# ĐẠI HỌC QUỐC GIA TP HỒ CHÍ MINH TRƯỜNG ĐẠI HỌC BÁCH KHOA

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# THIẾT KẾ VÀ PHÁT TRIỂN ỨNG DỤNG IOT

BÀI TẬP VỀ NHÀ: COLLECT RSSI

### LÓP L01 --- HK232

NGÀY NỘP: 03/03/2024

Giảng viên hướng dẫn: Thầy Võ Quế Sơn

Sinh viên thực hiện	Mã số sinh viên
Châu Ngọc Tình	2110588

Thành phố Hồ Chí Minh – 2024

### 1. Đề bài

Collect RSSI from neighbor nodes and choose the neigbor with strongest RSSI

### 2. Bài làm

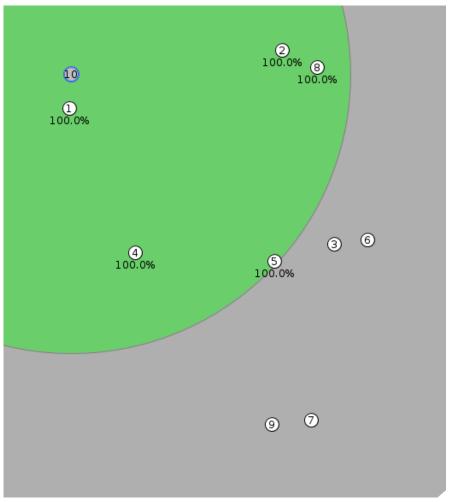
Link project: contiki wsn/project/rime broadcast rssi at develop · Hnit3003/contiki wsn

#### 2.1. Code

1 #include "contiki.h" 2 #include "net/rime/rime.h"
3 #include "random.h" #include "dev/button-sensor.h" #include "dev/leds.h" 8 #include "cc2420.h' 10 #include <stdio.h> #include <string.h> 12 13 #define MOTE NUM 10 /\* Number of Motes in Network \*/ 14 /\* Number of packets sended \*/ 15 static uint16\_t packet\_send\_count = 1; /\* Number of packet receive from all Mote\*/ 16 17 static uint16\_t packet\_receive\_count[MOTE\_NUM] = {0}; 18 19 static signed char rssi\_neigbr[MOTE\_NUM] = {0}; static signed char rssi\_max = -120; 21 static uint8\_t rssi\_max\_mote = MOTE\_NUM + 1; 22 PROCESS(example\_broadcast\_process, "Broadcast example"); AUTOSTART PROCESSES(&example broadcast process); 26 static void 27 28 broadcast\_recv(struct broadcast\_conn \*c, const linkaddr\_t \*from) 29 { packet\_receive\_count[from->u8[0] - 1]++; 30 rssi\_neigbr[from->u8[0] - 1] = cc2420\_last\_rssi; 31 if (cc2420\_last\_rssi > rssi\_max) 32 33 { rssi\_max = rssi\_neigbr[from->u8[0] - 1]; 34 35 rssi\_max\_mote = from->u8[0]; 36 37 printf("broadcast message received from %d.%d [%d times]: '%s' RSSI: %d\n", 38  $from -> u8[0], from -> u8[1], packet\_receive\_count[from -> u8[0] - 1], (char *) packetbuf\_dataptr(), rssi\_neigbr[from -> u8[0] - 1]); (char *) packetbuf\_d$ 39 static const struct broadcast\_callbacks broadcast\_call = {broadcast\_recv}; static struct broadcast conn broadcast; 42 43 PROCESS THREAD(example broadcast process, ev, data) 44 45 static struct etimer et; 46 PROCESS EXITHANDLER(broadcast close(&broadcast);) 47 48 PROCESS\_BEGIN(); 49 50 broadcast\_open(&broadcast, 129, &broadcast\_call); 51 52 53 while(1) { 54 55 /\* Delay 2-4 seconds \*/ 56 etimer\_set(&et, CLOCK\_SECOND \* 4 + random\_rand() % (CLOCK\_SECOND \* 4)); 57 PROCESS\_WAIT\_EVENT\_UNTIL(etimer\_expired(&et)); 58 59 char message send[20]; sprintf(message\_send, "ID:%d packet[%d]", linkaddr\_node\_addr.u8[0], packet\_send\_count++); 61 packetbuf\_copyfrom(message\_send, sizeof(message\_send)); 62 63 broadcast send(&broadcast); printf("broadcast message sent: packet[%d]\n", (packet send count-1)); 64 65 printf("Max RSSI mote: %d : %d\n", rssi\_max\_mote, rssi\_max); 66 67 } 68 69 PROCESS\_END(); 70 71 \*/ 72 73

