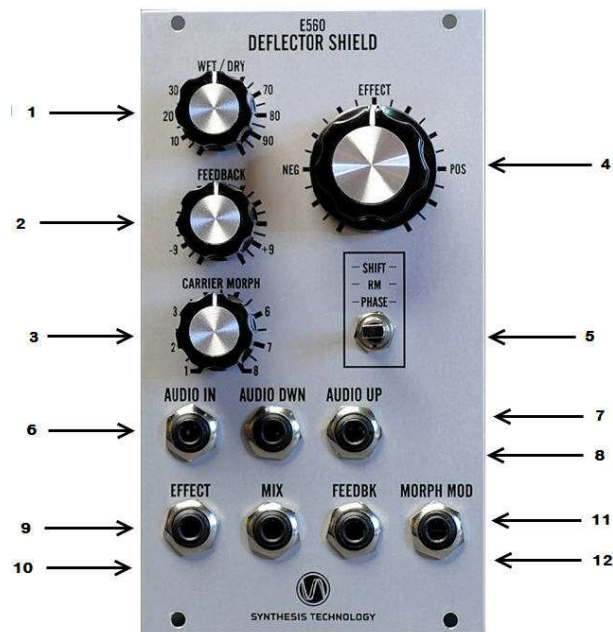


E560 Deflector Shield

www.synthtech.com/euro/e560



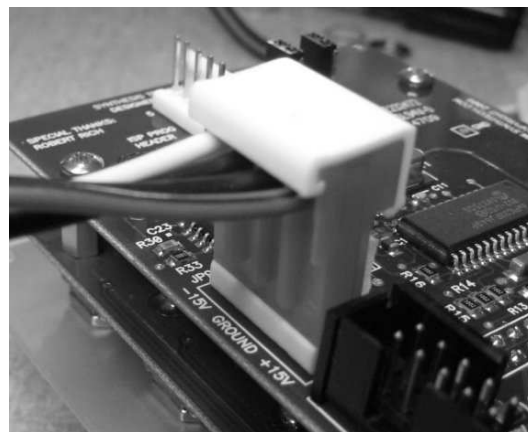
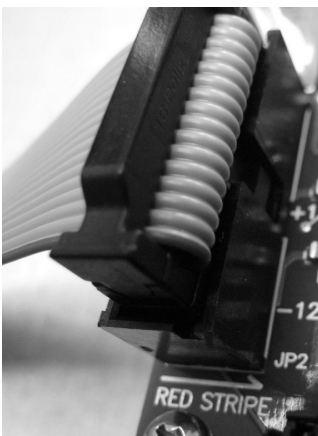
What is the E560?

The Synthesis Technology E560 is a combination frequency shifter, phaser and ring modulator. The audio is mono in, and stereo out. This is an audio-only module (not suited for DC input voltages).

There are 4 control voltages (summed with the corresponding 4 panel controls) that allow real-time manipulation of the audio. In many cases, a very slow LFO is used to drive a CV input, but you can use envelope generators, output from a S&H, a sequencer or any other signal. Since the E560 does not have built-in attenuators, you normally first attenuate a CV before plugging it into the E560. If you want to use a full-scale, -5V to +5V signal, the panel knob must be set straight up ('12:00 position') or the internal voltage clamps will limit the swing. Remember, any applied CV to a jack is added to the position on the panel knob for that function. Applying a negative voltage corresponds to turning the knob down, and a positive voltage is like turning the knob up.

Connecting to the power supply

The E560 can use either a MOTM 4-pin, MTA-156 style connector (+-15V) or a 16-pin Euro style (+-12V) connector. See the photos below. The Euro ribbon cable has a red stripe to indicate -12V. The supplied Euro power cable is keyed so that when inserted in the E560, the red stripe is 'down' (towards the jacks) and by the white lettering on the pc board.



Controls and Jacks

1 – WET/DRY. This is a fader between the input signal (DRY, fully CCW) to the output signal (WET, fully CW).

2 – FEEDBACK. This will apply either negative feedback (CCW) or positive feedback (CW). When placed in the center, there is zero feedback.

3 – CARRIER MORPH. There are 8 waveforms for the internal carrier oscillator. They are: sine, triangle, saw, square, 16-point random phase, 64-point random phase, 'spindle wave' and 3x frequency sine. The control smoothly cross-fades from one to another as you turn it. If you are in doubt on which one to use, always start with the sine wave at Position #1.

4 – EFFECT. This will apply one of the 3 effects, selected by switch (5). The EFFECT knob will behave differently, based on the MODE switch.

FREQ mode: the knob is bi-polar, meaning when 'straight up' in the center, no frequency shift is applied. As the knob is turned CCW, the shift goes down and CW, the shift goes up.

RM mode: the knob applies the carrier selected to a 4-quadrant multiplier ('ring mod'), and EFFECT is the frequency of the carrier.

PHASE mode: the internal carrier is disabled. The knob sets the phase shift from 0 degrees (full CCW) to 360 degrees (fully CW).

5 – MODE. Selects one of 3 operating modes.

6 – AUDIO IN. Apply mono audio here. **NOTE:** the input is set for **LINE LEVEL** (3V pk-pk). If you want to feed in a full-level synth signal from say a VCO or VCF, you must first attenuate it externally.

7/8 – AUDIO DOWN/UP. SHIFT mode: the audio outputs are simultaneously shifted up and down in frequency. The internal carrier wave (selected by CARRIER MORPH) is used, and the frequency of the carrier is the amount of shift. For most cases, the sine wave is used. The E560 has 7 other waves that will provide a huge range of shifted sounds. RM mode: the 2 outputs are 90 degrees out of phase and contain sum and difference frequencies. PHASE mode: the 2 outputs are 90 degrees out of phase. The carrier oscillator is disabled and the amount of phase shift (0-360 degrees) is set by the EFFECT knob, modified by the CARRIER MORPH waveform. Think of the EFFECT knob as indexing through the wavetable, selected by CARRIER MORPH.

9 – EFFECT CV. Any CV applied here is added to the EFFECT knob position.

10 – MIX CV. Applied CV is added to the WET/DRY knob position.

11 – FEEDBK (Feedback) CV. Applied CV is added to the FEEDBACK knob position.

12 – MORPH MOD. Applied CV is added to the CARRIER MORPH knob.

General Info

CV Inputs: -5V to +5V, DC to 8KHz.

Audio input: 3V pk-pk maximum (for 0% feedback), 5Hz minimum frequency.

Audio Outputs: -5V to +5V, 5Hz to 18KHz

Power: +12/+15V @ 90ma, -12/-15@20ma.

Jumper option (JP2): default is 1-2 position (normal). When jumper is in the 2-3 position (quadrature oscillator) and the MODE switch is in PHASE, the carrier wave will appear at the AUDIO DOWN/UP jacks (90 deg out of phase with each other, in quadrature). Note that due to AC coupling in the audio DAC filters, this waveform will only be full-scale at frequencies > 5Hz.