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1: ' {$STAMP BS2p}
2: ' {$PBASIC 2.5}
3: ' {$PORT COM1}
4:
5: ' This program is supposed to take band control data from the N3FTI Bandswitch
6: ' and use it to set the appropriate transmit and receive IF signal levels by
7: ' setting programmable attenuators for each band from 50 MHz thru 24 GHz.
8: ' The band-select signal is input as a 4 bit binary signal and the logic is set
9: ' so that the appropriate signals are then sent to the programmable attenuators for
10: ' both the transmit and receive lines.
11:
12: ' The input signal matrix is as follows:
13: ' Band      A      B      C      D
14: ' 50        0      0      0      0
15: ' 144       1      0      0      0
16: ' 222       0      1      0      0
17: ' 432       1      1      0      0
18: ' 903       0      0      1      0
19: ' 1296      1      0      1      0
20: ' 2304      0      1      1      0
21: ' 3456      1      1      1      0
22: ' 5760      0      0      0      1
23: ' 10G       1      0      0      1
24: ' 24G       0      1      0      1
25: ' 47G       1      1      0      1
26: '
27: ' A = LPT pin 2
28: ' B = LPT pin 7
29: ' C = LPT pin 8
30: ' D = LPT pin 9
31: ' Grnd = LPT pin 15
32:
33: ' Declare attenuation level variables for receive
34: RX50 VAR Byte
35: RX144 VAR Byte
36: RX222 VAR Byte
37: RX432 VAR Byte
38: RX903 VAR Byte
39: RX1296 VAR Byte
40: RX2304 VAR Byte
41: RX3G VAR Byte
42: RX5G VAR Byte
43: RX10G VAR Byte
44: RX24G VAR Byte
45:
46: ' Declare attenuation level variables for transmit
47: TX50 VAR Byte
48: TX144 VAR Byte
49: TX222 VAR Byte
50: TX432 VAR Byte
51: TX903 VAR Byte
52: TX1296 VAR Byte
53: TX2304 VAR Byte
54: TX3G VAR Byte
55: TX5G VAR Byte
56: TX10G VAR Byte
57: TX24G VAR Byte
58:
59: ' A Nib is 4 bits
60: ' Declare input frequency variable from N3FTI Device
61: FREQ VAR Nib
62: ' FREQ CAN BE
63: ' 0 50 MHZ
64: ' 1 144 MHZ
65: ' 2 222 MHZ
66: ' 3 432 MHZ
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67: ' 4 903 MHZ
68: ' 5 1296 MHZ
69: ' 6 2304 MHZ
70: ' 7 3G
71: ' 8 5G
72: ' 9 10G
73: ' 10 24G
74:
75: ' Declare RXOUT and TXOUT. These are attenuation levels to be set
76: RXOUT VAR Byte
77: TXOUT VAR Byte
78:
79: ' Initialize receive attenuation level variables for each band
80: RX50 = 00
81: RX144 = 00
82: RX222 = 00
83: RX432 = 16
84: RX903 = 08
85: RX1296 = 0
86: RX2304 = 18
87: RX3G = 7
88: RX5G = 8
89: RX10G = 8
90: RX24G = 2
91:
92: ' Initialize transmit attenuation level variables for each band
93: TX50 = 0
94: TX144 = 17
95: TX222 = 11
96: TX432 = 04
97: TX903 = 13
98: TX1296 = 0
99: TX2304 = 2
100: TX3G = 20
101: TX5G = 0
102: TX10G = 0
103: TX24G = 0
104:
105: ' Declare control bit variables for Rx
106: RCV1 VAR Bit
107: RCV2 VAR Bit
108: RCV4 VAR Bit
109: RCV8 VAR Bit
110: RCV16 VAR Bit
111: RCV32 VAR Bit
112:
113: ' Declare control bit variables for Tx
114: TX1 VAR Bit
115: TX2 VAR Bit
116: TX4 VAR Bit
117: TX8 VAR Bit
118: TX16 VAR Bit
119: TX32 VAR Bit
120:
121: ' Define shorthand reference for input pins
122: A PIN 0
