

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 010000.
```

```
> In MessageAnalyzer/validateAndSplitMessage (line 110)
```

```
In MessageAnalyzer/analyzeMessage (line 71)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
```

```
Warning: Error no ack: received CRC 101011110001010000110110 and CRC remainder 0010001000110000010110110
```

```
> In MessageAnalyzer/analyzeMessage (line 85)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

```
struct with fields:
```

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
      SV_ID: '000001'
    message_ID: '0010'
  message_body: '010010110001100110011111111000'
      CRC: '101011110001010000110110'
      ACKed: 0
    isACKmessage: 1
  estimatedDopplerStart: 98.5051
  estimatedDopplerEnd: 112.0940
    estimatedDelay: 0.0282
    estimatedPhase: 3.3538
```

```
ans =
```

```
"Results saved in MM_test_5.65_204.4_f1_d1000_s10_c3.json"
```

```
Elapsed time is 16.715440 seconds.
```

```
.
```

```
ans =
```

```
"Generation test signal completed."
```

```
Elapsed time is 0.967915 seconds.
```

```
ans =
```

```
"Acquisition search 10.0% completed."
```

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0062  
    idStartTime: 281650  
    idDopplerShift: 53  
              mean: 3.7590e-09  
    meanSquare: 1.8990e-09  
              phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 010000.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
Warning: Error no ack: received CRC 1010111110001010000110110 and CRC remainder 01001011111100011011001110
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
        SV_ID: '000001'
    message_ID: '0010'
  message_body: '010010110001100110011111110000'
        CRC: '101011110001010000110110'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 98.5051
estimatedDopplerEnd: 112.0940
    estimatedDelay: 0.0282
    estimatedPhase: 3.3538
```

ans =

"Results saved in MM\_test\_5.98\_204.4\_f1\_d1000\_sl0\_c3.json"

Elapsed time is 16.731704 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 1.067449 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

```
"Acquisition search 50.0% completed."
```

```
ans =
```

```
"Acquisition search 60.0% completed."
```

```
ans =
```

```
"Acquisition search 70.0% completed."
```

```
ans =
```

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0049
```



```
idStartTime: 281650
idDopplerShift: 53
    mean: 4.7299e-10
    meanSquare: 1.2018e-09
    phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011011.
```

```
> In MessageAnalyzer/validateAndSplitMessage (line 110)
```

```
In MessageAnalyzer/analyzeMessage (line 71)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
```

```
Warning: Error no ack: received CRC 101011110001010000110110 and CRC remainder 00100010000110000010110110
```

```
> In MessageAnalyzer/analyzeMessage (line 85)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

```
struct with fields:
```

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
      SV_ID: '000001'
    message_ID: '0010'
  message_body: '010010110001100110011111111000'
      CRC: '101011110001010000110110'
      ACKed: 0
    isACKmessage: 1
  estimatedDopplerStart: 98.5051
  estimatedDopplerEnd: 119.8580
    estimatedDelay: 0.0282
  estimatedPhase: 3.3538
```

```
ans =
```

```
"Results saved in MM_test_6.31_204.4_f1_d1000_s10_c3.json"
```

```
Elapsed time is 16.768935 seconds.
```

```
.
```

```
ans =
```

```
"Generation test signal completed."
```

```
Elapsed time is 0.968288 seconds.
```

```
ans =
```

```
"Acquisition search 10.0% completed."
```

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0039
   idStartTime: 281650
   idDopplerShift: 53
              mean: 3.7444e-10
   meanSquare: 7.6051e-10
              phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011011.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
Warning: Error no ack: received CRC 1010111110001010000110110 and CRC remainder 0010001000110000010110110
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
        SV_ID: '000001'
    message_ID: '0010'
  message_body: '010010110001100110011111111000'
        CRC: '101011110001010000110110'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 98.5051
estimatedDopplerEnd: 119.8580
estimatedDelay: 0.0282
estimatedPhase: 3.3538
```

```
ans =
```

```
"Results saved in MM_test_6.64_204.4_f1_d1000_s10_c3.json"
```

```
Elapsed time is 17.333155 seconds.
```

```
.
```

```
ans =
```

```
"Generation test signal completed."
```

```
Elapsed time is 1.043286 seconds.
```

```
ans =
```

```
"Acquisition search 10.0% completed."
```

```
ans =
```

```
"Acquisition search 20.0% completed."
```

```
ans =
```

```
"Acquisition search 30.0% completed."
```

```
ans =
```

```
"Acquisition search 40.0% completed."
```



ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

ans =

"Acquisition search 90.0% completed."

ans =

"Acquisition search 100.0% completed."

ans =

struct with fields:

```
    maxPeak: 0.0839
    idStartTime: 281650
    idDopplerShift: 52
        mean: 1.6107e-08
    meanSquare: 3.0360e-07
        phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

```
Warning: Error. Incorrect received tail 011111.
> In MessageAnalyzer/validateAndSplitMessage (line 110)
In MessageAnalyzer/analyzeMessage (line 71)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 010111010110111110100101 and CRC remainder 0011101010100100000100111
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
```

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010100000011101100001000010111'
    CRC: '010111010110111110100101'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 83.4795
  estimatedDelay: 0.0282
  estimatedPhase: 3.0142
```

ans =

```
"Results saved in MM_test_2.32_132.6_f1_d1000_s10_c5.json"
```

Elapsed time is 17.546275 seconds.

.

ans =

```
"Generation test signal completed."
```

Elapsed time is 1.093546 seconds.

ans =

```
"Acquisition search 10.0% completed."
```

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0528
    idStartTime: 281650
    idDopplerShift: 52
              mean: 1.1892e-08
    meanSquare: 1.1989e-07
              phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011111.
```

```
> In MessageAnalyzer/validateAndSplitMessage (line 110)
```

```
In MessageAnalyzer/analyzeMessage (line 71)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 0101110101101111110100101 and CRC remainder 001110101010000100111
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
        TRACKING_OK: 1
  DEMODULATION_OK: 0
          SV_ID: '000001'
    message_ID: '0011'
  message_body: '010100000011101100001000010111'
          CRC: '0101110101101111110100101'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 83.4795
estimatedDelay: 0.0282
estimatedPhase: 3.0142
```



```
ans =
```

```
"Results saved in MM_test_2.99_132.6_f1_d1000_s10_c5.json"
```

```
Elapsed time is 17.308699 seconds.
```

```
.
```

```
ans =
```

```
"Generation test signal completed."
```

```
Elapsed time is 0.973665 seconds.
```

```
ans =
```

```
"Acquisition search 10.0% completed."
```

```
ans =
```

```
"Acquisition search 20.0% completed."
```

```
ans =
```

```
"Acquisition search 30.0% completed."
```

```
ans =
```

```
"Acquisition search 40.0% completed."
```

```
ans =
```

```
"Acquisition search 50.0% completed."
```

```
ans =
```

```
"Acquisition search 60.0% completed."
```

```
ans =
```

```
"Acquisition search 70.0% completed."
```

```
ans =
```

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0334
    idStartTime: 281650
    idDopplerShift: 52
        mean: 5.9270e-09
    meanSquare: 4.7995e-08
        phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011111.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)  
Warning: Error no ack: received CRC 010111010110111110100101 and CRC remainder 0011101010100100000100111  
> In MessageAnalyzer/analyzeMessage (line 85)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010100000011101100001000010111'
    CRC: '010111010110111110100101'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 83.4795
  estimatedDelay: 0.0282
  estimatedPhase: 3.0142
```

ans =

```
"Results saved in MM_test_3.65_132.6_f1_d1000_s10_c5.json"
```

Elapsed time is 17.093105 seconds.

