

## Crystal oscillator standard frequencies

| Frequency (MHz) | Application              | UART   | A/V                  | RTC | Primary uses   |
|-----------------|--------------------------|--------|----------------------|-----|--|
| <b>0.032768</b> |                          |        |                      | X   | <a href="#">Real-time clocks</a> , <a href="#">quartz watches</a> and clocks; allows binary division to 1 Hz signal ( $2^{15} \times 1$ Hz); also low-speed low-power microcontrollers. Very common. |
| <b>0.077500</b> |                          |        |                      | X   | <a href="#">Real-time clocks</a> , <a href="#">quartz watches</a> and clocks; also the <a href="#">DCF77</a> frequency   |
| <b>0.100000</b> |                          |        |                      | X   | <a href="#">Real-time clocks</a> , <a href="#">quartz watches</a> and clocks   |
| <b>0.131072</b> |                          |        |                      | X   | Found in Fluke 17/19 DMM's <sup>[<a href="#">citation needed</a>]</sup>  |
| <b>1.008</b>    |                          | 9600   |                      |     | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (30×33,600 baud, 105×9600 baud or 840×1,200 baud), used for 1200 and 2400 baud modems                     |
| <b>1.544</b>    | <a href="#">DS1</a>      |        |                      |     | Bit clock for <a href="#">DS1</a> systems (+32 ppm, ANSI T1.102).  |
| <b>1.8432</b>   |                          | 115200 |                      |     | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . ( $2^{13} \times 3^2 \times 5^2$ ; 16×115,200 baud or 96×16×1,200 baud)                                   |
| <b>2.048000</b> | <a href="#">E1</a>       |        |                      |     | Allows binary division to 1 kHz ( $2^{11} \times 1$ kHz). Bit clock for <a href="#">E1</a> systems (+50 ppm, ITU G3703).   |
| <b>2.097152</b> |                          |        |                      | X   | <a href="#">Real-time clocks</a> , divides to 1 Hz signal ( $2^{21} \times 1$ Hz)  |
| <b>2.4576</b>   |                          | 38400  |                      |     | <a href="#">UART</a> clock; allows integer division to common baud rates up to 38,400. ( $2^{15} \times 3^1 \times 5^2$ ; 64×38,400 baud or 2048×1,200 baud)   |
| <b>2.500</b>    | <a href="#">Ethernet</a> |        |                      |     | <a href="#">Ethernet</a> clock for 10 Mbit/s   |
| <b>2.560</b>    |                          |        |                      |     | Allows binary division to 10 kHz ( $2^8 \times 10$ kHz)  |
| <b>2.880</b>    |                          | 115200 |                      |     | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (25×115,200 baud or 96×25×1,200 baud)   |
| <b>3.072000</b> |                          |        |                      |     | Allows binary division to 3 kHz ( $2^{10} \times 3$ kHz); can be used to generate 60 Hz signals (51200×60 Hz)  |
| <b>3.088</b>    | <a href="#">DS1</a>      |        |                      |     | 2x 1.544, the bit clock for <a href="#">DS1</a> systems (+32 ppm, ANSI T1.102). Available as TCXO and OCXO.  |
| <b>3.2768</b>   |                          |        |                      |     | Allows binary division to 100 Hz (32,768×100 Hz, or $2^{15} \times 100$ Hz) and to 50 Hz, used in e.g. wattmeters and DC-AC converters   |
| <b>3.575611</b> |                          |        | <a href="#">PAL</a>  |     | <a href="#">PAL M</a> color <a href="#">subcarrier</a>   |
| <b>3.579545</b> |                          |        | <a href="#">NTSC</a> |     | <a href="#">NTSC M</a> color subcarrier. Because these are very common and inexpensive they are used in many other applications, for example <a href="#">DTMF</a> generators                         |
| <b>3.582056</b> |                          |        | <a href="#">PAL</a>  |     | <a href="#">PAL N</a> color subcarrier   |
| <b>3.595295</b> |                          |        | <a href="#">NTSC</a> |     | <a href="#">NTSC M</a> color subcarrier, plus horizontal scan rate (15,750). Used for a rainbow color test, produces color through the entire 360 degrees of phase shift. Unusual. <sup>[1]</sup>    |
| <b>3.64</b>     |                          |        | radio                |     | 8x 455 kHz AM broadcast band <a href="#">intermediate frequency</a> ; also often used in IR remote controls as the clock source  |
| <b>3.686400</b> | <a href="#">W-CDMA</a>   | 115200 |                      |     | <a href="#">UART</a> clock (2×1.8432 MHz); allows integer division to common baud rates. Also used in <a href="#">W-CDMA</a> systems.  |

