

YELLOW BOX

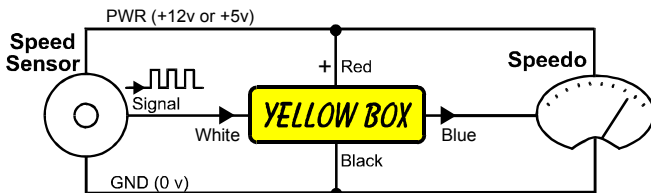
Electronic Speedo Recalibrator

Corrects speed errors caused by gearing changes and tyre size changes.

Installs permanently in the vehicle and provides real-time correction of the vehicle speedometer and odometer.

Also suitable for tachometer correction.

Adjusts from 1:10 to 10:1 correction!



Plug-n-play wiring harness is available for some vehicles and motorcycles, see our web page.

10 YEAR Warranty!

YELLR
WWW.YELLR.COM

Since our very first product in 1999, every Yellow Box is covered by our 10 year replacement warranty.

10 YEAR Warranty!

If your Yellow Box fails for any reason within 10 years simply return it and we will replace it with a new Yellow Box.

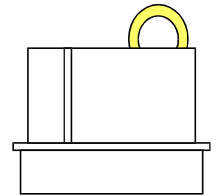
SPECS

Power supply voltage; 5v to 14.5v (12v automotive)
Power supply current; < 10mA
Input signal; 2v to 20v squarewave, 2v to 30v sinewave
Output signal; square / sine (switch selectable)
Freq range; 1Hz to 6000Hz (all standard speedo types)

IMPORTANT! Don't lose your Jumper Plug

We provide a special Jumper Plug with every Yellow Box.

This plug can replace the Yellow Box if you need to return the Yellow Box for warranty reasons.



When the Jumper Plug is plugged in it returns the wiring to the original configuration, which may also be useful for test purposes.

Yellow Box Features

Green LED Light

The Green light shows the signal coming from the vehicle speed sensor. It will flash at low speeds and may flicker or appear blurry at high speeds.

Molded Body

Our proprietary molding system uses high strength plastic designed to protect the electronics and last for decades.

Switch 1

Selects the type of output signal;
ON (up) = suits square wave 3-wire hall-effect sensors
OFF (down) = suits AC sinewave 2-wire inductive sensors
(You can change this switch when the vehicle is running, and see which setting works the best)

4 Pin Connector

Our standard connector is pin compatible with every Yellow Box version from 2001 onward;

1. Input (white wire)
2. Output (blue wire)
3. Ground (black wire)
4. +12v Power (red wire)

LED Lights

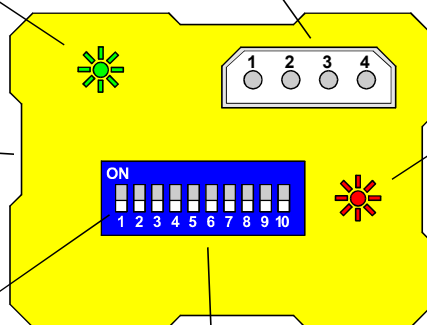
When the Yellow Box is first powered up both lights will flicker during the self-test sequence.

Red LED Light

In normal operation the Red light slowly repeats a sequence of 10 Flashes, to show the setting you selected on the 10 switches;

FF FFFF FFFF
Long Flash = switch is ON
Short Flash = switch is OFF

In special modes the Red light is used to indicate other things. See the special modes for more info.



Switches 2 - 10

These 9 switches set the speedo calibration ratio. Choose the desired switch settings from the ratio tables.

NOTE! These switches must be changed when the Yellow Box is powered down. The new ratio will take effect after you turn the ignition on and the Yellow Box powers up.

YELLOW BOX

Electronic Speedo Recalibrator

Thank you for purchasing a Yellow Box!

This new Yellow Box version YBX is our most technologically advanced product and is now automatically compatible with many different types of vehicle speed sensor. In 1999 we created the world's first computerised speedo recalibrator, and we are proud to continue the tradition of being the market leader in reliability and speed correction technology.