.

ans =

```
"Generation test signal completed."
```

Elapsed time is 1.026568 seconds.

ans =

```
"Acquisition search 10.0% completed."
```

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0210
    idStartTime: 281650
    idDopplerShift: 52
              mean: 6.7084e-09
    meanSquare: 1.8966e-08
              phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

ans =

"Tracker step 3: demodulated 30 symbols."

ans =

"Tracker step 4: demodulated 40 symbols."

ans =

"Tracker step 5: demodulated 50 symbols."

ans =

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

Warning: Error. Incorrect received tail 011111.

> In MessageAnalyzer/validateAndSplitMessage (line 110)

In MessageAnalyzer/analyzeMessage (line 71)

In RECEIVER (line 260)



```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 0101110101101111110100101 and CRC remainder 001110101010000100111
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
        SV_ID: '000001'
    message_ID: '0011'
  message_body: '010100000011101100001000010111'
        CRC: '0101110101101111110100101'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 83.4795
estimatedDelay: 0.0282
estimatedPhase: 3.0142
```

ans =

"Results saved in MM\_test\_4.32\_132.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.477283 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 1.055430 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

```
ans =
```

```
"Acquisition search 50.0% completed."
```

```
ans =
```

```
"Acquisition search 60.0% completed."
```

```
ans =
```

```
"Acquisition search 70.0% completed."
```

```
ans =
```

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0133
    idStartTime: 281650
    idDopplerShift: 52
        mean: 1.2750e-09
    meanSquare: 7.5964e-09
        phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011111.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)  
Warning: Error no ack: received CRC 010111010110111110100101 and CRC remainder 0011101010100100000100111  
> In MessageAnalyzer/analyzeMessage (line 85)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010100000011101100001000010111'
    CRC: '010111010110111110100101'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 83.4795
  estimatedDelay: 0.0282
  estimatedPhase: 3.0142
```

ans =

```
"Results saved in MM_test_4.98_132.6_f1_d1000_s10_c5.json"
```

Elapsed time is 18.320590 seconds.

.

ans =

```
"Generation test signal completed."
```

Elapsed time is 0.986433 seconds.

ans =

```
"Acquisition search 10.0% completed."
```

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0105  
    idStartTime: 281650  
    idDopplerShift: 52  
              mean: 2.9888e-09  
    meanSquare: 4.7433e-09  
              phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```



```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011111.
```

```
> In MessageAnalyzer/validateAndSplitMessage (line 110)
```

```
In MessageAnalyzer/analyzeMessage (line 71)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 0101110101101111110100101 and CRC remainder 001110101010000100111
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
        TRACKING_OK: 1
  DEMODULATION_OK: 0
          SV_ID: '000001'
    message_ID: '0011'
  message_body: '010100000011101100001000010111'
          CRC: '0101110101101111110100101'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 83.4795
estimatedDelay: 0.0282
estimatedPhase: 3.0142
```

ans =

"Results saved in MM\_test\_5.32\_132.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.969141 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.994783 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

ans =

"Acquisition search 90.0% completed."

ans =

"Acquisition search 100.0% completed."

ans =

struct with fields:

```
    maxPeak: 0.0083
    idStartTime: 281650
    idDopplerShift: 52
        mean: 3.0367e-09
    meanSquare: 3.0016e-09
        phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

```
Warning: Error. Incorrect received tail 011111.
> In MessageAnalyzer/validateAndSplitMessage (line 110)
In MessageAnalyzer/analyzeMessage (line 71)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 010111010110111110100101 and CRC remainder 0011101010100100000100111
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
```

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010100000011101100001000010111'
    CRC: '010111010110111110100101'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 83.4795
  estimatedDelay: 0.0282
  estimatedPhase: 3.0142
```

ans =

```
"Results saved in MM_test_5.65_132.6_f1_d1000_s10_c5.json"
```

Elapsed time is 17.415241 seconds.

.

ans =

```
"Generation test signal completed."
```

Elapsed time is 1.065114 seconds.

ans =

```
"Acquisition search 10.0% completed."
```

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =



```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0066  
    idStartTime: 281650  
    idDopplerShift: 52  
              mean: 2.3848e-09  
    meanSquare: 1.8992e-09  
              phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011111.
```

```
> In MessageAnalyzer/validateAndSplitMessage (line 110)
```

```
In MessageAnalyzer/analyzeMessage (line 71)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 010111010110111110100101 and CRC remainder 001110101010000100111
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
        SV_ID: '000001'
    message_ID: '0011'
  message_body: '010100000011101100001000010111'
        CRC: '010111010110111110100101'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 83.4795
estimatedDelay: 0.0282
estimatedPhase: 3.0142
```

ans =

"Results saved in MM\_test\_5.98\_132.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.757969 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.986303 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

```
ans =
```

```
"Acquisition search 50.0% completed."
```

```
ans =
```

```
"Acquisition search 60.0% completed."
```

```
ans =
```

```
"Acquisition search 70.0% completed."
```

```
ans =
```

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0053
    idStartTime: 281650
    idDopplerShift: 52
        mean: 1.6824e-09
    meanSquare: 1.2005e-09
        phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011100.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)  
Warning: Error no ack: received CRC 010111010110111110100101 and CRC remainder 0011101010100100000100111  
> In MessageAnalyzer/analyzeMessage (line 85)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010100000011101100001000010111'
    CRC: '010111010110111110100101'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 83.4795
  estimatedDelay: 0.0282
  estimatedPhase: 3.0142
```

ans =

```
"Results saved in MM_test_6.31_132.6_f1_d1000_s10_c5.json"
```

Elapsed time is 17.836638 seconds.

.

ans =

```
"Generation test signal completed."
```

Elapsed time is 1.003283 seconds.

ans =

```
"Acquisition search 10.0% completed."
```



ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0042
    idStartTime: 281650
    idDopplerShift: 52
              mean: 4.6293e-10
    meanSquare: 7.5970e-10
              phase: 3.0142
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011111.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 010111010110111110100101 and CRC remainder 001110101010000100111
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
        TRACKING_OK: 1
  DEMODULATION_OK: 0
          SV_ID: '000001'
    message_ID: '0011'
  message_body: '010100000011101100001000010111'
          CRC: '010111010110111110100101'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 83.4795
estimatedDelay: 0.0282
estimatedPhase: 3.0142
```

ans =

"Results saved in MM\_test\_6.64\_132.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.445904 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.973281 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

ans =

"Acquisition search 90.0% completed."

ans =

"Acquisition search 100.0% completed."

ans =

struct with fields:

```
    maxPeak: 0.0669
    idStartTime: 281649
    idDopplerShift: 52
        mean: 3.7594e-08
    meanSquare: 3.0346e-07
        phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

```
Warning: Error. Incorrect received tail 000101.
> In MessageAnalyzer/validateAndSplitMessage (line 110)
In MessageAnalyzer/analyzeMessage (line 71)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 11110000011101111101111 and CRC remainder 0101111110111011010010001
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
```

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =



struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010101100111001101000010100010'
    CRC: '111100000111101111101111'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 104.8330
  estimatedDelay: 0.0282
  estimatedPhase: 4.0968
```

ans =

"Results saved in MM\_test\_2.32\_162.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 16.984742 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.973487 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0420
    idStartTime: 281649
    idDopplerShift: 52
              mean: 2.2078e-08
    meanSquare: 1.1983e-07
              phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 000101.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 111100000111101111101111 and CRC remainder 0101111110111011010010001
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
        TRACKING_OK: 1
  DEMODULATION_OK: 0
          SV_ID: '000001'
        message_ID: '0011'
    message_body: '010101100111001101000010100010'
          CRC: '111100000111101111101111'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 104.8330
estimatedDelay: 0.0282
estimatedPhase: 4.0968
```

ans =

"Results saved in MM\_test\_2.99\_162.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 18.118449 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.991032 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

ans =

"Acquisition search 90.0% completed."