|                   |                      |        |                          |   |
|-------------------|----------------------|--------|--------------------------|---|
| <b>3.93216</b>    |                      |        |                          | allows binary division to 60 Hz (65536×60 Hz, 2 <sup>16</sup> ×60 Hz), used e.g. in wattmeters, DC-AC converters and NTSC vertical sync generators  |
| <b>4.000</b>      |                      |        |                          | Common frequency of low-power microcontrollers.   |
| <b>4.032</b>      |                      | 115200 |                          | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (35×115,200 baud or 96×35×1,200 baud), used for 1200, 2400, and 4800 baud modems.  |
| <b>4.096000</b>   | <a href="#">ISDN</a> |        |                          | Allows binary division to 1 kHz (2 <sup>12</sup> ×1 kHz). Used in <a href="#">ISDN</a> systems.   |
| <b>4.194304</b>   |                      |        | X                        | <a href="#">Real-time clocks</a> , divides to 1 Hz signal (2 <sup>22</sup> ×1 Hz)   |
| <b>4.332</b>      | <a href="#">RDS</a>  |        |                          | The <a href="#">RDS</a> signal bit rate is at 1.1875 kbit/s. While the frequency of 4.332 MHz is the most commonly used crystal resonator, its multiples (2×4.332 MHz = 8.664 MHz or 4×4.332 MHz = 17.328 MHz) have been used also.   |
| <b>4.43361875</b> |                      |        | <a href="#">PAL/NTSC</a> | <a href="#">PAL B/D/G/H/I</a> and NTSC M4.43 color subcarrier   |
| <b>4.608</b>      |                      | 115200 | X                        | Allows integer division to 1024 kHz and binary division to lower frequencies that are whole multiples of 1 Hz. <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (40×115200 baud or 40×96×1,200 baud). Common microcontroller clock frequency. Frequency of the Master Timing Unit (MTU) OCXO of the <a href="#">Space Shuttle</a> . <sup>[2][3]</sup> |
| <b>4.9152</b>     | <a href="#">CDMA</a> | 38400  |                          | Used in <a href="#">CDMA</a> systems; divided to 1.2288 MHz baseband frequency as specified by J-STD-008. Also <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (128×38,400 baud or 128×32×1,200 baud)  |
| <b>5.000</b>      |                      |        |                          | Common standard frequency. Commonly available as TCXO and OCXO.   |
| <b>5.034963</b>   |                      |        | <a href="#">NTSC</a>     | integer multiple of the 59.94 Hz (84000x) vertical refresh and the 15.734 kHz (320x) horizontal scan rates  |
| <b>5.0688</b>     |                      | 115200 |                          | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (44×115,200 baud or 96×44×1,200 baud)  |
| <b>5.120</b>      |                      |        |                          | Allows binary division to 10 kHz (2 <sup>9</sup> ×10 kHz)   |
| <b>5.185</b>      |                      |        | radio                    | used in radio transceivers, clock for some microcontrollers   |
| <b>5.5296</b>     |                      | 115200 |                          | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (48×115200 baud or 48×96×1,200 baud)   |
| <b>6.000</b>      | <a href="#">USB</a>  |        |                          | Common in low-speed (1.5Mbit/s) <a href="#">USB</a> devices such as computer keyboards.   |
| <b>6.144</b>      |                      | 38400  | audio                    | Digital audio systems - <a href="#">DAT</a> , <a href="#">MiniDisc</a> , <a href="#">sound cards</a> ; 128×48 kHz (2 <sup>7</sup> ×48 kHz). Also allows integer division to common UART baud rates up to 38,400.  |
| <b>6.176</b>      | <a href="#">DS1</a>  |        |                          | 4x 1.544, the bit clock for <a href="#">DS1</a> systems (+-32 ppm, ANSI T1.102). Available as TCXO and OCXO.  |
| <b>6.400</b>      |                      |        |                          | Binary multiple of 100 kHz (64×100 kHz), 50 kHz, 25 kHz, 12.5 kHz. Half of the common standard 12.8 MHz.  |
| <b>6.451200</b>   |                      | 115200 |                          | 21×307.2 kHz; <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (56×115,200 baud or 96×56×1,200 baud)  |

|          |                      |        |                      |  |
|----------|----------------------|--------|----------------------|--|
| 6.5536   |                      |        |                      | Allows binary division to 100 Hz (65,536×100 Hz, or $2^{16} \times 100$ Hz); used also in <a href="#">red boxes</a>  |
| 7.15909  |                      |        | <a href="#">NTSC</a> | NTSC M color subcarrier (2×3.579545 MHz)   |
| 7.200    | DARC                 | 57600  |                      | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (125×57,600 baud or 125×48×1,200 baud). Half of the more common 14.4 MHz. Reference clock for <a href="#">DARC</a> .  |
| 7.3728   |                      | 115200 |                      | <a href="#">UART</a> clock (4×1.8432 MHz); allows integer division to common <a href="#">baud rates</a>  |
| 8.000    | <a href="#">CAN</a>  |        |                      | used in <a href="#">CAN</a> bus systems  |
| 8.184    | <a href="#">GPS</a>  |        |                      | Half the 16.368 MHz frequency; same use in different chipsets. 8 times the 1.023 MHz C/A <a href="#">GPS signal</a> chipping rate. Multiplied by 192.5 to get the 1575.42 MHz <a href="#">L1 frequency</a> and multiplied by 150 to get the 1227.60 MHz L2 frequency.  |
| 8.192000 | <a href="#">ISDN</a> |        |                      | Allows binary division to 1 kHz ( $2^{13} \times 1$ kHz). Used in ISDN systems.  |
| 8.664    | <a href="#">RDS</a>  |        |                      | The <a href="#">RDS</a> signal bit rate is at 1.1875 kbit/s. While the frequency of 4.332 MHz is the most commonly used crystal resonator, its multiples (2×4.332 MHz = 8.664 MHz or 4×4.332 MHz = 17.328 MHz) have been used also.  |
| 8.86724  |                      |        | <a href="#">PAL</a>  | PAL B/G/H color subcarrier (2×4.433618 MHz)  |
| 9.216    |                      | 115200 | X                    | Allows integer division to 1024 kHz and binary division to lower frequencies that are whole multiples of 1 Hz. <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (80×115200 baud or 80×96×1,200 baud). Master clock for some Japanese variants of <a href="#">DOCSIS</a> .        |
| 9.54545  |                      |        | <a href="#">NTSC</a> | 2/3 of the 14.31818 MHz NTSC clock, 1/3 of the 28.636 MHz clock; common clock for microcontrollers and older processors  |
| 9.600    |                      | 38400  |                      | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (250×38,400 baud or 250×32×1,200 baud)  |
| 9.83040  | <a href="#">CDMA</a> | 38400  |                      | Used in <a href="#">CDMA</a> systems (2×4.9152 MHz); divided to 1.2288 MHz baseband frequency. Also <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (256×38,400 baud or 256×32×1,200 baud)  |
| 10.000   |                      |        |                      | Common standard frequency. Common frequency of low-power microcontrollers. Commonly available as TCXO and OCXO. Common stratum 3 <a href="#">Network Time Protocol</a> frequency. <sup>[4]</sup>   |
| 10.2300  | <a href="#">GPS</a>  |        |                      | Found in some <a href="#">GPS</a> receivers. Equals the P(Y) <a href="#">GPS signal</a> chipping rate. 10 times the 1.023 MHz C/A GPS signal chipping rate. Multiplied by 154 to get the 1575.42 MHz <a href="#">L1 frequency</a> and multiplied by 120 to get the 1227.60 MHz L2 frequency. Available as OCXO and TCXO. |