## 2.2. Kết quả trong mô phỏng bằng tool cooja

## 2.2.1. Giao diện kết quả khi chạy



Time	Mote	Message	
00:00.641	ID:1	Rime started with address 1.0	
00:00.650	ID:1	MAC 01:00:00:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started. Node id is set to 1.	
00:00.659	ID:1	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26	
00:00.661	ID:1	Starting 'Broadcast example'	
00:05.789	ID:1	broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]' RSSI: -87	
00:05.913	ID:1	broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]' RSSI: -20	
00:05.960	ID:1	broadcast message sent: packet[1]	
00:05.962	ID:1	Max RSSI mote: 10 : -20	
00:06.788	ID:1	broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]' RSSI: -77	
00:07.663	ID:1	broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]' RSSI: -86	
00:08.538	ID:1	broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]' RSSI: -58	
00:11.116	ID:1	broadcast message sent: packet[2]	
00:11.118	ID:1	Max RSSI mote: 10 : -20	
00:11.787	ID:1	broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]' RSSI: -20	
00:12.537	ID:1	broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]' RSSI: -87	
00:13.287	ID:1	broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]' RSSI: -77 broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]' RSSI: -58	
00:13.913 00:14.788	ID:1 ID:1		
00:14.788	ID:1	broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]' RSSI: -86 broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]' RSSI: -87	
00:10.911	ID:1	broadcast message sent: packet[3]	
00:17.509	ID:1	Max RSS mote: 10: -20	
00:18.412	ID:1	broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]' RSSI: -20	
00:20.162	ID:1	broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]' RSSI: -77	
00:20.537	ID:1	broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]' RSSI: -86	
00:21.662	ID:1	broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]' RSSI: -87	
00:21.911	ID:1	broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]' RSSI: -58	
00:22.531	ID:1	broadcast message sent: packet[4]	
00:22.533	ID:1	Max RSSI mote: 10 : -20	
00:23.038	ID:1	broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]' RSSI: -20	
00:25.163	ID:1	broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]' RSSI: -86	
00:25.412	ID:1	broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]' RSSI: -77	
00:25.913	ID:1	broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]' RSSI: -87	
00:26.531	ID:1	broadcast message sent: packet[5]	
00:26.533	ID:1	Max RSSI mote: 10 : -20	
00:27.161	ID:1	broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]' RSSI: -58	
ilter: ^ID:(1)\$			

```
Time
                  Mote
                            Message
 00:00 495
                  TD+2
                              Rime started with address 2.0
                              MAC 02:00:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started. Node id is set to 2.
 00:00.504
                  TD: 2
                               nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
 00:00.513
                  ID:2
 00:00.515
                  ID: 2
                              Starting 'Broadcast example' broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
 00:05.767
                  ID:2
                              broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]' RSSI: -7 broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]' RSSI: -7 broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]' RSSI: -73
 00:05.892
                  ID:2
                                                                                                                                        RSSI: -74
 00:06.014
                  ID:2
 00:06.143
                              broadcast message sent: packet[1]
Max RSSI mote: 6 : -73
 00:06.665
                  ID:2
                  ID:2
 00:06.667
                              broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]' broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
 00:07.641
                  ID:2
                                                                                                                                       RSST: -21
                  ID:2
 00:08.267
                                                                                                                                       RSSI: -70
 00:08.516
                               broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
                              broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]' broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
 00:10.391
                  TD: 2
                                                                                                                                       RSST: -73
 00:11.142
                  ID:2
                                                                                                                                      RSSI: -77
 00:11.765
                  ID:2
                              broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
                                                                                                                                          RSSI:
                              broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]' broadcast message sent: packet[2]
                                                                                                                                     RSSI: -74
 00:12.642
                 ID: 2
 00:13.236
                              Max RSSI mote: 8 : -21
broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
 00:13.237
                  TD: 2
                  ID:2
 00:14.017
                                                                                                                                      RSST: -85
                              broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]' broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
                  ID:2
 00:14.766
                                                                                                                                       RSSI: -21
                              broadcast message received from 6.0 [3 times]:
broadcast message received from 3.0 [2 times]:
 00:15.142
                  ID: 2
                                                                                                                                       RSSI: -73
                                                                                                          'ID:3 packet[2]'
 00:16.266
                              broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]' broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
 00:16.892
                  ID:2
                                                                                                                                      RSST: -74
 00:17.640
                  ID:2
                                                                                                                                      RSSI: -77
                              broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]' broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]' broadcast message sent: packet[3]
                  ID:2
                                                                                                                                          RSSI:
                                                                                                                                     RSSI: -73
 00:19.892
                  ID:2
 00:20.103
                  ID:2
 00:20.104
                  ID:2
                              Max RSSI mote: 8 : -21
                              broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
 00:20.518
                  ID:2
                              broadcast message received from 8.0 [3 times]: 'ID:8 packet[3] fibroadcast message received from 4.0 [3 times]: 'ID:4 packet[3]' fibroadcast message received from 1.0 [4 times]: 'ID:1 packet[4]' fibroadcast message received from 10.0 [4 times]: 'ID:10 packet[4]' fibroadcast message received from 3.0 [3 times]: 'ID:3 packet[3]' fibroadcast message received from 3.0 [3 times]: 'ID:3 packet[3]' fibroadcast message received from 3.0 [3 times]: 'ID:3 packet[3]' fibroadcast message received from 3.0 [3 times]: 'ID:3 packet[3]' fibroadcast message received from 3.0 [3 times]: 'ID:3 packet[3]' fibroadcast message received from 3.0 [3 times]: 'ID:3 packet[3]' fibroadcast message received from 3.0 [3 times]: 'ID:3 packet[3]' fibroadcast message received from 3.0 [3 times]: 'ID:4 packet[4]'
 00:21.640
 00:21.892
                  TD: 2
                                                                                                                                       RSST: -85
 00:22.642
                  ID:2
                                                                                                                                      RSSI: -77
 00:23.017
                  ID:2
                                                                                                                                          RSSI:
 00:23.641
                  ID: 2
                               broadcast message sent: packet[4]
                              Max RSSI mote: 8: -21
broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]' RSSI: -21
broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]' RSSI: -74
 00:25.073
                  TD: 2
 00:25.139
                  ID:2
 00:25.891 ID:2
Filter: ^ID:[2]$
 Time
                 Mote
                            Message
 00:01.158 ID:3
                              Rime started with address 3.0
 00:01.167
                  ID:3
                              MAC 03:00:00:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started. Node id is set to 3.
                              nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
 00:01.176
                  ID:3
                              Starting 'Broadcast example'
 00:01.178
                  ID:3
                              broadcast message received from 9.0 [1 times]:
                                                                                                          'ID:9 nacket[1]
 00:05.180
                  TD: 3
                               broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
 00:05.805
                  ID:3
                                                                                                                                       RSSI: -29
 00:06 179
                  TD+3
                                                                                                                                       RSST: -20
 00:06.804
                                                                                                                                       RSST: -70
```

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broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]' broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
              ID:3
                        broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]' RSSI: -64 broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]' RSSI: -63
00:07.179
              ID:3
00:07.679
              ID:3
                        broadcast message sent: packet[1]
00:08.180
              ID:3
00:08.182
              TD: 3
                        Max RSSI mote: 6 : -20
                        broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
                                                                                                          RSST: -70
00:08.554
              ID:3
00:09.679
                        broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
              ID:3
00:10.429
              ID:3
                        broadcast message received from 6.0 [2 times]:
                                                                                    'ID:6 packet[2]
                                                                                                           RSSI: -20
00:12.554
              ID:3
                        broadcast message received from 5.0 [2 times]:
                                                                                    'ID:5 packet[2]
                                                                                                           RSSI:
00:12.805
              TD: 3
                        broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]' broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
                                                                                                           BSST:
                                                                                                                  -64
                                                                                    'ID:2 packet[2]
              ID:3
00:13.303
                                                                                                           RSSI: -70
                        broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]' broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
00:13.930
              ID:3
                                                                                                           RSSI:
00:14.804
              TD:3
                                                                                                           RSST: -63
                        broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
00:15.180
              ID:3
                                                                                                           RSSI: -20
              ID:3
00:15.805
                        broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
                                                                                                          RSSI:
00:16.164
              ID:3
                        broadcast message sent: packet[2]
00:16.166
                        Max RSSI mote: 6 : -20
              ID:3
                        broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
00:16.930
              TD: 3
                                                                                                          RSST: -29
00:18.055
              ID:3
                                                                                                           RSSI: -64
00:19.930
              ID:3
                        broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
                                                                                                           RSSI: -20
                        broadcast message received from 2.0 [3 times]:
                                                                                    'ID:2 packet[3]
00:20.178
              ID:3
                                                                                                           RSSI: -70
                        broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
00:21.678
              ID:3
                                                                                                           RSSI: -29
                        broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]' broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
00:21.931
              ID:3
                                                                                                           BSSI: -70
                                                                                                          RSSI: -64
00:22.805
              ID:3
00:23.508
              ID:3
                        broadcast message sent: packet[3]
00:23.510
              ID:3
                        Max RSSI mote: 6 : -20
                        broadcast message received from 9.0 [4 times]: 'ID:9 packet[5]'
00:24.805
00:25 177
              TD+3
                        broadcast message received from 8.0 [3 times]: 'ID:8 packet[4]'
                                                                                                           RSST: -63
                        broadcast message received from 2.0 [4 times]:
                                                                                    'ID:2 packet[4]
00:25.428
                                                                                                           RSSI: -70
              ID:3
                        broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]' broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]' broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
00:25.804
                                                                                                           RSST:
              TD: 3
                                                                                                                  - 29
00:26.055
              ID: 3
                                                                                                           RSST: -20
00:27.055
Filter: ^ID:[3]$
```