Reliability.

Your Yellow Box was designed, assembled and tested by craftsmen here in Australia and has been subjected to rigorous testing at multiple stages during its construction. If the Yellow Box does not work after installation, the most likely cause will be an incorrect switch setting or faulty installation wiring. Please check these carefully! We also have an installation and troubleshooting guide at our web page; www.YELLR.com

Calculating the Correction Ratio.

First you need to find your total speed error by comparing your speedo indicated speed to the actual vehicle speed. Use a GPS device or GPS speedo app on your smart phone to measure actual vehicle speed, and at the same time take note of the indicated speed on your speedo. It helps to drive on a straight level road at a steady speed for a couple of minutes to allow the GPS app to reach maximum accuracy.

Then do this simple calculation using a pocket calculator or the calculator app on your smart phone;

$$\text{Ratio} = \text{Indicated Speed} \text{ divided by } \text{Actual Speed}$$

Example 1; "Speedo reads too fast"

Speedo (indicated speed) 56
GPS (actual speed) 50
Ratio = 56 / 50 = 1.1200

Example 2; "Speedo reads too slow"

Speedo (indicated speed) 47
GPS (actual speed) 50
Ratio = 47 / 50 = 0.9400

Setting the Correction Ratio.

Look through the ratio tables provided in this instruction leaflet to find the ratio which is the best match. That will show you the switch setting for the 10 switches on the Yellow Box. Set the switches with the Yellow Box powered OFF, then when you turn it back on the correction ratio will be set.

NOTE 1. You can repeat the GPS test to make sure the ratio was correct. Sometimes you might need to choose the next ratio (above or below) to get the best accuracy.

NOTE 2. Don't forget that any time you change the ratio switches you need to turn the Yellow Box OFF then ON again.

NOTE 3. The first switch of the 10 (**switch 1**) does not affect the ratio, it sets the **type of output signal** to the speedo. It is marked as "x" in the ratio tables. (Also see Features Diagram.)

KPH to MPH conversion.

This feature can be useful on an imported vehicle to do a speedo conversion from kilometers to miles (or vice versa).

To show KPH on a MPH speedo, use ratio; 0.6214
To show MPH on a KPH speedo, use ratio; 1.6094

You may also want to correct for some small additional speedo error. If so, choose a ratio above or below the value shown here and compare with a GPS speedo reference like the calculator method shown above.

Special Test Modes.

To activate these modes, set the switches to the desired setting as shown for each mode then power up the Yellow Box. To end the special mode, turn the Yellow Box off and select your normal switch setting again.

All Switches ON.

11 1111 1111

This mode is used to test the 10 switches by displaying 10 long flashes on the red light. The speedo will not operate.

All Switches OFF.

00 0000 0000

In this mode the Yellow Box operates normally, but does not perform any recalibration of the speedo signal.

This mode can be used to see the speedo working with its original speed error (not corrected). It is also a switch test and will display 10 short flashes on the Red light.

Output Test Modes.

x0 1111 1000 25Hz
x0 1111 1001 50Hz
x0 1111 1010 100Hz
x0 1111 1011 200Hz *
x0 1111 1100 400Hz *
x0 1111 1101 800Hz *

These 6 modes send a calibrated speed signal to the speedo. This can be used to test that the speedo is working and also to choose which type of output signal works best with your speedo. Each test mode must be selected while the Yellow Box is powered down.

However **switch 1** (marked x) selects type of output signal, and this switch can be changed while the Yellow Box is running. In most cases, switch 1 should be ON (up).

* NOTE! On some speedos the higher frequencies (200, 400, 800) may cause the speedo to read max speed. Start with 25Hz then if the speedo reads low or zero, try each higher setting in turn.

Because all makes of speedos are different we cannot know what speed will be displayed, but the displayed speed should remain steady if the speedo is working properly. Try to choose a speed near the middle of your speedo range for best results.