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|------------------|--------------------------|-------------|---|
| <b>10.24</b>     |                          |             | Allows binary division to 10 kHz ( $2^{10} \times 10$ kHz). Common as a clock in <a href="#">CB radio</a> PLL <a href="#">frequency synthesizers</a> to generate the 5 kHz or 10 kHz reference signal. <sup>[5]</sup> Used in frequency synthesizers in some cordless phones and in many radio frequency transceivers. Master clock for <a href="#">DOCSIS/EuroDOCSIS</a> . Used in <a href="#">cable modem termination systems</a> . Used to derive symbol and chip rate in conventional <a href="#">TD-SCDMA</a> systems. Available as OCXO and TCXO. |
| <b>10.245</b>    | <a href="#">FM radio</a> |             | Used in radio receivers; mixes with 10.7 MHz <a href="#">intermediate frequency</a> (IF) yielding 455 kHz signal, a common second IF for <a href="#">FM radio</a> <sup>[6]</sup>  |
| <b>10.416667</b> | <a href="#">Ethernet</a> |             | multiplied by 12 to 125 MHz <a href="#">Gigabit Ethernet GMII</a> GTXCLK clock, <a href="#">FDDI</a> clock  |
| <b>11.0592</b>   |                          | 115200      | <a href="#">UART</a> clock ( $6 \times 1.8432$ MHz); allows integer division to common baud rates ( $96 \times 115200$ baud or $96 \times 96 \times 1,200$ baud); common clock for <a href="#">Intel 8051</a> microprocessors <sup>[7]</sup>  |
| <b>11.2896</b>   |                          | audio       | Used in <a href="#">compact disc</a> digital audio systems and <a href="#">CDROM</a> drives; allows binary division to <a href="#">44.1 kHz</a> ( $256 \times 44.1$ kHz), 22.05 kHz, and 11.025 kHz. Frequencies also used are 16.9344 MHz, 22.5972 MHz, 33.8688 MHz and 45.1584 MHz.   |
| <b>11.454544</b> | <a href="#">teletext</a> |             | Used in some <a href="#">teletext</a> circuits; $2 \times 5.727272$ MHz (clock frequency of NTSC M teletext; PAL B uses 6.9375 MHz, SECAM uses 6.203125 MHz, PAL G uses 6.2031 MHz, and PAL I uses 4.4375 MHz clock)  |
| <b>11.520</b>    |                          | 115200      | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . ( $100 \times 115,200$ baud or $100 \times 96 \times 1,200$ baud)  |
| <b>12.0000</b>   | <a href="#">USB/CAN</a>  |             | Used in <a href="#">USB</a> 1.0 and 2.0 systems (with accuracy of 500 ppm) as the reference clock for the full-speed PHY rate of 12 Mbit/s, or multiplied up using a PLL to clock high speed PHYs at 480 Mbit/s; common clock for <a href="#">Intel 8051</a> microprocessors; <sup>[7]</sup> also used in <a href="#">CAN</a> bus systems   |
| <b>12.272727</b> |                          |             | Clock rate for exactly square pixels in interleaved NTSC video ( $\frac{135}{11}$ MHz). In practice the more commonly available 12.288 MHz frequency is close enough for most applications.   |
| <b>12.288</b>    |                          | 38400 audio | Digital audio systems - <a href="#">DAT</a> , <a href="#">MiniDisc</a> , <a href="#">sound cards</a> ; $256 \times 48$ kHz ( $2^8 \times 48$ kHz). Also allows integer division to common UART baud rates up to 38400.  |
| <b>12.352</b>    | <a href="#">DS1</a>      |             | $8 \times 1.544$ , the bit clock for <a href="#">DS1</a> systems ( $\pm 32$ ppm, ANSI T1.102). Available as TCXO and OCXO.  |
| <b>12.40625</b>  | <a href="#">teletext</a> |             | Used in some <a href="#">teletext</a> circuits; $2 \times 6.203125$ MHz (clock frequency of SECAM teletext; PAL B uses 6.9375 MHz, NTSC M uses 5.727272 MHz, PAL G uses 6.2031 MHz, and PAL I uses 4.4375 MHz clock)  |
| <b>12.800</b>    |                          |             | Common standard frequency, common reference clock; binary multiple of 100 kHz ( $128 \times 100$ kHz), 50 kHz, 25 kHz, 12.5 kHz. Commonly available as TCXO and OCXO. Common <a href="#">stratum 3</a> frequency. <sup>[4]</sup>  |

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|----------|--------------------------|--------------------------|---|
| 12.9024  |                          | 115200                   | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (112×115200 baud or 112×96×1,200 baud)   |
| 12.960   |                          | 57600                    | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (225×57600 baud or 225×48×1,200 baud)  |
| 13.000   | <a href="#">GSM/UMTS</a> |                          | Commonly used as a reference clock for <a href="#">GSM</a> and <a href="#">UMTS</a> handsets. (13 MHz is exactly 48 times the GSM bit rate). Commonly available as TCXO and OCXO.   |
| 13.500   |                          | <a href="#">PAL/NTSC</a> | Master clock for PAL/NTSC DVD players, Digital TV receivers, etc. (13.5 MHz is an exact multiple of the <a href="#">PAL</a> and <a href="#">NTSC</a> line frequencies)  |
| 13.5168  |                          | 38400                    | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (352×38400 baud or 352×32×1,200 baud)  |
| 13.56    | <a href="#">RFID</a>     |                          | Common contactless smartcard frequency ( <a href="#">ISO/IEC 14443</a> )  |
| 13.875   | <a href="#">teletext</a> |                          | Used in some <a href="#">teletext</a> circuits; 2×6.9375 MHz (clock frequency of PAL B teletext; SECAM uses 6.203125 MHz, NTSC M uses 5.727272 MHz, PAL G uses 6.2031 MHz, and PAL I uses 4.4375 MHz clock)   |
| 14.25    | <a href="#">FM radio</a> | <a href="#">PAL</a>      | used as sampling frequency for <a href="#">ADCs</a> for digitizing the 10.7 MHz <a href="#">intermediate frequency</a> in <a href="#">software defined radio</a> implementations of AM/FM radio receivers. <sup>[8]</sup> Pixel clock of some PAL CCD cameras. <sup>[9]</sup> Used in PAL version in some early Apple computers, e.g. <a href="#">Apple II Europlus</a> . |
| 14.31818 |                          | <a href="#">NTSC</a>     | NTSC M color subcarrier (4×3.579545 MHz). Common seed clock for modern PC motherboard clock generator chips, clock for <a href="#">ISA</a> bus, also common on <a href="#">CGA</a> and <a href="#">VGA cards</a> and in some 8bit computers.  |
| 14.35    |                          | <a href="#">NTSC</a>     | Pixel clock of some NTSC CCD cameras. <sup>[9]</sup>  |
| 14.400   | <a href="#">PDC</a>      | 115200                   | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (125×115,200 baud or 125×96×1,200 baud). Also a reference clock for <a href="#">PDC</a> clock. Reference clock of some consumer <a href="#">GPS</a> receivers. <sup>[10]</sup>   |
| 14.7456  |                          | 115200                   | <a href="#">UART</a> clock (8×1.8432 MHz); allows integer division to common baud rates; common clock for small microcontrollers  |
| 14.75    |                          |                          | Clock rate for exactly square pixels in interleaved PAL video ( <sup>59</sup> 4 MHz). In practice the more commonly available 14.7456 MHz frequency is close enough for most applications.  |
| 15.360   | <a href="#">3G</a>       | 38400                    | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (400×38400 baud or 400×32×1,200 baud). Also used as a <a href="#">3G</a> reference clock. <sup>[11]</sup> Used as reference clock in some <a href="#">Bluetooth</a> systems.   |
| 16.000   | <a href="#">CAN</a>      |                          | used in <a href="#">CAN</a> bus systems, some <a href="#">USB</a> devices   |
| 16.200   |                          |                          | Sampling clock for <a href="#">MUSE</a> HDTV systems. Rarely used as reference clock in some <a href="#">Bluetooth</a> systems.   |
| 16.257   |                          | <a href="#">EGA</a>      | pixel clock generator in <a href="#">MGA</a> and <a href="#">EGA</a> video cards (640×350@60 Hz) <sup>[12]</sup>  |