```
Time
                 Mote
                           Message
 00:00 607
                 TD-4
                             Rime started with address 4.0 MAC 04:00:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started. Node id is set to 4.
 00:00.616 ID:4
                             nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
 00:00.625
                 ID:4
 00:00.627
                 ID: 4
                             Starting 'Broadcast example'
                 ID:4
                             broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]
 00:05.131
                             broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]' RSSI: -52 broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]' RSSI: -58 broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]' RSSI: -58
 00:05.754
                 ID:4
 00:05.880
                 ID:4
                                                                                                                                   RSSI: -67
                             broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]' broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]' broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
 00:06.003
 00:06.126
                 ID: 4
                                                                                                                                 RSSI: -80
                 ID:4
 00:06.755
                                                                                                                                 RSSI: -85
                             broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]' broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
 00:07.129
                 ID:4
                                                                                                                                 RSSI: -83
 00:07.753
                 ID:4
                                                                                                                                RSSI: -88
                 ID:4
                             broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
                             broadcast message sent: packet[1]
Max RSSI mote: 5 : -52
 00:08.481
                 TD-4
 00:08.482
                 ID:4
                             broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]' RSSI: -76 broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]' RSSI: -80 broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]' RSSI: -58
 00:09.629
                 ID:4
 00:10.377
                 ID: 4
                 ID:4
                             broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]' broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]' broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]' broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]' broadcast message sent: packet[2]
 00:11.754
                 ID:4
                                                                                                                                    RSSI: -67
                                                                                                                                RSSI: -52
 00:12.628
                 ID:4
 00:12.753
                 ID:4
 00:13.380
                 ID:4
                                                                                                                                RSSI: -85
 00:13.879
                 ID:4
                             Max RSSI mote: 5 : -52
broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]' RSSI: -88
 00:13.881
                 ID:4
 00:14.753
                 ID:4
                             broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]' broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]' broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
                 ID:4
 00:15.879
                 ID: 4
                                                                                                                                 RSSI: -76
 00:16.253
                 ID:4
                             broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]' broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]' broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
 00:16.878
                 ID:4
                                                                                                                                 BSST: -52
 00:17.629
                                                                                                                                 RSSI: -58
                 ID:4
 00:18.003
                             broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]' broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]' broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]' broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
 00:18.505
                 TD: 4
                                                                                                                                  RSSI: -67
 00:19.879
                 ID:4
                                                                                                                                RSSI: -80
 00:20.129
                 ID:4
                                                                                                                                 RSSI: -85
 00:20.507
                 ID: 4
                             broadcast message sent: packet[3]
                             Max RSSI mote: 5: -52
broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]' RSSI: -52
broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]' RSSI: -58
 00:21.701
00:21.752
                 ID:4
                 ID:4
 00:22.629
                ID:4
Filter: ^ID:[4]$
 Time
                Mote
                           Message
 00:00.974 ID:5
                             Rime started with address 5.0
 00:00.983
                 ID:5
                             MAC 05:00:00:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started. Node id is set to 5.
 00:00.992
                             nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
                 ID:5
                             Starting 'Broadcast example' broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]' RSSI: -59
 00:00.994
                 ID:5
 00:05.245
                 TD: 5
 00:05.699
                 ID:5
                             broadcast message sent: packet[1]
                             Max RSSI mote: 9 : -59
broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]
 00:05.701
                 TD:5
 00:05.995
                 ID:5
                             broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]' broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]' broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
 00:06.118
                 ID:5
                                                                                                                                 RSSI: -39
 00:06.747
                 ID:5
                                                                                                                                 RSSI: -74
                 ID:5
 00:07.745
                ID:5
                             broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]
                                                                                                                                 RSST:
                                                                                                                                          - 70
                             broadcast message received from 3.0 [1 times]:
 00:08.246
                                                                                                     'ID:3 packet[1]
                                                                                                                                 RSSI:
                 ID:5
                                                                                                                                          - 29
                             broadcast message received from 4.0 [1 times]:
                                                                                                     ID:4 packet[1]
 00:08.620
                 ID:5
                                                                                                                                 RSSI:
 00:09.621
                 ID:5
                             broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
                                                                                                                                 RSSI: -59
 00:10.369
                 ID:5
                             broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
                                                                                                                                 RSSI:
 00:11.247
                 TD:5
                             broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
                                                                                                                                RSST: -87
 00:12.511
                 ID:5
                             broadcast message sent: packet[2]
                 ID:5
                             Max RSSI mote: 3 : -29
                             broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]' broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
 00:12.871
                 TD: 5
                                                                                                                                 RSST: -59
                                                                                                     'ID:2 packet[2]'
 00:13.369
                 ID:5
                                                                                                                                 RSSI: -74
 00:13.993
                 ID:5
                             broadcast message received from 4.0 [2 times]:
                                                                                                     'ID:4 packet[2]'
                                                                                                                                 RSST -
                                                                                                                                         -52
 00:14.744
                                                                                                     'ID:8 packet[2]
                 ID:5
                             broadcast message received from 8.0 [2 times]:
                                                                                                                                 RSSI: -70
                             broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]' broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]' broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
 00:15.120
                 ID:5
                                                                                                                                 RSSI:
 00:15.871
                 TD: 5
                                                                                                                                 RSST: -59
 00:16.244
                                                                                                                                RSSI: -29
                 ID:5
 00:16.808
                 ID:5
                             broadcast message sent: packet[3]
                             Max RSSI mote: 3: -29
 00:16.810
                 ID:5
                             broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]' broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]' broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
                 ID:5
 00:18.118
                 ID: 5
                                                                                                                                RSSI: -59
 00:19.870
                 ID:5
 00:20.247
                             broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]' broadcast message sent: packet[4]
                 ID:5
                                                                                                                                 RSSI: -74
 00:21.614 ID:5
 00:21.616
                             Max RSSI mote: 3 : -29
                 ID:5
                             broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]' broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
 00:21 868
                 TD:5
                                                                                                                                 RSST: -52
 00:22.618
                 ID:5
                                                                                                                                 RSSI: -87
                             broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]' broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]' broadcast message received from 9.0 [4 times]: 'ID:9 packet[5]'
 00:22.743
                 TD:5
                                                                                                                                 RSSI:
                                                                                                                                         -59
 00:23.619
                 ID:5
                                                                                                                                 RSST: -29
 00:24.744
                 ID:5
```

Filter: ^ID:[5]\$