Display Firmware Version.

x1 1111 1000

Display Hardware Version.

x1 1111 1001

The version will be displayed in binary as 8 flashes on the Red light. Example; Firmware v1.0 = 0001 0000

Speedo Sweep Test.

x1 1111 1010

The sweep test can be useful on older (dial type) speedos that use a moving pointer, especially if the pointer has become stuck at some position.

A signal will be sent to the speedo that increases speed over a few seconds until it reaches the speedo max speed then will hold there for a few seconds, and then sweep back to zero again. This may be able to fix a speedo that has a stuck pointer. The test performs once, after the Yellow Box powers up, so if you need to repeat the test turn the Yellow Box off then back on again.

Installation instructions available at;

www.YELLR.com

Also Plug-n-Play Harness to suit motorcycles, some cars and 4WDs

NORMAL CORRECTION RATIOS - Yellow Box Speedo Recalibrator - Version; YBX 2021

0 = Switch OFF (down), 1 = Switch ON (up), x = Set Output Signal Type (doesn't affect ratio)

| | | | | | |
|--------|--------------|--------|--------------|--------|--------------|
| RATIO | SWITCHES | 1.5964 | x0 0101 0011 | 0.7907 | x0 1010 0101 |
| 1.0000 | x0 0000 0000 | 1.6054 | x0 0101 0100 | 0.7863 | x0 1010 0110 |
| 1.0057 | x0 0000 0001 | 1.6145 | x0 0101 0101 | 0.7820 | x0 1010 0111 |
| 1.0113 | x0 0000 0010 | 1.6236 | x0 0101 0110 | 0.7776 | x0 1010 1000 |
| 1.0171 | x0 0000 0011 | 1.6328 | x0 0101 0111 | 0.7733 | x0 1010 1001 |
| 1.0228 | x0 0000 0100 | 1.6420 | x0 0101 1000 | 0.7690 | x0 1010 1010 |
| 1.0286 | x0 0000 0101 | 1.6513 | x0 0101 1001 | 0.7647 | x0 1010 1011 |
| 1.0344 | x0 0000 0110 | 1.6606 | x0 0101 1010 | 0.7604 | x0 1010 1100 |
| 1.0402 | x0 0000 0111 | 1.6700 | x0 0101 1011 | 0.7562 | x0 1010 1101 |
| 1.0461 | x0 0000 1000 | 1.6795 | x0 0101 1100 | 0.7520 | x0 1010 1110 |
| 1.0520 | x0 0000 1001 | 1.6890 | x0 0101 1101 | 0.7478 | x0 1010 1111 |
| 1.0580 | x0 0000 1010 | 1.6985 | x0 0101 1110 | 0.7436 | x0 1011 0000 |
| 1.0640 | x0 0000 1011 | 1.7081 | x0 0101 1111 | 0.7394 | x0 1011 0001 |
| 1.0700 | x0 0000 1100 | 1.7178 | x0 0110 0000 | 0.7353 | x0 1011 0010 |
| 1.0760 | x0 0000 1101 | 1.7275 | x0 0110 0001 | 0.7312 | x0 1011 0011 |
| 1.0821 | x0 0000 1110 | 1.7372 | x0 0110 0010 | 0.7271 | x0 1011 0100 |
| 1.0882 | x0 0000 1111 | 1.7470 | x0 0110 0011 | 0.7231 | x0 1011 0101 |
| 1.0944 | x0 0001 0000 | 1.7569 | x0 0110 0100 | 0.7191 | x0 1011 0110 |