|                                 |                     |              |  |
|---------------------------------|---------------------|--------------|--|
| 16.3676<br>16.367667<br>16.3680 | <a href="#">GPS</a> |              | Commonly used for down-conversion and sampling in <a href="#">GPS</a> -receivers. Generates <a href="#">intermediate frequency</a> signal at 4.092 MHz. 16.3676 or 16.367667 MHz are sometimes used instead of 16.368 MHz to avoid perfect lineup between sampling frequency and <a href="#">GPS spreading code</a> . 16.368 MHz is a reference clock of some consumer <a href="#">GPS</a> receivers. <sup>[10]</sup> 16.368 MHz is 16 times the 1.023 MHz C/A <a href="#">GPS signal</a> chipping rate; multiplied by 96.25 to get the 1575.42 MHz <a href="#">L1 frequency</a> and multiplied by 75 to get the 1227.60 MHz L2 frequency. |
| 16.369                          | <a href="#">GPS</a> |              | Reference clock for some <a href="#">GPS</a> systems. Available as TCXO. <sup>[13]</sup>   |
| 16.384000                       |                     |              | Allows binary division to 1 kHz ( $2^{14} \times 1$ kHz). Reference clock of some consumer <a href="#">GPS</a> receivers. <sup>[10]</sup> Commonly available as TCXO and OCXO.   |
| 16.5888                         |                     | 115200       | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (144×115200 baud or 144×96×1,200 baud)  |
| 16.67                           |                     |              | core speed of some microcomputers (relatively common in <a href="#">Motorola 68000</a> family); bus clock; double to 33.33 MHz, quadruple to 66.67 MHz, multiply by 6 to 100 MHz; <a href="#">IOAPIC</a> clock speed, half the PCI bus frequency   |
| 16.800                          |                     | 19200        | Common standard reference frequency for PLL circuits in radio transmitters and receivers, commonly used for frequency synthesis with adjustment in 2.5, 5 or 6.25 kHz steps (6720×5 kHz, 3360×5 kHz or 2688×5.25 kHz). Also <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (500×33600 baud or 500×28×1,200 baud). Commonly available as TCXO, VCXO and VCTCXO. Used as reference clock in some <a href="#">Bluetooth</a> systems. Used as reference clock in some <a href="#">Bluetooth</a> systems. Reference clock for some <a href="#">GPS</a> systems. <sup>[13]</sup>                       |
| 16.9344                         |                     | 115200 audio | Used in <a href="#">compact disc</a> digital audio systems and <a href="#">CDROM</a> drives; allows integer division to <a href="#">44.1 kHz</a> (384×44.1 kHz), 22.05 kHz, and 11.025 kHz. Also allows integer division to common UART baud rates up to 115200. Frequencies also used are 11.2896 MHz, 22.5972 MHz, 33.8688 MHz and 45.1584 MHz.  |
| 17.328                          | <a href="#">RDS</a> |              | The <a href="#">RDS</a> signal bit rate is at 1.1875 kbit/s. While the frequency of 4.332 MHz is the most commonly used crystal resonator, its multiples (2×4.332 MHz = 8.664 MHz or 4×4.332 MHz = 17.328 MHz) have been used also.  |
| 17.664                          | <a href="#">DSL</a> | 38400        | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (32×552000 baud, 128×138000 baud, 460×38400 baud or 460×32×1,200 baud); <a href="#">DSL</a> clock: 17.664 MHz ( <a href="#">VDSL</a> ) ... 8×2.208 MHz ( <a href="#">ADSL</a> ADC sampling rate)  |
| 17.734475                       | <a href="#">PAL</a> |              | PAL B/G/H color subcarrier (4×4.433618 MHz)  |