```
Message
Time
            Mote
00:00 509
             ID:6
                     Rime started with address 6.0 MAC 06:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started. Node id is set to 6.
00:00.519
             ID:6
00:00.528
                      nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
             ID:6
00:00.530
             ID:6
                      Starting 'Broadcast example'
                      broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.155
             ID:6
                     broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]' RSSI: -39 broadcast message sent: packet[1]
00:05.781
             ID:6
00:06.086
             ID:6
                      Max RSSI mote: 5 : -39
00:06.088
             ID:6
                     broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]' broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
00:06.782
             ID:6
                                                                                                RSSI: -73
00:07.157
             ID:6
                                                                                                RSSI: -67
                     broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]' broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
                                                                                                RSSI: -64
00:07.657
             TD: 6
00:08.281
             ID:6
                                                                                                RSSI: -20
00:08.532
             ID:6
                      broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
                                                                                                RSSI:
                     broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]' broadcast message sent: packet[2]
00:09.656
             TD:6
                                                                                               RSST: -73
00:10.313
             ID:6
00:10.314
             ID:6
                      Max RSSI mote: 3 : -20
                      broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
00:12.655
             ID:6
                                                                                                RSSI: -39
                      broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
00:12.780
             ID:6
00:13.281
             TD: 6
                      broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
                                                                                                RSST: -73
                      broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
00:13.905
                                                                                                RSSI: -80
             ID:6
00:14.780
             ID:6
                      broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
00:15.086
             ID:6
                      broadcast message sent: packet[3]
                      Max RSSI mote: 3 : -20
00:15.088
             ID:6
                      broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
00:15.906
             ID:6
                                                                                                RSST: -73
                      broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
00:16.280
             ID:6
                                                                                               RSSI: -20
                     broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]' broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
00:16.906
             ID:6
00:18.030
             ID:6
                                                                                               RSSI: -67
00:19.836
             ID:6
                      broadcast message sent: packet[4]
00:19.838
             TD: 6
                      Max RSSI mote: 3 : -20
                      broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
00:20.156
                                                                                                RSSI: -73
             ID:6
00:20.405
                      broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
             ID:6
                     broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
00:20.531
             TD: 6
                                                                                                RSST: -64
00:21.656
             ID:6
                                                                           'ID:5 packet[4]'
                                                                                                RSSI: -39
00:21.906
             ID:6
                      broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
                                                                                                RSSI:
                                                                                                       -80
                      broadcast message received from 7.0 [4 times]:
00:22.781
             ID:6
                                                                            'ID:7 packet[4]
                                                                                                RSSI:
                                                                                                      - 67
                      broadcast message received from 3.0 [3 times]:
00:23.532
             ID:6
                                                                           'ID:3 packet[3]'
                                                                                                RSSI:
00:24.780
             TD: 6
                     broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
                                                                                                RSST: -73
                     broadcast message received from 8.0 [4 times]:
                                                                           'ID:8 packet[4]
00:25.155
                                                                                                RSSI: -64
             ID:6
00:25.406
             ID:6
                      broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
Filter: ^ID:[6]$
```

```
Time
                  Mote
                             Message
 00:00.660
                   ID:7
                               Rime started with address 7.0
                              MAC 07:00:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started. Node id is set to 7. nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
 00:00.670
                  ID: 7
 00:00.679
                  ID:7
                   ID:7
                              Starting 'Broadcast example' broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
 00:00.681
                  TD: 7
 00:05.182
                              broadcast message received from 5.0 [1 times]: ID:5 packet[1] RSSI: -59 broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]' RSSI: -67
 00:05.808
                  ID:7
 00:06.182
                   TD:7
                  ID:7
 00:07.089
                               broadcast message sent: packet[1]
 00:07.091
                   ID:7
                               Max RSSI mote: 9 : -22
                              broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
 00:08.309
                  ID: 7
                                                                                                                                RSSI: -64
 00:08.557
                   ID:7
                                                                                                                                 RSSI: -83
                              broadcast message received from 9.0 [2 times]: 'ID:0 packet[2]' broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]' broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
 00:09.681
                   ID:7
                                                                                                                                 RSST: -22
                   ID:7
                                                                                                                                 RSSI:
 00:10.432
                                                                                                                                          -67
 00:12.557
                              broadcast message sent: packet[2]
Max RSSI mote: 9 : -22
 00:12.729
                   ID:7
 00:12.731
                   ID:7
                              broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]' broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
 00:13.933
                   TD: 7
                                                                                                                                 RSST: -83
                                                                                                     'ID:6 packet[3]'
                  ID:7
                                                                                                                                 RSSI: -67
 00:15.180
                              broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]' broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]' broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
 00:16.307
                   TD: 7
                                                                                                                                 RSST: -64
 00:16.933
                   ID:7
 00:17.979
00:17.981
                   ID:7
                               broadcast message sent: packet[3]
                   ID:7
                               Max RSSI mote: 9 : -22
                              broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]' RSSI: -67 broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]' RSSI: -59 broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]' RSSI: -83
 00:19.930
 00:21.681
                  TD: 7
                  ID:7
 00:21.931
 00:22.675
                   ID:7
                               broadcast message sent: packet[4]
                  ID:7
                               Max RSSI mote: 9 : -22
 00:22.677
                               broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
 00:23.556
                              broadcast message received from 9.0 [4 times]: 'ID:9 packet[5]' broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
 00:24.807
                   ID: 7
                                                                                                                                 RSSI: -22
                   ID:7
                                                                                                                                 RSSI: -59
 00:25.806
 00:26.058
                   ID:7
                               broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
                  ID:7
 00:26.909
                              broadcast message sent: packet[5]
Max RSSI mote: 9 : -22
                  ID:7
 00:26.911
 00:27.183
                  ID:7
                              broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]' RSSI: -83
Filter: ^ID:[7]$
```

#### 2.2.2. Dữ liêu được in ra từ cửa sổ Mote ouput

