eTable 1 Outputs in BOOT State

|  |  |  |
| --- | --- | --- |
| State | Output | Expression |
| BOOT | L1 | S1 |
| L2 | S2 |
| L3 | S3 |
| L4 | S4 |
| N1 | S1'S2S3'S4' |
| N2 | S1'S2S3'S4' |
| N3 | 1 |

Table 2 Table 1 Outputs in SEQ1 State

|  |  |  |
| --- | --- | --- |
| State | Output | Expression |
| SEQ1 | L1 | S1 |
| L2 | S2 |
| L3 | S3 |
| L4 | S4 |
| N1 | TS1’S2’S3’S4 |
| N2 | TS1'S2'S3S4'+TS1'S2S3'S4’  N2 = TS1'(S2'S3S4' + S2S3'S4') = TS1'S4'(S2'S3 + S2S3') = TS1'S4'(S2 XOR S3) |
| N3 | T'+S1+S2'S4'+S2S4+S3  = T’ + S1+S3 + (S2 XOR S4)’ |

Table 3 Table 1 Outputs in SEQ2 State

|  |  |  |
| --- | --- | --- |
| State | Output | Expression |
| SEQ2 | L1 | S4 |
| L2 | S2 |
| L3 | S1 |
| L4 | S3 |
| N1 | TS1’S2’S3’S4 |
| N2 | T'+S1'S4'+S1S4+S2+S3  N2 = T' + S2 + S3 + (S1 XNOR S4) |
| N3 | TS1'S2'S3 S4'+TS1S2'S3'S4' = D4 |

Table 4 Table 1 Outputs in SEQ3 State

|  |  |  |
| --- | --- | --- |
| State | Output | Expression |
| SEQ3 | L1 | S2 |
| L2 | S4 |
| L3 | S3 |
| L4 | S1 |
| N1 | TS1'S2'S3'S4+TS1S4'+TS2S4'+TS3S4'  = … + TS4’(S1+S2+S3) |
| N2 | T'+S1'S2'S3'S4 '+S1S4+S2S4 +S3S4  N2 = T' + S1'S2'S3'S4' + S4(S1 + S2 + S3) |
| N3 | T'+S1+S2+S3+S4' |

Table 5 Table 1 Outputs in SEQ4 State

|  |  |  |
| --- | --- | --- |
| State | Output | Expression |
| SEQ4 | L1 | S3 |
| L2 | S1 |
| L3 | S2 |
| L4 | S4 |
| N1 | T'+S1'S2'S3'+S1S2+S1S3+S2S3+S4  = T'+S1'S2'S3'+S1(S2+S3)+S2S3+S4 |
| N2 | TS1 'S2'S3S4'+TS1'S2S3'S4'  N2 = TS1'S4'(S2'S3 + S2S3') = TS1'S4'(S2 XOR S3) |
| N3 | TS1'S2'S3S4'+TS1S2'S3'S4'  // T S2' S4'(S1 XOR S3) = D2 |

Table 6 Table 1 Outputs in ST State

|  |  |  |
| --- | --- | --- |
| State | Output | Expression |
| ST | L1 | S2 |
| L2 | 0 |
| L3 | S3 |
| L4 | S1 |
| N1 | T'+S4 |
| N2 | TS4' |
| N3 | 1 |

Table 7 Table 1 Outputs in LOCKED State

|  |  |  |
| --- | --- | --- |
| State | Output | Expression |
| LOCKED | L1 | S1 |
| L2 | S2 |
| L3 | S3 |
| L4 | S4 |
| N1 | 1 |
| N2 | 1 |
| N3 | 1 |