|          |                           |        |                      |   |  |
|----------|---------------------------|--------|----------------------|---|--|
| 18.432   |                           | 115200 | audio                | X | <a href="#">UART</a> clock (10×1.8432 MHz); allows integer division to common baud rates. Also allows integer division to 48 kHz (384×48 kHz), 96 kHz, and 192 kHz sample rates used in high-end digital audio.  |
| 19.200   | <a href="#">3G</a>        | 38400  | <a href="#">DVB</a>  |   | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (500×38,400 baud or 500×32×1,200 baud). Also used as a <a href="#">3G</a> reference clock, due to being a least common multiple of <a href="#">W-CDMA chip rate</a> 3.84 MHz (5x) and 200 kHz channel raster (96x). <sup>[11]</sup> Commonly available as TCXO and OCXO. Also used in some <a href="#">DVB</a> receiver chipsets. Reference clock of some consumer <a href="#">GPS</a> receivers. <sup>[10]</sup> Used as reference clock in some <a href="#">Bluetooth</a> systems. Common <a href="#">stratum 3</a> frequency. <sup>[4]</sup> |
| 19.44    | <a href="#">DS1/T1/E1</a> |        |                      |   | Used in <a href="#">DS1/T1/E1</a> systems as a packet clock. Used as reference clock in some <a href="#">Bluetooth</a> systems. Commonly available as TCXO and OCXO.   |
| 19.6608  | <a href="#">CDMA</a>      | 38400  |                      |   | Used in <a href="#">CDMA</a> systems (4×4.9152); divided to 1.2288 MHz baseband frequency; <a href="#">UART</a> clock, allows integer division to common baud rates (512×38400, 1024×19200, etc.)  |
| 19.6800  | <a href="#">CDMA</a>      | 19200  |                      |   | Used in <a href="#">CDMA(IS-95)/CDMA2000</a> systems; divided to 1.2288 MHz baseband frequency; <a href="#">UART</a> clock, allows integer division to common baud rates (1025×19200, 1025×16×1200, etc.) Used as reference clock in some <a href="#">Bluetooth</a> systems. Commonly available as TCXO.   |
| 19.800   | <a href="#">CDMA</a>      |        |                      |   | Used in some <a href="#">CDMA</a> systems. Used as reference clock in some <a href="#">Bluetooth</a> systems.  |
| 20.000   | <a href="#">Ethernet</a>  |        |                      |   | <a href="#">10 Mbit/s ethernet</a> . Commonly available as TCXO and OCXO. Common <a href="#">stratum 3</a> frequency. <sup>[4]</sup>   |
| 20.2752  |                           | 115200 |                      |   | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (176×115200 baud or 176×96×1,200 baud)  |
| 20.48000 |                           |        |                      |   | Allows binary division to 10 kHz (2 <sup>11</sup> ×10 kHz). Commonly available as TCXO and OCXO.   |
| 21.47727 |                           |        | <a href="#">NTSC</a> |   | NTSC M color subcarrier (6×3.579545 MHz). Common seed clock for many older computer systems, e.g. <a href="#">NES</a> .  |
| 22.1184  |                           | 115200 |                      |   | <a href="#">UART</a> clock (12×1.8432 MHz); allows integer division to common baud rates   |
| 22.5792  |                           |        | audio                |   | Used in <a href="#">compact disc</a> digital audio systems and <a href="#">CDROM</a> drives; allows binary division to <a href="#">44.1 kHz</a> (512×44.1 kHz), 22.05 kHz, and 11.025 kHz. Frequencies also used are 11.2896 MHz, 16.9344 MHz, 33.8688 MHz and 45.1584 MHz.  |
| 23.104   | <a href="#">GPS</a>       |        |                      |   | Reference clock for some <a href="#">GPS</a> systems. Available as TCXO. <sup>[13]</sup>   |
| 23.9616  |                           | 115200 |                      |   | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (208×115200 baud or 208×96×1,200 baud)  |
| 24       | <a href="#">USB</a>       |        |                      |   | full-speed USB (24 MHz * 20 = 480Mbit/s); LCD monitor some MCU   |
| 24.5535  | <a href="#">GPS</a>       |        |                      |   | Reference clock for some <a href="#">GPS</a> systems. Available as TCXO. <sup>[13]</sup> Almost 24 times the 1.023 MHz C/A code chipping rate.   |



|         |                               |                          |   |
|---------|-------------------------------|--------------------------|---|
| 24.576  | Firewire                      | audio                    | Digital audio systems - <a href="#">DAT</a> , <a href="#">MiniDisc</a> , <a href="#">AC'97</a> , <a href="#">sound cards</a> ; 512×48 kHz ( $2^9 \times 48$ kHz); also used as bus reference clock in <a href="#">Firewire</a> systems (with accuracy of 100 ppm). 49.1520 MHz (2x 24.576) also used.   |
| 24.704  | <a href="#">DS1</a>           |                          | 16x 1.544, the bit clock for <a href="#">DS1</a> systems (+32 ppm, ANSI T1.102). Available as TCXO and OCXO.  |
| 25.000  | <a href="#">Ethernet</a>      |                          | <a href="#">Fast Ethernet MII</a> clock (100 Mbit/s/4-bit <a href="#">nibble</a> ) (with accuracy of 100 ppm); also multiplied by 5 to 125 MHz <a href="#">Gigabit Ethernet GMII</a> GTXCLK clock, <a href="#">FDDI</a> clock; used as input for 100 MHz <a href="#">PCI Express</a> clock generators <sup>[14]</sup>   |
| 25.175  |                               | <a href="#">VGA</a>      | Common <a href="#">Video Graphics Array</a> pixel clock (i.e., 640x350@70 Hz, 640x400@70 Hz, 640x480@60 Hz) <sup>[15]</sup>   |
| 25.8048 |                               | 115200                   | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (224×115200 baud or 224×96×1,200 baud)   |
| 26.000  | <a href="#">GSM/UMTS</a>      | <a href="#">DVB</a>      | Commonly used as a reference clock for <a href="#">GSM</a> and <a href="#">UMTS/3G</a> handsets. (26 MHz is exactly 96 times the GSM bit rate). Commonly available as TCXO and OCXO. <sup>[11]</sup> Also used in some <a href="#">DVB</a> receiver chipsets. Reference clock of some consumer <a href="#">GPS</a> receivers. <sup>[10]</sup>                             |
| 26.2144 |                               |                          | Popular for 102.4 kS/s, 204.8 kS/s or similar sampling systems, when a power-of-two size <a href="#">FFT</a> follows the sampling. In this case the FFT <i>frequency bins</i> end up to be at "nice" frequencies for humans. Also allows integer division to 25 Hz and multiples of 25 Hz (50 Hz, 100 Hz, 200 Hz); 26.2144 MHz = $100 \times 2^{18} = 25 \times 2^{20}$ . |
| 26.5625 | <a href="#">Fibre Channel</a> |                          | quadrupled to 106.250 MHz <a href="#">Fibre Channel</a> clock   |
| 26.975  | RC                            |                          | 27 MHz band, band 0/1 (grey/brown), "split" frequency; radio-controlled models of cars, boats, aircraft <sup>[16]</sup>   |
| 26.995  | RC                            |                          | 27 MHz band, band 1 (brown); radio-controlled models of cars, boats, aircraft   |
| 27.000  |                               | <a href="#">PAL/NTSC</a> | Master clock for PAL/NTSC DVD players, Digital TV receivers, some <a href="#">modems</a> etc. (27 MHz is an exact multiple of the <a href="#">PAL</a> and <a href="#">NTSC</a> line frequencies)  |
| 27.025  | RC                            |                          | 27 MHz band, band 1/2 (brown/red), "split" frequency; radio-controlled models of cars, boats, aircraft  |
| 27.045  | RC                            |                          | 27 MHz band, band 2 (red); some radio-controlled models of cars, boats, aircraft  |
| 27.075  | RC                            |                          | 27 MHz band, band 2/3 (red/orange), "split" frequency; radio-controlled models of cars, boats, aircraft   |
| 27.095  | RC                            |                          | 27 MHz band, band 3 (orange); some radio-controlled models of cars, boats, aircraft   |
| 27.12   | <a href="#">RFID</a>          |                          | Twice 13.56 MHz, common contactless smartcard frequency ( <a href="#">ISO/IEC 14443</a> )   |
| 27.125  | RC                            |                          | 27 MHz band, band 3/4 (orange/yellow), "split" frequency; radio-controlled models of cars, boats, aircraft  |
| 27.145  | RC                            |                          | 27 MHz band, band 4 (yellow); some radio-controlled models of cars, boats, aircraft   |
| 27.175  | RC                            |                          | 27 MHz band, band 4/5 (yellow/green), "split" frequency; radio-controlled models of cars, boats, aircraft   |