```
00:00.331
                   ID:8
                          Rime started with address 8.0
                          MAC 08:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
     00:00.341
                   ID:8
Node id is set to 8.
     00:00.350
                   ID:8
                          nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
     00:00.352
                   ID:8
                          Starting 'Broadcast example'
     00:00.495
                   ID:2
                          Rime started with address 2.0
     00:00.504
                          MAC 02:00:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started.
                   ID:2
Node id is set to 2.
     00:00.509
                   ID:6
                          Rime started with address 6.0
     00:00.513
                   ID:2 nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
     00:00.515
                   ID:2
                         Starting 'Broadcast example'
     00:00.519
                          MAC 06:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
                   ID:6
Node id is set to 6.
                          nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
     00:00.528
                   ID:6
     00:00.530
                   ID:6
                          Starting 'Broadcast example'
     00:00.607
                          Rime started with address 4.0
                   ID:4
     00:00.616
                   ID:4
                          MAC 04:00:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started.
Node id is set to 4.
                          nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
     00:00.625
                   ID:4
     00:00.627
                   ID:4
                          Starting 'Broadcast example'
     00:00.641
                   ID:1
                          Rime started with address 1.0
     00:00.650
                   ID:1
                          MAC 01:00:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started.
Node id is set to 1.
                          nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
     00:00.659
                   ID:1
     00:00.660
                          Rime started with address 7.0
                   ID:7
     00:00.661
                   ID:1
                          Starting 'Broadcast example'
     00:00.670
                   ID:7
                          MAC 07:00:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started.
Node id is set to 7.
     00:00.679
                          nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
                   ID:7
     00:00.681
                          Starting 'Broadcast example'
                   ID:7
     00:00.815
                   ID:10 Rime started with address 10.0
     00:00.825
                   ID:10 MAC 0a:00:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started.
Node id is set to 10.
     00:00.834
                   ID:10 nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
     00:00.836
                   ID:10 Starting 'Broadcast example'
     00:00.967
                   ID:9 Rime started with address 9.0
```

ID:5 Rime started with address 5.0

00:00.974

```
00:00.976
                   ID:9
                         MAC 09:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
Node id is set to 9.
     00:00.983
                   ID:5
                          MAC 05:00:00:00:00:00:00:00 Contiki-3.x-3345-q32b5b17f6 started.
Node id is set to 5.
     00:00.986
                   ID:9
                          nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
     00:00.988
                   ID:9
                          Starting 'Broadcast example'
     00:00.992
                          nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
                   ID:5
     00:00.994
                   ID:5
                          Starting 'Broadcast example'
     00:01.158
                   ID:3
                          Rime started with address 3.0
     00:01.167
                         MAC 03:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
                   ID:3
Node id is set to 3.
     00:01.176
                          nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
                   ID:3
     00:01.178
                   ID:3
                          Starting 'Broadcast example'
     00:05.099
                   ID:9
                          broadcast message sent: packet[1]
     00:05.101
                   ID:9
                          Max RSSI mote: 11 : -120
     00:05.131
                   ID:4
                         broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
RSSI: -76
     00:05.155
                   ID:6
                          broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
RSSI: -73
    00:05.180
                   ID:3
                          broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
RSSI: -68
     00:05.182
                          broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
                   ID:7
RSSI: -22
     00:05.245
                   ID:5
                          broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
RSSI: -59
     00:05.699
                   ID:5
                          broadcast message sent: packet[1]
     00:05.701
                         Max RSSI mote: 9 : -59
                   ID:5
     00:05.726
                   ID:8
                          broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
RSSI: -70
     00:05.740
                   ID:9
                          broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
RSSI: -59
     00:05.754
                   ID:4
                          broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
RSSI: -52
     00:05.767
                   ID:2
                          broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
RSSI: -74
    00:05.781
                          broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
                   ID:6
RSSI: -39
     00:05.789
                   ID:1
                          broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
RSSI: -87
                   ID:10 broadcast message sent: packet[1]
     00:05.798
```

```
00:05.800
                   ID:10 Max RSSI mote: 11 : -120
    00:05.805
                         broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
RSSI: -29
     00:05.808
                   ID:7
                         broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
RSSI: -59
     00:05.853
                         broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
                   ID:8
RSSI: -84
                         broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
    00:05.880
                   ID:4
RSSI: -67
    00:05.892
                   ID:2
                         broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
RSSI: -74
                         broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
    00:05.913
                   ID:1
RSSI: -20
    00:05.960
                         broadcast message sent: packet[1]
                   ID:1
    00:05.962
                   ID:1
                         Max RSSI mote: 10 : -20
    00:05.995
                         broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
                   ID:5
RSSI: -87
                         broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
    00:06.003
                   ID:4
RSSI: -58
                   ID:2
     00:06.014
                         broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
RSSI: -77
     00:06.086
                   ID:6
                         broadcast message sent: packet[1]
    00:06.088
                   ID:6
                         Max RSSI mote: 5 : -39
    00:06.088
                   ID:10 broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
RSSI: -20
    00:06.113
                   ID:9
                         broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
RSSI: -73
                         broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
     00:06.118
                   ID:5
RSSI: -39
    00:06.126
                         broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
                   ID:4
RSSI: -80
                         broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
    00:06.143
                   ID:2
RSSI: -73
     00:06.179
                         broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
                   ID:3
RSSI: -20
                   ID:7
    00:06.182
                         broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
RSSI: -67
     00:06.228
                         broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
                   ID:8
RSSI: -64
    00:06.665
                   ID:2
                         broadcast message sent: packet[1]
    00:06.667
                   ID:2
                         Max RSSI mote: 6 : -73
```

```
00:06.711
                   ID:10 broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
RSSI: -74
                         broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
    00:06.728
                   ID:8
RSSI: -21
     00:06.747
                   ID:5
                         broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
RSSI: -74
    00:06.755
                         broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
                   ID:4
RSSI: -85
     00:06.782
                   ID:6
                         broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
RSSI: -73
     00:06.788
                         broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
                   ID:1
RSSI: -77
                         broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
    00:06.804
                   ID:3
RSSI: -70
    00:07.089
                   ID:7
                         broadcast message sent: packet[1]
    00:07.091
                         Max RSSI mote: 9 : -22
                   ID:7
    00:07.113
                   ID:9
                         broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
RSSI: -22
     00:07.121
                   ID:5
                         broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
RSSI: -59
     00:07.129
                         broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
                   ID:4
RSSI: -83
    00:07.157
                         broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
                   ID:6
RSSI: -67
    00:07.179
                   ID:3
                         broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
RSSI: -64
     00:07.611
                   ID:8
                         broadcast message sent: packet[1]
    00:07.613
                   ID:8
                         Max RSSI mote: 2 : -21
                         broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
    00:07.641
                   ID:2
RSSI: -21
                         broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
    00:07.657
                   ID:6
RSSI: -64
     00:07.663
                         broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
                   ID:1
RSSI: -86
    00:07.679
                   ID:3
                         broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
RSSI: -63
                   ID:10 broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
     00:07.712
RSSI: -84
    00:07.745
                         broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
                   ID:5
RSSI: -70
    00:07.753
                   ID:4
                         broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
RSSI: -88
```