| 1.1005 | x0 0001 0001 | 1.7668 | x0 0110 0101 | 0.7151 | x0 1011 0111 |
| 1.1068 | x0 0001 0010 | 1.7768 | x0 0110 0110 | 0.7111 | x0 1011 1000 |
| 1.1130 | x0 0001 0011 | 1.7869 | x0 0110 0111 | 0.7071 | x0 1011 1001 |
| 1.1193 | x0 0001 0100 | 1.7970 | x0 0110 1000 | 0.7032 | x0 1011 1010 |
| 1.1256 | x0 0001 0101 | 1.8071 | x0 0110 1001 | 0.6992 | x0 1011 1011 |
| 1.1320 | x0 0001 0110 | 1.8173 | x0 0110 1010 | 0.6953 | x0 1011 1100 |
| 1.1384 | x0 0001 0111 | 1.8276 | x0 0110 1011 | 0.6915 | x0 1011 1101 |
| 1.1448 | x0 0001 1000 | 1.8379 | x0 0110 1100 | 0.6876 | x0 1011 1110 |
| 1.1513 | x0 0001 1001 | 1.8483 | x0 0110 1101 | 0.6838 | x0 1011 1111 |
| 1.1578 | x0 0001 1010 | 1.8588 | x0 0110 1110 | 0.6800 | x0 1100 0000 |
| 1.1643 | x0 0001 1011 | 1.8693 | x0 0110 1111 | 0.6762 | x0 1100 0001 |
| 1.1709 | x0 0001 1100 | 1.8798 | x0 0111 0000 | 0.6724 | x0 1100 0010 |
| 1.1775 | x0 0001 1101 | 1.8905 | x0 0111 0001 | 0.6687 | x0 1100 0011 |
| 1.1842 | x0 0001 1110 | 1.9011 | x0 0111 0010 | 0.6649 | x0 1100 0100 |
| 1.1909 | x0 0001 1111 | 1.9119 | x0 0111 0011 | 0.6612 | x0 1100 0101 |
| 1.1976 | x0 0010 0000 | 1.9227 | x0 0111 0100 | 0.6575 | x0 1100 0110 |
| 1.2044 | x0 0010 0001 | 1.9336 | x0 0111 0101 | 0.6539 | x0 1100 0111 |
| 1.2112 | x0 0010 0010 | 1.9445 | x0 0111 0110 | 0.6502 | x0 1100 1000 |
| 1.2180 | x0 0010 0011 | 1.9555 | x0 0111 0111 | 0.6466 | x0 1100 1001 |
| 1.2249 | x0 0010 0100 | 1.9665 | x0 0111 1000 | 0.6430 | x0 1100 1010 |
| 1.2318 | x0 0010 0101 | 1.9776 | x0 0111 1001 | 0.6394 | x0 1100 1011 |
| 1.2388 | x0 0010 0110 | 1.9888 | x0 0111 1010 | 0.6359 | x0 1100 1100 |
| 1.2458 | x0 0010 0111 | 2.0000 | x0 0111 1011 | 0.6323 | x0 1100 1101 |
| 1.2529 | x0 0010 1000 | | | 0.6288 | x0 1100 1110 |
| 1.2599 | x0 0010 1001 | RATIO | SWITCHES | 0.6253 | x0 1100 1111 |
| 1.2671 | x0 0010 1010 | 0.9944 | x0 0111 1100 | 0.6218 | x0 1101 0000 |
| 1.2742 | x0 0010 1011 | 0.9889 | x0 0111 1101 | 0.6183 | x0 1101 0001 |
| 1.2814 | x0 0010 1100 | 0.9834 | x0 0111 1110 | 0.6149 | x0 1101 0010 |
| 1.2887 | x0 0010 1101 | 0.9779 | x0 0111 1111 | 0.6115 | x0 1101 0011 |
| 1.2959 | x0 0010 1110 | 0.9724 | x0 1000 0000 | 0.6080 | x0 1101 0100 |
| 1.3033 | x0 0010 1111 | 0.9670 | x0 1000 0001 | 0.6047 | x0 1101 0101 |
| 1.3106 | x0 0011 0000 | 0.9616 | x0 1000 0010 | 0.6013 | x0 1101 0110 |
| 1.3180 | x0 0011 0001 | 0.9563 | x0 1000 0011 | 0.5979 | x0 1101 0111 |