|                  |                     |        |                      |   |
|------------------|---------------------|--------|----------------------|---|
| <b>27.195</b>    | RC                  |        |                      | 27 MHz band, band 5 (green); radio-controlled models of cars, boats, aircraft   |
| <b>27.225</b>    | RC                  |        |                      | 27 MHz band, band 5/6 (green/blue), "split" frequency; radio-controlled models of cars, boats, aircraft   |
| <b>27.255</b>    | RC                  |        |                      | 27 MHz band, band 6 (blue); some radio-controlled models of cars, boats, aircraft   |
| <b>27.4560</b>   | <a href="#">GPS</a> |        |                      | Reference clock for some <a href="#">GPS</a> systems. Available as TCXO. <sup>[13]</sup>  |
| <b>27.6480</b>   |                     | 115200 |                      | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (240×115200 baud or 240×96×1,200 baud)   |
| <b>28.224</b>    | modems              | 115200 | audio                | used in some faxes and modems; <a href="#">UART</a> clock, allows integer division to common baud rates (245×115200, 512×38400, 1024×19200, etc.) and to <a href="#">modem and fax rates</a> (504×56000, 580×48000, 840×33600, 980×28800, 1960×14400, 2352×12000, etc.); also divides to common audio frequencies (147×192000, 588×48000, 640×44100, 1280×22050, 2560×11025)  |
| <b>28.322</b>    |                     |        | <a href="#">VGA</a>  | Common <a href="#">Video Graphics Array</a> pixel clock (i.e., 720x450/400@70 Hz) <sup>[17]</sup>   |
| <b>28.375</b>    |                     |        | <a href="#">PAL</a>  | Master clock for some PAL CCD cameras; 2 periods per pixel, 1816 periods per scan line, 567500 periods per frame. With frequency of 28.37516 video clock for all PAL Amiga computers.   |
| <b>28.636</b>    |                     |        | <a href="#">NTSC</a> | Master clock for some NTSC CCD cameras. Video clock for all NTSC Amiga computers.   |
| <b>29.4912</b>   |                     | 115200 |                      | <a href="#">UART</a> clock (16×1.8432 MHz); allows integer division to common baud rates (256×115200)   |
| <b>30.0000</b>   |                     |        |                      | common CPU clock  |
| <b>30.240</b>    |                     |        | VGA                  | Early <a href="#">Macintosh</a> video pixel clock (640x480@66 Hz) <sup>[17]</sup>   |
| <b>30.720</b>    | 3G                  | 38400  |                      | A <a href="#">3G</a> reference clock; twice the 15.36 MHz, 8x the 3.84 MHz WCDMA <a href="#">chip rate</a> . Reference clock in <a href="#">W-CDMA</a> systems; can be multiplied by 16 to 491.52 MHz common for driving <a href="#">DACs</a> in WCDMA wireless <a href="#">base stations</a> or by 32 to 983.04 MHz for UMTS base stations or by 8 to 245.76 MHz, other common DAC sampling frequency. <sup>[18]</sup> <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (800×38400 baud or 800×32×1,200 baud). Available as VCXO, TCXO and OCXO. |
| <b>31.3344</b>   |                     | 115200 |                      | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (272×115200 baud or 272×96×1,200 baud)   |
| <b>32.768000</b> |                     |        |                      | Allows binary division to 1 kHz (2 <sup>15</sup> ×1 kHz). Reference clock of some consumer <a href="#">GPS</a> receivers. Commonly available as TCXO and OCXO.  |
| <b>33.1776</b>   |                     | 115200 |                      | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (288×115200 baud or 288×96×1,200 baud)   |
| <b>33.33</b>     |                     |        |                      | common CPU clock, <a href="#">PCI</a> bus clock   |

|                |                    |        |       |  |
|----------------|--------------------|--------|-------|--|
| <b>33.8688</b> |                    | 115200 | audio | Used in <a href="#">compact disc</a> digital audio systems and <a href="#">CDROM</a> drives; allows integer division to <a href="#">44.1 kHz</a> (768×44.1 kHz), 22.05 kHz, and 11.025 kHz. Also allows integer division to common UART baud rates up to 115200. Available as a TCXO. Frequencies also used are 11.2896 MHz, 16.9344 MHz, 22.5972 MHz and 45.1584 MHz. |
| <b>34.368</b>  | <a href="#">E3</a> | 38400  |       | <a href="#">E3</a> data rate clock. <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (895×38400 baud or 895×32×1200 baud)  |
| <b>34.950</b>  | RC                 |        |       | 35 MHz band, channel 55; radio-controlled models of aircraft <a href="#">[19]</a>  |
| <b>34.960</b>  | RC                 |        |       | 35 MHz band, channel 56; radio-controlled models of aircraft   |
| <b>34.970</b>  | RC                 |        |       | 35 MHz band, channel 57; radio-controlled models of aircraft   |
| <b>34.980</b>  | RC                 |        |       | 35 MHz band, channel 58; radio-controlled models of aircraft   |
| <b>34.990</b>  | RC                 |        |       | 35 MHz band, channel 59; radio-controlled models of aircraft   |
| <b>35.000</b>  | RC                 |        |       | 35 MHz band, channel 60; radio-controlled models of aircraft   |
| <b>35.010</b>  | RC                 |        |       | 35 MHz band, channel 61; radio-controlled models of aircraft   |
| <b>35.020</b>  | RC                 |        |       | 35 MHz band, channel 62; radio-controlled models of aircraft   |
| <b>35.0208</b> |                    | 115200 |       | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (304×115200 baud or 304×96×1,200 baud)  |
| <b>35.030</b>  | RC                 |        |       | 35 MHz band, channel 63; radio-controlled models of aircraft   |
| <b>35.040</b>  | RC                 |        |       | 35 MHz band, channel 64; radio-controlled models of aircraft   |
| <b>35.050</b>  | RC                 |        |       | 35 MHz band, channel 65; radio-controlled models of aircraft   |
| <b>35.060</b>  | RC                 |        |       | 35 MHz band, channel 66; radio-controlled models of aircraft   |
| <b>35.070</b>  | RC                 |        |       | 35 MHz band, channel 67; radio-controlled models of aircraft   |
| <b>35.080</b>  | RC                 |        |       | 35 MHz band, channel 68; radio-controlled models of aircraft   |
| <b>35.090</b>  | RC                 |        |       | 35 MHz band, channel 69; radio-controlled models of aircraft   |
| <b>35.100</b>  | RC                 |        |       | 35 MHz band, channel 70; radio-controlled models of aircraft   |
| <b>35.110</b>  | RC                 |        |       | 35 MHz band, channel 71; radio-controlled models of aircraft   |
| <b>35.120</b>  | RC                 |        |       | 35 MHz band, channel 72; radio-controlled models of aircraft   |
| <b>35.130</b>  | RC                 |        |       | 35 MHz band, channel 73; radio-controlled models of aircraft   |
| <b>35.140</b>  | RC                 |        |       | 35 MHz band, channel 74; radio-controlled models of aircraft   |