```
00:08.180
                   ID:3
                         broadcast message sent: packet[1]
    00:08.182
                   ID:3
                         Max RSSI mote: 6 : -20
    00:08.229
                   ID:8
                         broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
RSSI: -63
     00:08.240
                         broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
                   ID:9
RSSI: -68
     00:08.246
                   ID:5
                         broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
RSSI: -29
                         broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
    00:08.254
                   ID:4
RSSI: -70
     00:08.267
                   ID:2
                         broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
RSSI: -70
                         broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
    00:08.281
                   ID:6
RSSI: -20
    00:08.309
                         broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
                   ID:7
RSSI: -64
    00:08.481
                   ID:4
                         broadcast message sent: packet[1]
    00:08.482
                   ID:4
                         Max RSSI mote: 5 : -52
    00:08.516
                   ID:2
                         broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
RSSI: -85
     00:08.532
                         broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
                   ID:6
RSSI: -80
     00:08.538
                   ID:1
                         broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
RSSI: -58
                         broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
    00:08.554
                   ID:3
RSSI: -70
     00:08.557
                   ID:7
                         broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
RSSI: -83
                   ID:10 broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
    00:08.587
RSSI: -67
    00:08.603
                   ID:8
                         broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
RSSI: -88
     00:08.614
                         broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
                   ID:9
RSSI: -76
                         broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
    00:08.620
                   ID:5
RSSI: -52
    00:09.567
                   ID:9
                         broadcast message sent: packet[2]
     00:09.569
                   ID:9
                         Max RSSI mote: 7 : -22
     00:09.621
                         broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
                   ID:5
RSSI: -59
```

```
00:09.629
                   ID:4
                         broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
RSSI: -76
    00:09.656
                         broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
                   ID:6
RSSI: -73
     00:09.679
                   ID:3
                         broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
RSSI: -68
    00:09.681
                         broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
                   ID:7
RSSI: -22
    00:10.313
                   ID:6
                         broadcast message sent: packet[2]
    00:10.314
                   ID:6
                         Max RSSI mote: 3 : -20
    00:10.353
                   ID:8
                         broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
RSSI: -64
                         broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
    00:10.363
                   ID:9
RSSI: -73
    00:10.369
                   ID:5
                         broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
RSSI: -39
                         broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
     00:10.377
                   ID:4
RSSI: -80
    00:10.391
                   ID:2
                         broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
RSSI: -73
     00:10.429
                         broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
                   ID:3
RSSI: -20
    00:10.432
                         broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
                   ID:7
RSSI: -67
    00:11.116
                   ID:1
                         broadcast message sent: packet[2]
    00:11.118
                   ID:1
                         Max RSSI mote: 10 : -20
    00:11.142
                   ID:2
                         broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
RSSI: -77
                   ID:10 broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
    00:11.211
RSSI: -20
    00:11.228
                   ID:8
                         broadcast message received from 1.0 [1 times]: 'ID:1 packet[2]'
RSSI: -86
     00:11.247
                         broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
                   ID:5
RSSI: -87
    00:11.255
                         broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
                   ID:4
RSSI: -58
    00:11.681
                   ID:10 broadcast message sent: packet[2]
     00:11.683
                   ID:10 Max RSSI mote: 1 : -20
                   ID:8 broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
     00:11.727
RSSI: -84
```

```
00:11.754
                   ID:4
                         broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
RSSI: -67
     00:11.765
                          broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
                   ID:2
RSSI: -74
     00:11.787
                   ID:1
                         broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
RSSI: -20
    00:12.511
                         broadcast message sent: packet[2]
                   ID:5
                         Max RSSI mote: 3 : -29
    00:12.513
                   ID:5
                         broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
    00:12.537
                   ID:1
RSSI: -87
     00:12.554
                   ID:3
                         broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
RSSI: -29
                         broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
    00:12.557
                   ID:7
RSSI: -59
    00:12.603
                   ID:8
                         broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
RSSI: -70
                         broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
     00:12.614
                   ID:9
RSSI: -59
    00:12.628
                   ID:4
                          broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
RSSI: -52
     00:12.642
                         broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
                   ID:2
RSSI: -74
    00:12.655
                         broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
                   ID:6
RSSI: -39
    00:12.729
                   ID:7
                         broadcast message sent: packet[2]
    00:12.731
                   ID:7
                         Max RSSI mote: 9 : -22
    00:12.753
                   ID:4
                         broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
RSSI: -83
                         broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
    00:12.780
                   ID:6
RSSI: -67
    00:12.805
                   ID:3
                         broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
RSSI: -64
     00:12.863
                         broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
                   ID:9
RSSI: -22
                         broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
    00:12.871
                   ID:5
RSSI: -59
    00:13.236
                   ID:2
                         broadcast message sent: packet[2]
     00:13.237
                   ID:2
                         Max RSSI mote: 8 : -21
     00:13.281
                         broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
                   ID:6
RSSI: -73
```

```
00:13.287
                   ID:1 broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
RSSI: -77
                         broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
    00:13.303
                   ID:3
RSSI: -70
    00:13.336
                   ID:10 broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
RSSI: -74
    00:13.353
                         broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
                   ID:8
RSSI: -21
     00:13.369
                   ID:5
                         broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
RSSI: -74
                         broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
     00:13.380
                   ID:4
RSSI: -85
    00:13.879
                         broadcast message sent: packet[2]
                   ID:4
    00:13.881
                   ID:4
                         Max RSSI mote: 5 : -52
    00:13.905
                         broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
                   ID:6
RSSI: -80
                         broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
     00:13.913
                   ID:1
RSSI: -58
    00:13.930
                   ID:3
                         broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
RSSI: -70
                         broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
     00:13.933
                   ID:7
RSSI: -83
    00:13.963
                   ID:10 broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
RSSI: -67
    00:13.979
                   ID:8
                         broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
RSSI: -88
                         broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
    00:13.987
                   ID:9
RSSI: -76
                         broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
    00:13.993
                   ID:5
RSSI: -52
    00:14.017
                         broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
                   ID:2
RSSI: -85
    00:14.666
                         broadcast message sent: packet[2]
                   ID:8
    00:14.668
                         Max RSSI mote: 2 : -21
                   ID:8
                   ID:10 broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
    00:14.711
RSSI: -84
     00:14.744
                         broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
                   ID:5
RSSI: -70
    00:14.753
                   ID:4
                         broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
RSSI: -88
    00:14.766
                   ID:2
                         broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
RSSI: -21
```

```
00:14.780
                   ID:6
                         broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
RSSI: -64
     00:14.788
                         broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
                   ID:1
RSSI: -86
     00:14.804
                   ID:3
                         broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
RSSI: -63
    00:15.086
                         broadcast message sent: packet[3]
                   ID:6
    00:15.088
                         Max RSSI mote: 3 : -20
                   ID:6
                         broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
    00:15.115
                   ID:9
RSSI: -73
     00:15.120
                   ID:5
                         broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
RSSI: -39
                         broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
    00:15.129
                   ID:4
RSSI: -80
    00:15.142
                   ID:2
                         broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
RSSI: -73
                         broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
     00:15.180
                   ID:7
RSSI: -67
     00:15.180
                   ID:3
                         broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
RSSI: -20
     00:15.227
                         broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
                   ID:8
RSSI: -64
    00:15.770
                   ID:9
                         broadcast message sent: packet[3]
    00:15.772
                   ID:9
                         Max RSSI mote: 7 : -22
                         broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
    00:15.805
                   ID:3
RSSI: -68
     00:15.808
                   ID:7
                         broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
RSSI: -22
                         broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
    00:15.871
                   ID:5
RSSI: -59
    00:15.879
                   ID:4
                         broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
RSSI: -76
     00:15.906
                         broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
                   ID:6
RSSI: -73
    00:16.164
                   ID:3
                         broadcast message sent: packet[2]
    00:16.166
                   ID:3
                         Max RSSI mote: 6 : -20
                         broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
    00:16.228
                   ID:8
RSSI: -63
     00:16.236
                         broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
                   ID:9
RSSI: -68
```