| 1.3255 | x0 0011 0010 | 0.9509 | x0 1000 0100 | 0.5946 | x0 1101 1000 |
| 1.3330 | x0 0011 0011 | 0.9456 | x0 1000 0101 | 0.5913 | x0 1101 1001 |
| 1.3405 | x0 0011 0100 | 0.9404 | x0 1000 0110 | 0.5880 | x0 1101 1010 |
| 1.3481 | x0 0011 0101 | 0.9351 | x0 1000 0111 | 0.5847 | x0 1101 1011 |
| 1.3557 | x0 0011 0110 | 0.9299 | x0 1000 1000 | 0.5815 | x0 1101 1100 |
| 1.3634 | x0 0011 0111 | 0.9247 | x0 1000 1001 | 0.5782 | x0 1101 1101 |
| 1.3711 | x0 0011 1000 | 0.9196 | x0 1000 1010 | 0.5750 | x0 1101 1110 |
| 1.3788 | x0 0011 1001 | 0.9144 | x0 1000 1011 | 0.5718 | x0 1101 1111 |
| 1.3866 | x0 0011 1010 | 0.9093 | x0 1000 1100 | 0.5686 | x0 1110 0000 |
| 1.3944 | x0 0011 1011 | 0.9043 | x0 1000 1101 | 0.5654 | x0 1110 0001 |
| 1.4023 | x0 0011 1100 | 0.8992 | x0 1000 1110 | 0.5623 | x0 1110 0010 |
| 1.4103 | x0 0011 1101 | 0.8942 | x0 1000 1111 | 0.5591 | x0 1110 0011 |
| 1.4182 | x0 0011 1110 | 0.8892 | x0 1001 0000 | 0.5560 | x0 1110 0100 |
| 1.4262 | x0 0011 1111 | 0.8843 | x0 1001 0001 | 0.5529 | x0 1110 0101 |
| 1.4343 | x0 0100 0000 | 0.8794 | x0 1001 0010 | 0.5498 | x0 1110 0110 |
| 1.4424 | x0 0100 0001 | 0.8745 | x0 1001 0011 | 0.5468 | x0 1110 0111 |
| 1.4506 | x0 0100 0010 | 0.8696 | x0 1001 0100 | 0.5437 | x0 1110 1000 |
| 1.4588 | x0 0100 0011 | 0.8647 | x0 1001 0101 | 0.5407 | x0 1110 1001 |
| 1.4670 | x0 0100 0100 | 0.8599 | x0 1001 0110 | 0.5377 | x0 1110 1010 |
| 1.4753 | x0 0100 0101 | 0.8551 | x0 1001 0111 | 0.5347 | x0 1110 1011 |
| 1.4836 | x0 0100 0110 | 0.8504 | x0 1001 1000 | 0.5317 | x0 1110 1100 |
| 1.4920 | x0 0100 0111 | 0.8456 | x0 1001 1001 | 0.5287 | x0 1110 1101 |
| 1.5004 | x0 0100 1000 | 0.8409 | x0 1001 1010 | 0.5258 | x0 1110 1110 |
| 1.5089 | x0 0100 1001 | 0.8362 | x0 1001 1011 | 0.5229 | x0 1110 1111 |
| 1.5175 | x0 0100 1010 | 0.8315 | x0 1001 1100 | 0.5200 | x0 1111 0000 |
| 1.5260 | x0 0100 1011 | 0.8269 | x0 1001 1101 | 0.5171 | x0 1111 0001 |
| 1.5347 | x0 0100 1100 | 0.8223 | x0 1001 1110 | 0.5142 | x0 1111 0010 |
| 1.5433 | x0 0100 1101 | 0.8177 | x0 1001 1111 | 0.5113 | x0 1111 0011 |
| 1.5520 | x0 0100 1110 | 0.8132 | x0 1010 0000 | 0.5085 | x0 1111 0100 |
| 1.5608 | x0 0100 1111 | 0.8086 | x0 1010 0001 | 0.5056 | x0 1111 0101 |
| 1.5696 | x0 0101 0000 | 0.8041 | x0 1010 0010 | 0.5028 | x0 1111 0110 |
| 1.5785 | x0 0101 0001 | 0.7996 | x0 1010 0011 | 0.5000 | x0 1111 0111 |
| 1.5874 | x0 0101 0010 | 0.7952 | x0 1010 0100 | | |

