

InnoBot MSRDS innoBasic code

Ranging_innoBot_RF.inb (test wireless setup)

```
1
2
3 Peripheral MyServo As ServoRunnerA @ 0
4 Peripheral MySonar1 As SonarA @ 1
5
6 Peripheral myT As RF24G @ 9
7
8
9 Dim unit As Byte
10 Dim dist As Byte
11 Dim TCRT_Right As Byte
12 Dim TCRT_Left As Byte
13
14 Dim TxReady As Byte
15
16 Sub Main()
17     RFTInitial()
18
19     unit = 1
20     Do
21         MySonar1.Ranging()
22         Pause 100
23         MySonar1.GetDistance(unit,dist)
24
25         myT.SendVar(dist)           '傳送資料dist
26         Do
27             Loop Until TxReady = 1 '等待資料傳送完畢
28
29     Loop
30 End Sub
31
32 Sub RFTInitial()
33     myT.EnTxReadyEvent()           '啟動發送完成事件
34     myT.SetMode(0)                 '設定為發送模式
35     myT.SetCh(0)                   '設定頻道為0
36     myT.SetRegCode(0)              '設定註冊碼為0
37     myT.SetRFID(0)                 '設定識別碼為0
38     myT.Config()                  '將設定的模式、頻道、註冊碼、識別碼下載至模組
39 End Sub
40
41 Event myT.TxReadyEvent()          '設定發送完成事件
42     TxReady = 1
43 End Event
```

```

44 Ranging_RFCommander.cs
45 Peripheral myT As RF24G @ 2
46 Peripheral myR As RF24G @ 3
47
48 Dim Data As Byte
49
50 Sub main()
51     Do
52         RFRinital()
53         Debug "Distance: ", Data, CR
54         myR.ClrBuffer()           '清除暫存器資料，確保每次接收到的為最新的資料
55         Pause 100
56     Loop
57 End Sub
58
59 Sub RFRinital()
60     myR.EnRxReadyEvent()         '啟動接收完成事件
61     myR.SetMode(1)              '設定為接收模式
62     myR.SetCh(0)                '設定頻道為0
63     myR.SetRegCode(0)          '設定註冊碼為0
64     myR.SetRFID(0)             '設定識別碼為0
65     myR.Config()               '將設定的模式、頻道、註冊碼、識別碼下載至模組
66 End Sub
67
68 Event myR.RxReadyEvent()
69     myR.GetVar(Data)
70 End Event

```

71 **MSRDS_code_innobot_RF.cs (code for MSRDS)**

```

72 Peripheral MyServo As ServoRunnerA @ 0
73 Peripheral MySonar1 As SonarA @ 1
74 Peripheral MySonar2 As SonarA @ 2
75 Peripheral MySonar3 As SonarA @ 3
76 Peripheral MySonar4 As SonarA @ 4
77 Peripheral MySonar5 As SonarA @ 5
78 Peripheral MySonar6 As SonarA @ 6
79 Peripheral MySonar7 As SonarA @ 7

```

```

80 Peripheral MySonar8 As SonarA @ 8
81 Peripheral MyRF As RF24G @ 9
82
83 Dim ready_flag As Byte
84 Sub SetTX()
85     myRF.SetMode(0) ' 設定模式為發設模式
86     myRF.SetCh(1) ' 設定傳輸頻道為1 (設定為innoBot ID*2+1, 此處innoBot ID=0)
87     myRF.Config() ' 更新設定值
88 End Sub
89
90 Sub SetRX()
91     myRF.SetMode(1) ' 設定模式為接收模式
92     myRF.SetCh(0) ' 設定傳輸頻道為0 (設定為innoBot ID*2, 此處innoBot ID=0)
93     myRF.Config() ' 更新設定值
94 End Sub
95
96 Sub main()
97
98 Dim cmd As Byte
99
100 Dim status As Byte
101 Dim distance As Word
102 Dim channel As Byte
103 Dim position As Word
104 Dim speedL As Word
105 Dim speedR As Word
106
107     SetRx()
108     MyRF.EnRxReadyEvent()
109
110     ready_flag=0
111
112     Mysonar1.SetFloorLevel 2
113     ' Mysonar2.SetFloorLevel 2
114     ' Mysonar3.SetFloorLevel 2
115     ' Mysonar4.SetFloorLevel 2
116     ' Mysonar5.SetFloorLevel 2
117     ' Mysonar6.SetFloorLevel 2
118     ' Mysonar7.SetFloorLevel 2
119     ' Mysonar8.SetFloorLevel 2

```

```

120
121     position=1500
122     speedL=1500
123     speedR=1500
124     Low 19
125
126     Myservo.SetPosAndRun 0,position
127     Myservo.SetPosAndRun 1,speedL
128     Myservo.SetPosAndRun 2,speedR
129
130     Do
131
132         If (ready_flag) Then
133
134             ready_flag=0
135
136         '     Debugin "Please Enter Command: ",cmd,CR
137             MyRF.GetVar(cmd)
138
139             Debug "cmd= ",cmd,CR
140
141             Select Case cmd
142             Case 1
143
144         '         Debugin "Enter Sonar Channel: ",Channel,CR
145             MyRF.GetVar(Channel)
146
147             Select Case Channel
148             Case 1
149                 MySonar1.Ranging()
150             Case 2
151                 MySonar2.Ranging()
152             Case 3
153                 MySonar3.Ranging()
154             Case 4
155                 MySonar4.Ranging()
156             Case 5
157                 MySonar5.Ranging()
158             Case 6
159                 MySonar6.Ranging()

