

TENDERFOOT ELECTRONICS

QQ2 - REVISION 1 24/6/2023

QQ2 MANUAL

PANEL LAYOUT

CV INPUTS

EACH CHANNEL IS ARRANGED FROM LEFT TO RIGHT ACROSS THE PANEL OF THE QQ2.

THE FIRST JACK IS THE CV INPUT, WHICH CAN ACCEPT ANY VOLTAGE BETWEEN -3V and +7V TO BE QUANTIZED. VOLTAGES OUTSIDE OF THIS RANGE WILL NOT CAUSE DAMAGE, THEY JUST WON'T BE PROCESSED.

TRIGGER INPUTS

WHEN NO CABLE IS INSERTED INTO THE TRIGGER INPUT, THE CHANNEL WILL CONTINUALLY QUANTIZE THE CV INPUT. WHEN A CABLE IS INSERTED INTO THE TRIGGER INPUT, THIS WILL IMMEDIATELY CEASE, AND THE CV INPUT WILL ONLY BE READ WHEN A TRIGGER SIGNAL IS PRESENT AT THE INPUT.

A HIGH GATE SIGNAL WILL BE RECOGNIZED AS A SINGLE TRIGGER, UNTIL IT IS OVER 5 SECONDS IN LENGTH, AT WHICH POINT THE CHANNEL WILL BEGIN TO CONTINUALLY QUANTIZE THE CV INPUT AGAIN. THIS IS DUE TO NORMALLING OF A LOGIC HIGH SIGNAL TO THE SWITCH OF THE TRIGGER IN JACKS IN ORDER TO QUICKLY TEST THE PRESENCE OF A PATCH CABLE.

OLED SCREEN

THE QQ2 USES A 128x32 OLED SCREEN TO ALLOW QUICK AND EASY EDITING OF THE QUANTIZER AND MOD CHANNELS, AS WELL AS DEEPER LEVEL SETTINGS SUCH AS CALIBRATION AND FIRMWARE UPDATING OVER WIFI.



CV OUTPUTS

THE QUANTIZED OUTPUT EMERGES AT THE CV OUTPUT OF EACH CHANNEL. THE RANGE OF VOLTAGES IS -3V TO +7V. THIS GIVES THE OUTPUT A RESOLUTION OF AROUND 0.0025V

TRIGGER OUTPUTS

WHENEVER A NEW VOLTAGE IS OUTPUT AT THE CV OUTPUT, OR WHENEVER A TRIGGER IS DETECTED AT THE TRIGGER INPUT, THE TRIGGER OUTPUT OF THE QUANTIZER CHANNEL WILL OUTPUT A 7.5V TRIGGER SIGNAL WITH A DURATION OF 8ms.

THIS CAN BE USED TO TRIGGER AN ENVELOPE GENERATOR OR ANY OTHER EVENT IN YOUR MODULAR SYSTEM.

MOD INPUTS

THE QQ2 HAS 2 MODULATION INPUTS TO MODULATE CERTAIN ASSIGNABLE PARAMETERS OF THE QUANTIZER. THE JACKS ARE NORMALLED TO A VOLTAGE REFERENCE, ALLOWING THE ASSOCIATED ATTENUATOR DIALS TO BE USED TO ADJUST THE ASSIGNED PARAMETERS. WHEN A CABLE IS PATCHED IN, THE DIAL WILL ATTENUATE THE SIGNAL. THE CV INPUT LIMITS OF MOD1 AND MOD2 ARE -5V/+5V, VALUES OUTSIDE OF THIS WILL NOT BE READ, BUT WILL NOT CAUSE DAMAGE.

ILLUMINATED SCALE BUTTONS

IN ADDITION TO BUILT-IN SCALES THAT ARE SELECTABLE VIA THE OLED, NOTES CAN BE QUICKLY SELECTED, EDITED AND DISPLAYED VIA THE ILLUMINATED TACTILE SWITCHES.

