
84~ 85	850 ~ 859	26.5	28.5
86~ 87	868 ~ 878	27.0	29.0
88	887	27.5	29.5
89~ 90	896 ~ 905	28.0	30.0

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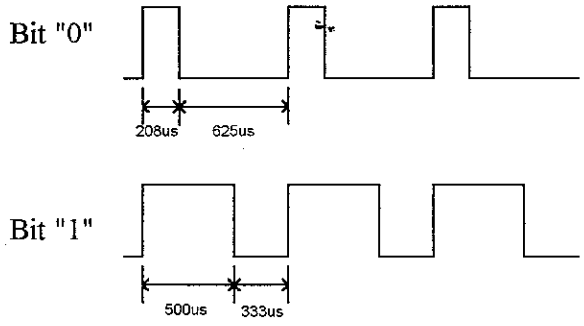
- Table 1 -

Code Format:

Code bits:

A code bit is the basic component of the encoded waveform which has 2 values named Bit "0" and Bit "1". The format of code bits is shown in Figure 4.

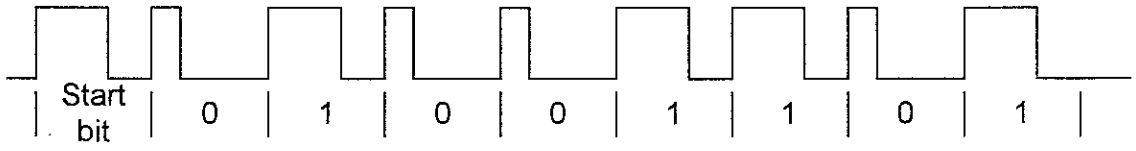


- Figure 4 -

Code Byte:

A code byte consists of 9 code bits in which first code bit is defined as start bit using Bit '1'. Then followed by the least significant bit of data byte, last code bit is the most significant bit. Thus a code byte contains start bit and one byte data.

For example (a code byte 0B2h):



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Average Factor

To calculate maximum turn on time within a packet, we may assume all code bytes in a data packet carrying maximum number of Bit "1". According to the coding of this unit, the maximum number of Bit "1" in a code byte will not exceed 6 including start bit.

Thus the maximum turn on time of a code byte is

6*500 + 3*208 = 3.624ms

Assume within 100ms, all code byte sent are having maximum turn on time. In this period, 11 code bytes are sent. Thus the maximum turn on time within this 100ms is

11*3.624 = 39.864ms

Thus the average factor

$20\log \frac{39.864}{100} =$ **-8.0db**