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|----------------|---------------------------|--------|---------------------|--|
| <b>35.150</b>  | RC                        |        |                     | 35 MHz band, channel 75; radio-controlled models of aircraft   |
| <b>35.160</b>  | RC                        |        |                     | 35 MHz band, channel 76; radio-controlled models of aircraft   |
| <b>35.170</b>  | RC                        |        |                     | 35 MHz band, channel 77; radio-controlled models of aircraft   |
| <b>35.180</b>  | RC                        |        |                     | 35 MHz band, channel 78; radio-controlled models of aircraft   |
| <b>35.190</b>  | RC                        |        |                     | 35 MHz band, channel 79; radio-controlled models of aircraft   |
| <b>35.200</b>  | RC                        |        |                     | 35 MHz band, channel 80; radio-controlled models of aircraft   |
| <b>35.210</b>  | RC                        |        |                     | 35 MHz band, channel 81; radio-controlled models of aircraft   |
| <b>35.220</b>  | RC                        |        |                     | 35 MHz band, channel 82; radio-controlled models of aircraft   |
| <b>35.230</b>  | RC                        |        |                     | 35 MHz band, channel 83; radio-controlled models of aircraft   |
| <b>35.240</b>  | RC                        |        |                     | 35 MHz band, channel 84; radio-controlled models of aircraft   |
| <b>35.250</b>  | RC                        |        |                     | 35 MHz band, channel 85; radio-controlled models of aircraft   |
| <b>35.2512</b> |                           | 115200 |                     | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (306×115200 baud or 306×96×1,200 baud)  |
| <b>35.260</b>  | RC                        |        |                     | 35 MHz band, channel 86; radio-controlled models of aircraft   |
| <b>35.270</b>  | RC                        |        |                     | 35 MHz band, channel 87; radio-controlled models of aircraft   |
| <b>35.280</b>  | RC                        |        |                     | 35 MHz band, channel 88; radio-controlled models of aircraft   |
| <b>35.290</b>  | RC                        |        |                     | 35 MHz band, channel 89; radio-controlled models of aircraft   |
| <b>35.300</b>  | RC                        |        |                     | 35 MHz band, channel 90; radio-controlled models of aircraft   |
| <b>35.3280</b> | <a href="#">DSL</a>       | 38400  |                     | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (64×552000 baud, 256×138000 baud, 460×38400 baud or 460×32×1,200 baud); <a href="#">DSL</a> clock: 2×17.664 MHz ( <a href="#">VDSL</a> ) ... 16×2.208 MHz ( <a href="#">ADSL</a> ADC sampling rate)   |
| <b>36.000</b>  |                           |        | <a href="#">VGA</a> | <a href="#">Video Graphics Array</a> pixel clock for 800×600@56 Hz <sup>[17]</sup>   |
| <b>36.8640</b> |                           | 115200 | X                   | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (320×115200 baud or 320×96×1,200 baud)  |
| <b>38.400</b>  | 3G                        | 38400  | <a href="#">DVB</a> | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> (500×38,400 baud or 500×32×1,200 baud). Also used as a <a href="#">3G</a> reference clock, due to being a second (2×19.2 MHz) least common multiple of <a href="#">W-CDMA chip rate</a> 3.84 MHz (5x) and 200 kHz channel raster (96x). <sup>[11]</sup> Also used in some <a href="#">DVB</a> receiver chipsets. Used as reference clock in some <a href="#">Bluetooth</a> systems. |
| <b>38.88</b>   | <a href="#">DS1/T1/E1</a> |        |                     | Used in <a href="#">DS1/T1/E1</a> systems as a packet clock (2×19.44 MHz). Commonly available as TCXO and OCXO.  |

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| <b>39.000</b> | <a href="#">GSM/UMTS</a> | 3x13 MHz. Commonly used as a reference clock for <a href="#">GSM</a> and <a href="#">UMTS</a> handsets. (39 MHz is exactly 144 times the GSM bit rate). Available as TCXO. |
| <b>40.000</b> |                          | common CPU clock, WiFi, OFDM   |
| <b>40.320</b> | 115200                   | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (350×115200 baud or 350×96×1,200 baud)  |
| <b>40.655</b> | RC                       | 40 MHz band, channel 50; radio-controlled of cars, boats <sup>[20]</sup>   |
| <b>40.665</b> | RC                       | 40 MHz band, channel 66; radio-controlled models of cars, boats  |
| <b>40.675</b> | RC                       | 40 MHz band, channel 51; radio-controlled models of cars, boats  |
| <b>40.685</b> | RC                       | 40 MHz band, channel 52; radio-controlled models of cars, boats  |
| <b>40.695</b> | RC                       | 40 MHz band, channel 53; radio-controlled models of cars, boats  |
| <b>40.705</b> | RC                       | 40 MHz band, channel 70; radio-controlled models of cars, boats  |
| <b>40.715</b> | RC                       | 40 MHz band, channel 54; radio-controlled models of cars, boats  |
| <b>40.725</b> | RC                       | 40 MHz band, channel 55; radio-controlled models of cars, boats  |
| <b>40.735</b> | RC                       | 40 MHz band, channel 56; radio-controlled models of cars, boats  |
| <b>40.745</b> | RC                       | 40 MHz band, channel 74; radio-controlled models of cars, boats  |
| <b>40.755</b> | RC                       | 40 MHz band, channel 75; radio-controlled models of cars, boats  |
| <b>40.765</b> | RC                       | 40 MHz band, channel 57; radio-controlled models of cars, boats  |
| <b>40.775</b> | RC                       | 40 MHz band, channel 58; radio-controlled models of cars, boats  |
| <b>40.775</b> | RC                       | 40 MHz band, channel 77; radio-controlled models of cars, boats  |
| <b>40.785</b> | RC                       | 40 MHz band, channel 59; radio-controlled models of cars, boats  |
| <b>40.795</b> | RC                       | 40 MHz band, channel 79; radio-controlled models of cars, boats  |
| <b>40.805</b> | RC                       | 40 MHz band, channel 80; radio-controlled models of cars, boats  |
| <b>40.815</b> | RC                       | 40 MHz band, channel 81; radio-controlled models of cars, boats  |
| <b>40.825</b> | RC                       | 40 MHz band, channel 82; radio-controlled models of cars, boats  |
| <b>40.835</b> | RC                       | 40 MHz band, channel 83; radio-controlled models of cars, boats  |
| <b>40.875</b> | RC                       | 40 MHz band, channel 85; radio-controlled models of cars, boats  |
| <b>40.885</b> | RC                       | 40 MHz band, channel 86; radio-controlled models of cars, boats  |
| <b>40.915</b> | RC                       | 40 MHz band, channel 87; radio-controlled models of cars, boats  |