ENCODER

THE ROTARY ENCODER IS USED TO NAVIGATE THE USER INTERFACE ON THE OLED SCREEN. THE DIAL CAN BE PRESSED INWARD AS THE ENTER/ACCEPT BUTTON.

USER INTERFACE - TURN ENCODER

MAIN SCREEN

CHANNEL ASSIGNMENT

THE QQ2 ALLOWS FOR UP TO 4 SCALES ('ABCD') TO BE EDITED AT ONCE, WITH THE 4 SEPARATE QUANTIZER CHANNELS BEING ASSIGNABLE TO ANY ONE OF THE CURRENTLY AVAILABLE SCALES.

THE ARROW INDICATORS SHOW WHICH OF THE NUMBERED QUANTIZER CHANNELS ARE CURRENTLY ASSIGNED TO THE SELECTED SCALE. IN THIS EXAMPLE, ALL 4 QUANTIZER CHANNELS ARE ASSIGNED TO AND THEREFORE SHARE SCALE 'A'

SCALE NAME

DISPLAYS THE NAME OF THE IN-BUILT SCALE CURRENTLY BEING HIGHLIGHTED AND EDITED

CURRENT KEY

DISPLAYS THE KEY OF THE IN-BUILT SCALE CURRENTLY BEING HIGHLIGHTED AND EDITED



CURRENT SCALE

DISPLAYS WHICH OF THE SCALE SLOTS IS CURRENTLY HIGHLIGHTED AND BEING EDITED. TURNING THE ENCODER WILL SWITCH BETWEEN THESE SLOTS LABELED 'A', 'B', 'C', 'D'. IN THIS EXAMPLE 'A' IS SELECTED.

PRESSING DOWN THE ENCODER BUTTON AT THIS POINT WILL ALLOW THE EDITING OF THE KEY, SCALE PRESET AND CHANNEL ASSIGNMENT OF SCALE 'A'.

AVAILABLE PRE-PROGRAMMED SCALES (ver 1.04) - SHOWN IN KEY C

- | | |
|--------------------------|----------------------|
| 1 - BLANK | 26 - HAWAIIAN |
| 2 - CHROMATIC | 27 - HINDU |
| 3 - MAJOR | 28 - HIRJOSHI |
| 4 - NATURAL MINOR | 29 - HUNGARIAN MINOR |
| 5 - HARMONIC MINOR | 30 - IBERIAN |
| 6 - MELODIC MINOR | 31 - IWATO |
| 7 - MAJOR PENTATONIC | 32 - JAPANESE |
| 8 - MINOR PENTATONIC | 33 - LYDIAN b7 |
| 9 - DORIAN | 34 - MAGAM |
| 10 - PHRYGIAN | 35 - NEAPOLITAN |
| 11 - LYDIAN | 36 - OCTATONIC |
| 12 - MIXOLYDIAN | 37 - OKINAWAN |
| 13 - LOCRIAN | 38 - ORIENTAL |
| 14 - ALGERIAN | 39 - PROMETHEUS |
| 15 - ARABIAN | 40 - ROMANIAN MINOR |
| 16 - AUGMENTED | 41 - SPANISH GYPSY |
| 17 - BALINESE | 42 - SUPER LOCRIAN |
| 18 - BYZANTINE | 43 - WHOLETONE |
| 19 - CHINESE | 44 - YO |
| 20 - DIMINISHED | |
| 21 - DOMINANT DIMINISHED | |
| 22 - EGYPTIAN | |
| 23 - EIGHT TONE SPANISH | |
| 24 - ENIGMATIC | |
| 25 - GEEZ | |

HOLD ENCODER BUTTON 1 SECOND

MOD SCREEN

MOD 1 CHANNEL ASSIGNMENT

IN THE SAME WAY THAT EACH QUANTIZER CHANNEL CAN BE LINKED TO THE 4 SEPARATE SCALES, EACH MOD CONTROL CAN BE ASSIGNED TO ANY OF THE 4 QUANTIZER CHANNELS.

ASSIGNED MOD PARAMETER

DISPLAYS THE NAME OF THE PARAMETER THAT THE SELECTED MOD CHANNEL CONTROLS.

