## RYO Discrete TRL Boolean Logics

NAND/AND

**1** Gate one input 1 (normalled 1>2)

**2** Gate one input 2 (normalled 2>3)

**3** Gate one input 3

4 Gate one NAND Output

**5** Gate one AND Output (normalled to Gate two input 1)

**6** Gate two input 1 (inputs normalled 1>2)

**7** Gate two input 2

**8** Gate two NAND output

**9** Gate two AND output

[Try dif input amplitudes, waveforms and frequency rates including audio into inputs!] Width: 4 hp

| Name           |                  |                  | AND              | NAND                |
|----------------|------------------|------------------|------------------|---------------------|
| Alg.<br>Expr.  |                  |                  | X = AB           | $X = \overline{AB}$ |
| Symbol         | Α                | В                | A & X            | A—& >-X             |
| Truth<br>Table | 0<br>0<br>1<br>1 | 0<br>1<br>0<br>1 | 0<br>0<br>0<br>1 | 1<br>1<br>1<br>0    |

| Name           |                                 |                                      |                                 | AND                        | NAND                            |
|----------------|---------------------------------|--------------------------------------|---------------------------------|----------------------------|---------------------------------|
| Alg.<br>Expr.  |                                 |                                      |                                 | X = ABC                    | $X = \overline{ABC}$            |
| Symbol         | А                               | В                                    | С                               | A                          | A<br>B                          |
| Truth<br>Table | 0<br>0<br>0<br>0<br>1<br>1<br>1 | 0<br>0<br>1<br>1<br>0<br>0<br>1<br>1 | 0<br>1<br>0<br>1<br>0<br>1<br>0 | 0<br>0<br>0<br>0<br>0<br>0 | 1<br>1<br>1<br>1<br>1<br>1<br>0 |

| Option 1                        | Option 2    | Option 3              |
|---------------------------------|-------------|-----------------------|
| A<br>B<br>C<br>W<br>W<br>W<br>W | A & & & & X | A<br>B<br>C<br>& & ~X |