|                            |                               |                     |  |
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| 40.935                     | RC                            |                     | 40 MHz band, channel 93; radio-controlled models of cars, boats  |
| 40.945                     | RC                            |                     | 40 MHz band, channel 94; radio-controlled models of cars, boats  |
| 40.96000                   |                               |                     | Allows binary division to 10 kHz ( $2^{12} \times 10$ kHz)   |
| 40.975                     | RC                            |                     | 40 MHz band, channel 91; radio-controlled models of cars, boats  |
| 40.985                     | RC                            |                     | 40 MHz band, channel 92; radio-controlled models of cars, boats  |
| 40.985                     | RC                            |                     | 40 MHz band, channel 98; radio-controlled models of cars, boats  |
| 44.736                     | <a href="#">DS3</a>           | 38400               | <a href="#">DS3</a> data rate clock. <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (1165×38400 baud or 1165×32×1200 baud)   |
| 45.1584                    |                               | 115200 audio        | Used in <a href="#">compact disc</a> digital audio systems and <a href="#">CDROM</a> drives; allows binary division to <a href="#">44.1 kHz</a> (1024×44.1 kHz), 22.05 kHz, and 11.025 kHz. Also allows integer division to common UART baud rates up to 115200. Available as a TCXO. Frequencies also used are 11.2896 MHz, 16.9344 MHz, 22.5972 MHz and 33.8688 MHz. |
| 48.000                     |                               | <a href="#">VGA</a> | common, found in old VGA cards <sup>[21]</sup>   |
| 49.1520                    | <a href="#">Firewire</a>      | audio               | Digital audio systems - <a href="#">DAT</a> , <a href="#">MiniDisc</a> , <a href="#">AC'97</a> , <a href="#">sound cards</a> ; 1024×48 kHz ( $2^{10} \times 48$ kHz); also used as bus reference clock in <a href="#">Firewire</a> systems (with accuracy of 100 ppm). Twice the more-standard frequency of 24.576 MHz.  |
| 49.408                     | <a href="#">DS1</a>           |                     | 32x 1.544, the bit clock for <a href="#">DS1</a> systems (+-32 ppm, ANSI T1.102).  |
| 49.830<br>49.860<br>49.890 | RC                            |                     | toy remote controls, walkie-talkies  |
| 50.000                     | <a href="#">Ethernet</a>      |                     | <a href="#">Fast Ethernet</a> (2×25 MHz), VGA pixel clock for 800x600@72 Hz; <sup>[17]</sup> <a href="#">PCI Express</a> clock source, doubled to 100 MHz  |
| 51.840                     | <a href="#">SONET</a>         | 115200              | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (450×115200 baud or 450×96×1,200 baud); <a href="#">SONET</a> STS-1 frequency (with accuracy of 20 =ppm) <sup>[14]</sup>  |
| 52.416                     | <a href="#">modems</a>        | 115200              | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (455×115200 baud or 455×96×1,200 baud) and to <a href="#">modem and fax rates</a> (936×56000, 1092×48000, 1560×33600, 1820×28800, 3640×14400, 4368×12000, etc.); also divides to some common audio frequencies (273×192000, 1092×48000)                                     |
| 53.125                     | <a href="#">Fibre Channel</a> |                     | <a href="#">Fibre Channel</a> clock  |

|                 |                               |        |   |
|-----------------|-------------------------------|--------|---|
| <b>56.448</b>   | <a href="#">modems</a>        | 115200 | 2×28.224 MHz; used in some faxes and modems; <a href="#">UART</a> clock, allows integer division to common baud rates (490×115200, 1024×38400, 2048×19200, etc.) and to <a href="#">modem and fax rates</a> (1008×56000, 1160×48000, 1680×33600, 1960×28800, 3920×14400, 4704×12000, etc.); also divides to common audio frequencies (294×192000, 1176×48000, 1280×44100, 2560×22050, 5120×11025) |
| <b>66.667</b>   |                               |        | common CPU clock, PCI bus clock   |
| <b>77.760</b>   |                               | 115200 | <a href="#">UART</a> clock; allows integer division to common <a href="#">baud rates</a> . (675×115200 baud or 675×96×1,200 baud). Commonly available as TCXO and OCXO.   |
| <b>80.0000</b>  |                               |        | common CPU clock  |
| <b>100.0000</b> |                               |        | <a href="#">PCI Express</a> clock <sup>[22]</sup>   |
| <b>106.250</b>  | <a href="#">Fibre Channel</a> |        | <a href="#">Fibre Channel</a> clock for 1.0625 gigabaud rate  |
| <b>106.5</b>    | radio                         |        | Used as an <a href="#">IF LO</a> in microwave transceivers, e.g. on the amateur 10 GHz band. Multiplied by 96 to produce 10.224 GHz signal. Available as OCXO.  |
| <b>125.000</b>  | <a href="#">Ethernet</a>      |        | <a href="#">Gigabit Ethernet GMII</a> GTXCLK clock, <a href="#">FDDI</a> clock  |
| <b>155.520</b>  | <a href="#">SONET</a> /SDH    |        | 3×51.840 MHz (SONET STS-1 frequency), <a href="#">SONET</a> /SDH clock  |
| <b>156.25</b>   | <a href="#">Ethernet</a>      |        | <a href="#">10 Gigabit Ethernet</a> clock, 64-bit signal <sup>[23][24]</sup>  |
| <b>161.1328</b> | <a href="#">Ethernet</a>      |        | <a href="#">10 Gigabit Ethernet</a> clock, 66-bit signal <sup>[23][24]</sup>  |

Ref: [http://en.wikipedia.org/wiki/Crystal\\_oscillator\\_frequencies](http://en.wikipedia.org/wiki/Crystal_oscillator_frequencies)