WIDE CORRECTION RATIOS - Yellow Box Speedo Recalibrator - Version; YBX 2021

0 = Switch OFF (down), 1 = Switch ON (up), x = Set Output Signal Type (doesn't affect ratio)

| | | | | | |
|--------|--------------|---------|--------------|--------|--------------|
| RATIO | SWITCHES | 5.9502 | x1 0101 0011 | 0.2899 | x1 1010 0101 |
| 2.0261 | x1 0000 0000 | 6.0279 | x1 0101 0100 | 0.2862 | x1 1010 0110 |
| 2.0526 | x1 0000 0001 | 6.1066 | x1 0101 0101 | 0.2825 | x1 1010 0111 |
| 2.0794 | x1 0000 0010 | 6.1864 | x1 0101 0110 | 0.2788 | x1 1010 1000 |
| 2.1066 | x1 0000 0011 | 6.2672 | x1 0101 0111 | 0.2752 | x1 1010 1001 |
| 2.1341 | x1 0000 0100 | 6.3491 | x1 0101 1000 | 0.2717 | x1 1010 1010 |
| 2.1620 | x1 0000 0101 | 6.4321 | x1 0101 1001 | 0.2682 | x1 1010 1011 |
| 2.1902 | x1 0000 0110 | 6.5161 | x1 0101 1010 | 0.2647 | x1 1010 1100 |
| 2.2188 | x1 0000 0111 | 6.6012 | x1 0101 1011 | 0.2613 | x1 1010 1101 |
| 2.2478 | x1 0000 1000 | 6.6874 | x1 0101 1100 | 0.2579 | x1 1010 1110 |
| 2.2772 | x1 0000 1001 | 6.7748 | x1 0101 1101 | 0.2546 | x1 1010 1111 |
| 2.3069 | x1 0000 1010 | 6.8633 | x1 0101 1110 | 0.2513 | x1 1011 0000 |
| 2.3371 | x1 0000 1011 | 6.9530 | x1 0101 1111 | 0.2481 | x1 1011 0001 |
| 2.3676 | x1 0000 1100 | 7.0438 | x1 0110 0000 | 0.2449 | x1 1011 0010 |
| 2.3985 | x1 0000 1101 | 7.1358 | x1 0110 0001 | 0.2417 | x1 1011 0011 |
| 2.4299 | x1 0000 1110 | 7.2291 | x1 0110 0010 | 0.2386 | x1 1011 0100 |
| 2.4616 | x1 0000 1111 | 7.3235 | x1 0110 0011 | 0.2355 | x1 1011 0101 |
| 2.4938 | x1 0001 0000 | 7.4192 | x1 0110 0100 | 0.2325 | x1 1011 0110 |
| 2.5264 | x1 0001 0001 | 7.5161 | x1 0110 0101 | 0.2295 | x1 1011 0111 |
| 2.5594 | x1 0001 0010 | 7.6143 | x1 0110 0110 | 0.2265 | x1 1011 1000 |
| 2.5928 | x1 0001 0011 | 7.7138 | x1 0110 0111 | 0.2236 | x1 1011 1001 |
| 2.6267 | x1 0001 0100 | 7.8145 | x1 0110 1000 | 0.2207 | x1 1011 1010 |
| 2.6610 | x1 0001 0101 | 7.9166 | x1 0110 1001 | 0.2179 | x1 1011 1011 |
| 2.6957 | x1 0001 0110 | 8.0200 | x1 0110 1010 | 0.2151 | x1 1011 1100 |
| 2.7310 | x1 0001 0111 | 8.1248 | x1 0110 1011 | 0.2123 | x1 1011 1101 |