```
00:16.244
                   ID:5
                         broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
RSSI: -29
                         broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
    00:16.253
                   ID:4
RSSI: -70
     00:16.266
                   ID:2
                         broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
RSSI: -70
    00:16.280
                         broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
                   ID:6
RSSI: -20
     00:16.307
                   ID:7
                         broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
RSSI: -64
     00:16.808
                   ID:5
                         broadcast message sent: packet[3]
    00:16.810
                   ID:5
                         Max RSSI mote: 3 : -29
    00:16.854
                         broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
                   ID:8
RSSI: -70
    00:16.864
                   ID:9
                         broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
RSSI: -59
                         broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
     00:16.878
                   ID:4
RSSI: -52
    00:16.892
                   ID:2
                         broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
RSSI: -74
                         broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
     00:16.906
                   ID:6
RSSI: -39
    00:16.911
                         broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
                   ID:1
RSSI: -87
    00:16.930
                   ID:3
                         broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
RSSI: -29
     00:16.933
                         broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
                   ID:7
RSSI: -59
    00:17.507
                   ID:1
                         broadcast message sent: packet[3]
     00:17.509
                         Max RSSI mote: 10 : -20
    00:17.588
                   ID:10 broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
RSSI: -20
     00:17.621
                         broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
                   ID:5
RSSI: -87
                         broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
    00:17.629
                   ID:4
RSSI: -58
     00:17.640
                         broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
                   ID:2
RSSI: -77
    00:17.979
                   ID:7
                         broadcast message sent: packet[3]
    00:17.981
                   ID:7
                         Max RSSI mote: 9 : -22
```

```
00:18.003
                   ID:4
                         broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
RSSI: -83
     00:18.030
                          broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
                   ID:6
RSSI: -67
     00:18.055
                   ID:3
                         broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
RSSI: -64
    00:18.115
                         broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
                   ID:9
RSSI: -22
     00:18.118
                   ID:5
                         broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
RSSI: -59
     00:18.361
                   ID:10 broadcast message sent: packet[3]
    00:18.362
                   ID:10 Max RSSI mote: 1 : -20
    00:18.392
                         broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
                   ID:2
RSSI: -74
    00:18.412
                         broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
                   ID:1
RSSI: -20
                         broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
     00:18.477
                   ID:8
RSSI: -84
     00:18.505
                   ID:4
                         broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
RSSI: -67
     00:19.836
                   ID:6
                         broadcast message sent: packet[4]
     00:19.838
                   ID:6
                         Max RSSI mote: 3 : -20
     00:19.865
                   ID:9
                         broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
RSSI: -73
                         broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
    00:19.870
                   ID:5
RSSI: -39
     00:19.879
                   ID:4
                         broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
RSSI: -80
                         broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
    00:19.892
                   ID:2
RSSI: -73
    00:19.930
                   ID:7
                         broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
RSSI: -67
     00:19.930
                         broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
                   ID:3
RSSI: -20
    00:19.977
                         broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
                   ID:8
RSSI: -64
     00:20.103
                   ID:2
                         broadcast message sent: packet[3]
     00:20.104
                   ID:2
                         Max RSSI mote: 8 : -21
     00:20.129
                         broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
                   ID:4
RSSI: -85
```

```
00:20.156
                   ID:6 broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
RSSI: -73
                         broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
    00:20.162
                   ID:1
RSSI: -77
     00:20.178
                   ID:3
                         broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
RSSI: -70
    00:20.211
                   ID:10 broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
RSSI: -74
     00:20.227
                   ID:8
                         broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
RSSI: -21
     00:20.247
                         broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
                   ID:5
RSSI: -74
    00:20.357
                   ID:9
                         broadcast message sent: packet[4]
     00:20.359
                   ID:9
                         Max RSSI mote: 7 : -22
    00:20.392
                   ID:8
                         broadcast message sent: packet[3]
    00:20.394
                   ID:8
                         Max RSSI mote: 2 : -21
    00:20.405
                   ID:6
                         broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
RSSI: -73
    00:20.507
                   ID:4
                         broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
RSSI: -88
                         broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
    00:20.518
                   ID:2
RSSI: -21
     00:20.531
                   ID:6
                         broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
RSSI: -64
    00:20.537
                   ID:1
                         broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
RSSI: -86
    00:21.614
                   ID:5
                         broadcast message sent: packet[4]
    00:21.616
                   ID:5
                         Max RSSI mote: 3 : -29
    00:21.640
                         broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
                   ID:2
RSSI: -74
                         broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
    00:21.656
                   ID:6
RSSI: -39
    00:21.662
                   ID:1
                         broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
RSSI: -87
    00:21.678
                   ID:3
                         broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
RSSI: -29
     00:21.681
                   ID:7
                         broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
RSSI: -59
     00:21.699
                   ID:4
                         broadcast message sent: packet[3]
     00:21.701
                   ID:4
                         Max RSSI mote: 5 : -52
```

```
00:21.728
                   ID:8
                         broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
RSSI: -70
                         broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
     00:21.738
                   ID:9
RSSI: -59
     00:21.752
                   ID:4
                         broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
RSSI: -52
    00:21.854
                         broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
                   ID:8
RSSI: -88
     00:21.862
                   ID:9
                         broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
RSSI: -76
     00:21.868
                         broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
                   ID:5
RSSI: -52
                         broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
    00:21.892
                   ID:2
RSSI: -85
                         broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
     00:21.906
                   ID:6
RSSI: -80
     00:21.911
                         broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
                   ID:1
RSSI: -58
    00:21.931
                         broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
                   ID:7
RSSI: -83
    00:21.931
                   ID:3
                         broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
RSSI: -70
     00:21.961
                   ID:10 broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
RSSI: -67
     00:22.531
                   ID:1
                         broadcast message sent: packet[4]
    00:22.533
                         Max RSSI mote: 10 : -20
                   ID:1
    00:22.587
                   ID:10 broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
RSSI: -20
                         broadcast message received from 1.0 [2 times]: 'ID:1 packet[4]'
    00:22.604
                   ID:8
RSSI: -86
                         broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
     00:22.618
                   ID:5
RSSI: -87
     00:22.629
                         broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
                   ID:4
RSSI: -58
                         broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
    00:22.642
                   ID:2
RSSI: -77
     00:22.675
                   ID:7
                         broadcast message sent: packet[4]
    00:22.677
                         Max RSSI mote: 9 : -22
                   ID:7
    00:22.737
                         broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
                   ID:9
RSSI: -22
    00:22.743
                   ID:5
                         broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
```

RSSI: -59