123: B PIN 1
124: C PIN 2
125: D PIN 3
126:
127: ' Set pins A, B, C, D to be input pins
128: INPUT A
129: INPUT B
130: INPUT C
131: INPUT D
132:
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133: 'Set pins 4-15 as output pins
134: OUTPUT 4
135: OUTPUT 5
136: OUTPUT 6
137: OUTPUT 7
138: OUTPUT 8
139: OUTPUT 9
140: OUTPUT 10
141: OUTPUT 11
142: OUTPUT 12
143: OUTPUT 13
144: OUTPUT 14
145: OUTPUT 15
146:
147: ' Main program loop follows
148: DO
149:
150:
151:
152: ' Calculate band from BCD input
153: FREQ = A + (B*2) + (C*4) + (D*8)
154:
155: 'set RXOUT and TXOUT attenuation levels based on BCD input from N3FTI
156: SELECT FREQ
157: CASE = 0
158:   RXOUT = RX50
159:   TXOUT = TX50
160: CASE = 1
161:   RXOUT = RX144
162:   TXOUT = TX144
163: CASE = 2
164:   RXOUT = RX222
165:   TXOUT = TX222
166: CASE = 3
167:   RXOUT = RX432
168:   TXOUT = TX432
169: CASE = 4
170:   RXOUT = RX903
171:   TXOUT = TX903
172: CASE = 5
173:   RXOUT = RX1296
174:   TXOUT = TX1296
175: CASE = 6
176:   RXOUT = RX2304
177:   TXOUT = TX2304
178: CASE = 7
179:   RXOUT = RX3G
180:   TXOUT = TX3G
181: CASE = 8
182:   RXOUT = RX5G
183:   TXOUT = TX5G
184: CASE = 9
185:   RXOUT = RX10G
186:   TXOUT = TX10G
187: CASE = 10
188:   RXOUT = RX24G
189:   TXOUT = TX24G
190: CASE > 10
191:   RXOUT = RX24G
192:   TXOUT = TX24G
193: ENDSELECT
194:
195: ' DETERMINE RCV and TX output pin levels based on values of RXOUT and TXOUT
196: IF (RXOUT >= 32) THEN
197:   RCV32 = 1
198:   RXOUT = RXOUT - 32
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199: ELSE
200: RCV32 = 0
201: ENDFIF
202:
203: IF (RXOUT >= 16) THEN
204:   RCV16 = 1
205:   RXOUT = RXOUT - 16
206: ELSE
207: RCV16 = 0
208: ENDFIF
209:
210: IF (RXOUT >= 8) THEN
211:   RCV8 = 1
212:   RXOUT = RXOUT - 8
213: ELSE
214: RCV8 = 0
215: ENDFIF
216:
217: IF (RXOUT >= 4) THEN
218:   RCV4 = 1
219:   RXOUT=RXOUT - 4
220: ELSE
221: RCV4 = 0
222: ENDFIF
223:
224:   IF (RXOUT >= 2) THEN
225:     RCV2 = 1
226:     RXOUT = RXOUT - 2
227:   ELSE
228: RCV2 = 0
229: ENDFIF
230:
231: RCV1 = RXOUT
232:
233: IF (TXOUT >= 32) THEN
234:   TX32 = 1
235:   TXOUT = TXOUT - 32
236: ELSE
237:   TX32 = 0
238: ENDFIF
239:
240: IF (TXOUT >= 16) THEN
241:   TX16 = 1
242:   TXOUT = TXOUT - 16
243: ELSE
244:   TX16 = 0
245: ENDFIF
246:
247: IF (TXOUT >= 8) THEN
248:   TX8 = 1
249:   TXOUT = TXOUT - 8
250: ELSE
251:   TX8 = 0
252: ENDFIF
253:
254: IF (TXOUT >= 4) THEN
255:   TX4 = 1
256:   TXOUT=TXOUT - 4
257: ELSE
258:   TX4 = 0
259: ENDFIF
260:
261:   IF (TXOUT >= 2) THEN
262:     TX2 = 1
263:     TXOUT = TXOUT - 2
264:   ELSE
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265: TX2 = 0
266: ENDIF
267:
268: TX1 = TXOUT
269:
270: ' Use RCV and TX levels as just determined to set output pin levels
271: OUT4 = TX1
272: OUT5 = TX2
273: OUT6 = TX4
274: OUT7 = TX8
275: OUT8 = TX16
276: OUT9 = TX32
277:
278: OUT10 = RCV1
279: OUT11 = RCV2
280: OUT12 = RCV4
281: OUT13 = RCV8
282: OUT14 = RCV16
283: OUT15 = RCV32
284:
285: ' Go back to beginning of loop and repeat
286: LOOP
287:
288: END
289:
290:
291:
```