```

```

160         Case 7
161             MySonar7.Ranging()
162         Case 8
163             MySonar8.Ranging()
164         End Select
165
166     Debug "Channel= ",Channel,CR
167
168     Case 2
169
170     '     Debugin "Enter Sonar Channel: ",Channel,CR
171         MyRF.GetVar(Channel)
172
173         Select Case Channel
174         Case 1
175             status=MySonar1.GetDistance(1,distance)
176         Case 2
177             status=MySonar2.GetDistance(1,distance)
178         Case 3
179             status=MySonar3.GetDistance(1,distance)
180         Case 4
181             status=MySonar4.GetDistance(1,distance)
182         Case 5
183             status=MySonar5.GetDistance(1,distance)
184         Case 6
185             status=MySonar6.GetDistance(1,distance)
186         Case 7
187             status=MySonar7.GetDistance(1,distance)
188         Case 8
189             status=MySonar8.GetDistance(1,distance)
190         End Select
191
192         SetTx()
193
194     '     Pause 100
195
196         MyRF.BufferVar(status)
197         MyRF.BufferVar(distance)
198         MyRF.SendBuffer()
199     '     Pause 100

```

```

200         SetRx()
201
202         Debug "status= ",status," Distance= ",distance,CR
203
204     Case 3
205         status=Readport1
206
207         SetTx()
208
209     '
210         Pause 100
211
212         MyRF.BufferVar(status)
213         MyRF.SendBuffer()
214     '
215         Pause 100
216         SetRx()
217
218         Debug "TCRT5000 status=",%BIN status,CR
219
220     Case 4
221     '
222         Debugin "Enter Sonar Position",position,CR
223         MyRF.GetVar(position)
224
225         Myservo.SetPosAndRun 0,position
226
227         Debug "position= ",position,CR
228
229     Case 5
230     '
231         Debugin "Enter Left Wheel Speed",speedL,CR
232         MyRF.GetVar(speedL)
233
234         Myservo.SetPosAndRun 1,speedL
235
236         Debug "speedL= ",speedL,CR
237
238     Case 6
239     '
240         Debugin "Enter Right Wheel Speed",speedR,CR
241         MyRF.GetVar(speedR)
242         Myservo.SetPosAndRun 2,speedR
243
244         Debug "speedR= ",speedR,CR

```

```

240
241     End Select
242 End If
243
244 Loop
245
246
247 End Sub
248
249 Event MyRF.RxReadyEvent()
250     ready_flag=1
251
252 End Event

```

MSRDS_code_RFCommander.cs

```

253
254 Peripheral MyTx As RF24G @ 3
255 Peripheral MyRx As RF24G @ 2
256
257
258
259 Sub main()
260
261 Dim cmd As Byte
262 Dim status As Byte
263 Dim TempCount As Word
264 Dim distance As Word
265 Dim channel As Byte
266 Dim position As Word
267 Dim speedL As Word
268 Dim speedR As Word
269
270 myTx.SetMode(0) ' 設定模式為發送模式
271 myTx.SetCh(0) ' 設定傳輸頻道為0 (設定為innoBot ID*2, 此處innoBot ID=0)
272 myTx.Config() ' 更新設定值
273
274 myRx.SetMode(1) ' 設定模式為接收模式
275 myRx.SetCh(1) ' 設定傳輸頻道為0 (設定為innoBot ID*2+1, 此處innoBot ID=0)
276 myRx.Config() ' 更新設定值

```

```

277
278
279     Do
280
281         Debugin "Please Enter Command: ",cmd,CR
282
283         MyTx.BufferVar(cmd)
284
285         Select Case cmd
286
287             Case 1
288                 Debugin "Enter Sonar Channel: ",Channel,CR
289
290                 MyTx.BufferVar(Channel)
291                 MyTx.SendBuffer()
292
293             Case 2
294                 Debugin "Enter Sonar Channel: ",Channel,CR
295
296                 MyTx.BufferVar(Channel)
297                 MyTx.SendBuffer()
298
299                 For TempCount =1 To 1000
300
301                     status=MyRx.GetStatus()
302
303                     If status=2 Then
304                         MyRx.GetVar(status)
305                         myRx.GetVar(distance)
306                         Goto upload1
307                     End If
308
309                     If ((TempCount=1000) And (status=0)) Then
310                         status=255
311                     End If
312                 Next
313
314     upload1:
315
316         Debug "status= ",status," Distance= ",distance,CR,CR

```



```

317
318     Case 3
319         MyTx.SendBuffer()
320
321         status=Readport1
322
323         For TempCount =1 To 1000
324
325             status=MyRx.GetStatus()
326
327             If status=1 Then
328                 MyRx.GetVar(status)
329                 Goto upload2
330             End If
331
332             If (TempCount=1000 And status=0) Then
333                 status=255
334             End If
335         Next
336
337 upload2:
338
339         Debug "TCRT5000 status=",%BIN status,CR,CR
340
341     Case 4
342         Debugin "Enter Sonar Position",position,CR
343         MyTx.BufferVar(position)
344         MyTx.SendBuffer()
345
346     Case 5
347         Debugin "Enter Left Wheel Speed",speedL,CR
348         MyTx.BufferVar(speedL)
349         MyTx.SendBuffer()
350
351     Case 6
352         Debugin "Enter Right Wheel Speed",speedR,CR
353         MyTx.BufferVar(speedR)
354         MyTx.SendBuffer()
355
356 End Select

```

357

358

359

360 **Loop**

361

362

363 **End Sub**

364