MOD 2 CHANNEL ASSIGNMENT

MOD PARAMETERS

AS OF FIRMWARE VER. 1.04, THE AVAILABLE MOD PARAMETERS ARE:

Transp PRE - TRANSPOSES THE INCOMING CV BEFORE BEING QUANTIZED, ALLOWING FOR INVERSIONS OF THE CURRENT SCALE

Transp POST - TRANSPOSES THE OUTPUT OF THE ASSIGNED QUANTIZER CHANNEL BY SEMITONE INCREMENTS AFTER QUANTIZATION, ALLOWING FOR KEY CHANGES

OCTAVE - SHIFTS THE OUTPUT OF THE SELECTED QUANTIZER CHANNELS UP OR DOWN ONE OCTAVE AT A TIME

SCALE ASSIGNMENT - ALLOWS THE USE OF CV OR THE MOD DIALS TO SWITCH BETWEEN THE 4 SCALES ('ABCD'). AT 0V CV AND UNDER, THE ASSIGNED CHANNELS WILL FOLLOW SCALE 'A'.

SELECTED MOD CHANNEL

DISPLAYS WHICH OF THE MOD CHANNELS IS CURRENTLY SELECTED FOR EDITING. IN THIS CASE, MOD 1 IS HIGHLIGHTED.



HOLD ENCODER BUTTON 3 SECONDS

SETTINGS

CALIBRATE

ENTERING THIS MENU ALLOWS THE CALIBRATION OF THE CV INPUT AND OUTPUTS OF EACH CHANNEL, AS WELL AS THE CV INPUTS OF THE MOD CHANNELS



UPDATE

THIS MENU ALLOWS FOR THE SCANNING OF AND CONNECTING TO WIFI NETWORKS FOR THE PURPOSES OF UPDATING THE MODULE'S FIRMWARE.

PRESS ENCODER ON CALIBRATE

CALIBRATION 1

CHANNEL SELECTER

SELECT WHICH CHANNEL OR MOD INPUT YOU WISH TO CALIBRATE



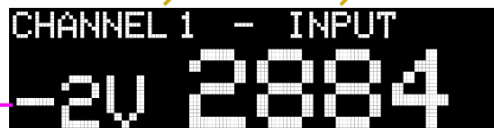
IN / OUT HIGHLIGHTER

USED TO SELECT WHETHER YOU WISH TO CALIBRATE THE CHANNEL INPUT OR OUTPUT.

CALIBRATION 2

REFERENCE INDICATOR

INDICATES WHAT VALUE YOU EITHER NEED TO INPUT TO THE CHANNEL WHEN CALIBRATING AN INPUT, OR ADJUST THE OUTPUT READING TO WHEN CALIBRATING AN OUTPUT



CHANNEL AND IN/OUT INDICATOR

REMINDS YOU WHICH CHANNEL YOU ARE EDITING AND WHETHER IT'S AN INPUT OR OUTPUT

RAW ADC/DAC READING

SHOWS YOU THE LIVE BIT READING OF THE INTERNAL ANALOG TO DIGITAL CONVERTER WHEN CALIBRATING AN INPUT, AND THE DIGITAL TO ANALOG CONVERTER WHEN CALIBRATING AN OUTPUT

PRESS ENCODER ON UPDATE

UPDATE

WIFI SCAN

ENTERING THIS MENU WILL SCAN FOR LOCAL WIFI NETWORKS AND ALLOW YOU TO ENTER YOUR WIFI PASSWORD ALLOWING FOR WIRELESS FIRMWARE UPDATING. THIS WILL RESTART THE MODULE ONCE COMPLETE.



UPDATE NOW

THIS WILL CONNECT TO THE SELECTED WIFI NETWORK USING THE CREDENTIALS ENTERED IN THE "WIFI SCAN" MENU. YOU WILL THEN BE PROMPTED VIA THE OLED SCREEN ON HOW TO COMPLETE THE WIRELESS FIRMWARE UPDATE PROCESS