| 2.7666 | x1 0001 1000 | 8.2310 | x1 0110 1100 | 0.2096 | x1 1011 1110 |
| 2.8028 | x1 0001 1001 | 8.3385 | x1 0110 1101 | 0.2069 | x1 1011 1111 |
| 2.8394 | x1 0001 1010 | 8.4474 | x1 0110 1110 | 0.2042 | x1 1100 0000 |
| 2.8765 | x1 0001 1011 | 8.5578 | x1 0110 1111 | 0.2016 | x1 1100 0001 |
| 2.9141 | x1 0001 1100 | 8.6696 | x1 0111 0000 | 0.1990 | x1 1100 0010 |
| 2.9521 | x1 0001 1101 | 8.7828 | x1 0111 0001 | 0.1964 | x1 1100 0011 |
| 2.9907 | x1 0001 1110 | 8.8976 | x1 0111 0010 | 0.1939 | x1 1100 0100 |
| 3.0298 | x1 0001 1111 | 9.0138 | x1 0111 0011 | 0.1914 | x1 1100 0101 |
| 3.0694 | x1 0010 0000 | 9.1316 | x1 0111 0100 | 0.1889 | x1 1100 0110 |
| 3.1095 | x1 0010 0001 | 9.2509 | x1 0111 0101 | 0.1865 | x1 1100 0111 |
| 3.1501 | x1 0010 0010 | 9.3717 | x1 0111 0110 | 0.1841 | x1 1100 1000 |
| 3.1912 | x1 0010 0011 | 9.4941 | x1 0111 0111 | 0.1817 | x1 1100 1001 |
| 3.2329 | x1 0010 0100 | 9.6182 | x1 0111 1000 | 0.1793 | x1 1100 1010 |
| 3.2752 | x1 0010 0101 | 9.7438 | x1 0111 1001 | 0.1770 | x1 1100 1011 |
| 3.3179 | x1 0010 0110 | 9.8711 | x1 0111 1010 | 0.1747 | x1 1100 1100 |
| 3.3613 | x1 0010 0111 | 10.0000 | x1 0111 1011 | 0.1725 | x1 1100 1101 |
| 3.4052 | x1 0010 1000 | | | 0.1703 | x1 1100 1110 |
| 3.4497 | x1 0010 1001 | RATIO | SWITCHES | 0.1681 | x1 1100 1111 |
| 3.4947 | x1 0010 1010 | 0.4936 | x1 0111 1100 | 0.1659 | x1 1101 0000 |
| 3.5404 | x1 0010 1011 | 0.4872 | x1 0111 1101 | 0.1638 | x1 1101 0001 |
| 3.5867 | x1 0010 1100 | 0.4809 | x1 0111 1110 | 0.1617 | x1 1101 0010 |
| 3.6335 | x1 0010 1101 | 0.4747 | x1 0111 1111 | 0.1596 | x1 1101 0011 |
| 3.6810 | x1 0010 1110 | 0.4686 | x1 1000 0000 | 0.1575 | x1 1101 0100 |
| 3.7291 | x1 0010 1111 | 0.4625 | x1 1000 0001 | 0.1555 | x1 1101 0101 |
| 3.7778 | x1 0011 0000 | 0.4566 | x1 1000 0010 | 0.1535 | x1 1101 0110 |
| 3.8271 | x1 0011 0001 | 0.4507 | x1 1000 0011 | 0.1515 | x1 1101 0111 |
| 3.8771 | x1 0011 0010 | 0.4449 | x1 1000 0100 | 0.1495 | x1 1101 1000 |
| 3.9278 | x1 0011 0011 | 0.4391 | x1 1000 0101 | 0.1476 | x1 1101 1001 |
| 3.9791 | x1 0011 0100 | 0.4335 | x1 1000 0110 | 0.1457 | x1 1101 1010 |
| 4.0311 | x1 0011 0101 | 0.4279 | x1 1000 0111 | 0.1438 | x1 1101 1011 |