```
00:22.754
                   ID:4
                         broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
RSSI: -83
     00:22.781
                         broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
                   ID:6
RSSI: -67
     00:22.805
                   ID:3
                         broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
RSSI: -64
    00:22.892
                   ID:10 broadcast message sent: packet[4]
    00:22.894
                   ID:10 Max RSSI mote: 1 : -20
     00:22.978
                         broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
                   ID:8
RSSI: -84
     00:23.003
                   ID:4
                         broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
RSSI: -67
    00:23.017
                         broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
                   ID:2
RSSI: -74
    00:23.038
                         broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
                   ID:1
RSSI: -20
     00:23.508
                   ID:3
                         broadcast message sent: packet[3]
    00:23.510
                   ID:3
                         Max RSSI mote: 6 : -20
    00:23.532
                   ID:6
                         broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
RSSI: -20
     00:23.556
                         broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
                   ID:7
RSSI: -64
     00:23.603
                   ID:8
                         broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
RSSI: -63
    00:23.614
                   ID:9
                         broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
RSSI: -68
     00:23.619
                   ID:5
                         broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
RSSI: -29
                         broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
    00:23.628
                   ID:4
RSSI: -70
    00:23.641
                   ID:2
                         broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
RSSI: -70
     00:24.669
                         broadcast message sent: packet[5]
                   ID:9
    00:24.670
                         Max RSSI mote: 7 : -22
                   ID:9
    00:24.744
                   ID:5
                         broadcast message received from 9.0 [4 times]: 'ID:9 packet[5]'
RSSI: -59
    00:24.753
                   ID:4
                         broadcast message received from 9.0 [4 times]: 'ID:9 packet[5]'
RSSI: -76
     00:24.780
                   ID:6
                         broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
RSSI: -73
```

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00:24.805
                   ID:3
                         broadcast message received from 9.0 [4 times]: 'ID:9 packet[5]'
RSSI: -68
     00:24.807
                         broadcast message received from 9.0 [4 times]: 'ID:9 packet[5]'
                   ID:7
RSSI: -22
     00:25.033
                   ID:8
                         broadcast message sent: packet[4]
     00:25.035
                         Max RSSI mote: 2 : -21
                   ID:8
    00:25.071
                   ID:2
                         broadcast message sent: packet[4]
     00:25.073
                   TD:2
                         Max RSSI mote: 8 : -21
    00:25.086
                   ID:10 broadcast message received from 8.0 [3 times]: 'ID:8 packet[4]'
RSSI: -84
     00:25.120
                         broadcast message received from 8.0 [3 times]: 'ID:8 packet[4]'
                   ID:5
RSSI: -70
                         broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
     00:25.128
                   ID:4
RSSI: -88
    00:25.139
                   ID:2
                         broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
RSSI: -21
                         broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
     00:25.155
                   ID:6
RSSI: -64
    00:25.163
                   ID:1
                         broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
RSSI: -86
    00:25.177
                         broadcast message received from 8.0 [3 times]: 'ID:8 packet[4]'
                   ID:3
RSSI: -63
     00:25.406
                   ID:6
                         broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
RSSI: -73
                         broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
    00:25.412
                   ID:1
RSSI: -77
     00:25.428
                   ID:3
                         broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
RSSI: -70
                   ID:10 broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
    00:25.461
RSSI: -74
    00:25.478
                   ID:8
                         broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
RSSI: -21
     00:25.497
                         broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
                   ID:5
RSSI: -74
                         broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
    00:25.505
                   ID:4
RSSI: -85
    00:25.769
                   ID:5
                         broadcast message sent: packet[5]
     00:25.771
                   ID:5
                         Max RSSI mote: 3 : -29
     00:25.804
                         broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
                   ID:3
RSSI: -29
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00:25.806
                   ID:7
                         broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
RSSI: -59
    00:25.853
                         broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
                   ID:8
RSSI: -70
     00:25.861
                   ID:9
                         broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
RSSI: -59
    00:25.878
                         broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
                   ID:4
RSSI: -52
     00:25.891
                   ID:2
                         broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
RSSI: -74
     00:25.905
                         broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
                   ID:6
RSSI: -39
    00:25.913
                         broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
                   ID:1
RSSI: -87
     00:26.031
                   ID:6
                         broadcast message sent: packet[5]
    00:26.033
                   ID:6
                         Max RSSI mote: 3 : -20
    00:26.055
                         broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
                   ID:3
RSSI: -20
    00:26.058
                   ID:7
                         broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
RSSI: -67
     00:26.104
                         broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
                   ID:8
RSSI: -64
    00:26.112
                         broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
                   ID:9
RSSI: -73
    00:26.118
                   ID:5
                         broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
RSSI: -39
     00:26.126
                         broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
                   ID:4
RSSI: -80
                         broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
     00:26.142
                   ID:2
RSSI: -73
     00:26.531
                   ID:1
                         broadcast message sent: packet[5]
    00:26.533
                   ID:1
                         Max RSSI mote: 10 : -20
     00:26.559
                         broadcast message sent: packet[4]
                   ID:4
     00:26.560
                         Max RSSI mote: 5 : -52
                   ID:4
    00:26.587
                   ID:10 broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
RSSI: -20
                         broadcast message received from 1.0 [3 times]: 'ID:1 packet[5]'
    00:26.604
                   ID:8
RSSI: -86
     00:26.618
                         broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
                   ID:5
RSSI: -87
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00:26.629
                   ID:4
                         broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
RSSI: -58
    00:26.642
                         broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
                   ID:2
RSSI: -77
    00:26.909
                   ID:7
                         broadcast message sent: packet[5]
    00:26.911
                   ID:7
                         Max RSSI mote: 9 : -22
    00:26.990
                   ID:9
                         broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
RSSI: -22
    00:26.994
                         broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
                   ID:5
RSSI: -59
                         broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
     00:27.004
                   ID:4
RSSI: -83
                         broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
    00:27.028
                   ID:6
RSSI: -67
    00:27.055
                   ID:3
                         broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
RSSI: -64
    00:27.161
                         broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
                   ID:1
RSSI: -58
    00:27.180
                   ID:3
                         broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
RSSI: -70
                         broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
    00:27.183
                   ID:7
RSSI: -83
    00:27.213
                   ID:10 broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
RSSI: -67
    00:27.227
                   ID:8
                         broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
RSSI: -88
    00:27.238
                         broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
                   ID:9
RSSI: -76
                         broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
    00:27.246
                   ID:5
RSSI: -52
                         broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
    00:27.265
                   ID:2
RSSI: -85
     00:27.282
                   ID:6
                         broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
RSSI: -80
```