| 4.0837 | x1 0011 0110 | 0.4224 | x1 1000 1000 | 0.1420 | x1 1101 1100 |
| 4.1371 | x1 0011 0111 | 0.4169 | x1 1000 1001 | 0.1401 | x1 1101 1101 |
| 4.1911 | x1 0011 1000 | 0.4115 | x1 1000 1010 | 0.1383 | x1 1101 1110 |
| 4.2459 | x1 0011 1001 | 0.4062 | x1 1000 1011 | 0.1366 | x1 1101 1111 |
| 4.3014 | x1 0011 1010 | 0.4010 | x1 1000 1100 | 0.1348 | x1 1110 0000 |
| 4.3576 | x1 0011 1011 | 0.3958 | x1 1000 1101 | 0.1331 | x1 1110 0001 |
| 4.4145 | x1 0011 1100 | 0.3907 | x1 1000 1110 | 0.1313 | x1 1110 0010 |
| 4.4722 | x1 0011 1101 | 0.3857 | x1 1000 1111 | 0.1296 | x1 1110 0011 |
| 4.5306 | x1 0011 1110 | 0.3807 | x1 1001 0000 | 0.1280 | x1 1110 0100 |
| 4.5898 | x1 0011 1111 | 0.3758 | x1 1001 0001 | 0.1263 | x1 1110 0101 |
| 4.6497 | x1 0100 0000 | 0.3710 | x1 1001 0010 | 0.1247 | x1 1110 0110 |
| 4.7105 | x1 0100 0001 | 0.3662 | x1 1001 0011 | 0.1231 | x1 1110 0111 |
| 4.7720 | x1 0100 0010 | 0.3615 | x1 1001 0100 | 0.1215 | x1 1110 1000 |
| 4.8343 | x1 0100 0011 | 0.3568 | x1 1001 0101 | 0.1199 | x1 1110 1001 |
| 4.8975 | x1 0100 0100 | 0.3522 | x1 1001 0110 | 0.1184 | x1 1110 1010 |
| 4.9615 | x1 0100 0101 | 0.3477 | x1 1001 0111 | 0.1169 | x1 1110 1011 |
| 5.0263 | x1 0100 0110 | 0.3432 | x1 1001 1000 | 0.1154 | x1 1110 1100 |
| 5.0920 | x1 0100 0111 | 0.3387 | x1 1001 1001 | 0.1139 | x1 1110 1101 |
| 5.1585 | x1 0100 1000 | 0.3344 | x1 1001 1010 | 0.1124 | x1 1110 1110 |
| 5.2259 | x1 0100 1001 | 0.3301 | x1 1001 1011 | 0.1109 | x1 1110 1111 |
| 5.2941 | x1 0100 1010 | 0.3258 | x1 1001 1100 | 0.1095 | x1 1111 0000 |
| 5.3633 | x1 0100 1011 | 0.3216 | x1 1001 1101 | 0.1081 | x1 1111 0001 |
| 5.4334 | x1 0100 1100 | 0.3175 | x1 1001 1110 | 0.1067 | x1 1111 0010 |
| 5.5044 | x1 0100 1101 | 0.3134 | x1 1001 1111 | 0.1053 | x1 1111 0011 |
| 5.5763 | x1 0100 1110 | 0.3093 | x1 1010 0000 | 0.1040 | x1 1111 0100 |
| 5.6491 | x1 0100 1111 | 0.3053 | x1 1010 0001 | 0.1026 | x1 1111 0101 |
| 5.7229 | x1 0101 0000 | 0.3014 | x1 1010 0010 | 0.1013 | x1 1111 0110 |
| 5.7977 | x1 0101 0001 | 0.2975 | x1 1010 0011 | 0.1000 | x1 1111 0111 |
| 5.8734 | x1 0101 0010 | 0.2937 | x1 1010 0100 | | |