ans =

"Acquisition search 100.0% completed."

ans =

struct with fields:

```
    maxPeak: 0.0266
    idStartTime: 281649
    idDopplerShift: 52
        mean: 2.0797e-09
    meanSquare: 4.8023e-08
        phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```



```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 000101.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)  
Warning: Error no ack: received CRC 11110000011101111101111 and CRC remainder 010111110111011010010001  
> In MessageAnalyzer/analyzeMessage (line 85)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010101100111001101000010100010'
    CRC: '111100000111101111101111'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 104.8330
  estimatedDelay: 0.0282
  estimatedPhase: 4.0968
```

ans =

```
"Results saved in MM_test_3.65_162.6_f1_d1000_s10_c5.json"
```

Elapsed time is 17.627355 seconds.

.

ans =

```
"Generation test signal completed."
```

Elapsed time is 0.987686 seconds.

ans =

```
"Acquisition search 10.0% completed."
```

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0167
    idStartTime: 281649
    idDopplerShift: 52
              mean: 5.0214e-09
    meanSquare: 1.8963e-08
              phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 000101.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 111100000111101111101111 and CRC remainder 0101111110111011010010001
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
        TRACKING_OK: 1
  DEMODULATION_OK: 0
        SV_ID: '000001'
    message_ID: '0011'
  message_body: '010101100111001101000010100010'
        CRC: '111100000111101111101111'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 104.8330
estimatedDelay: 0.0282
estimatedPhase: 4.0968
```

ans =

"Results saved in MM\_test\_4.32\_162.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.706684 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.972591 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

ans =

"Acquisition search 90.0% completed."

ans =

"Acquisition search 100.0% completed."

ans =

struct with fields:



```
    maxPeak: 0.0106
    idStartTime: 281649
    idDopplerShift: 52
        mean: 2.5702e-09
    meanSquare: 7.5991e-09
        phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

Warning: Error. Incorrect received tail 000101.

> In MessageAnalyzer/validateAndSplitMessage (line 110)

In MessageAnalyzer/analyzeMessage (line 71)

In RECEIVER (line 260)

In RECEIVERTest/globalTest (line 116)

Warning: Error no ack: received CRC 11110000011101111101111 and CRC remainder 010111110111011010010001

> In MessageAnalyzer/analyzeMessage (line 85)

In RECEIVER (line 260)

In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010101100111001101000010100010'
    CRC: '111100000111101111101111'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 104.8330
  estimatedDelay: 0.0282
  estimatedPhase: 4.0968
```

ans =

"Results saved in MM\_test\_4.98\_162.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 18.348602 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.975579 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0084
    idStartTime: 281649
    idDopplerShift: 52
        mean: 3.9892e-09
    meanSquare: 4.7440e-09
        phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011000.
```

```
> In MessageAnalyzer/validateAndSplitMessage (line 110)
```

```
In MessageAnalyzer/analyzeMessage (line 71)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 1010111001001000000110111 and CRC remainder 00000000101000010101001001
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
        SV_ID: '000001'
    message_ID: '0011'
  message_body: '010101100111001101000010100010'
        CRC: '1010111001001000000110111'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 86.0677
estimatedDelay: 0.0282
estimatedPhase: 4.0968
```

ans =

"Results saved in MM\_test\_5.32\_162.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.897579 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.982651 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."



```
ans =
```

```
"Acquisition search 50.0% completed."
```

```
ans =
```

```
"Acquisition search 60.0% completed."
```

```
ans =
```

```
"Acquisition search 70.0% completed."
```

```
ans =
```

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0066
    idStartTime: 281649
    idDopplerShift: 52
        mean: 4.5266e-09
    meanSquare: 2.9991e-09
        phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

```
Warning: Error. Incorrect received tail 100111.
> In MessageAnalyzer/validateAndSplitMessage (line 110)
In MessageAnalyzer/analyzeMessage (line 71)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 101011100100111111001000 and CRC remainder 00000000101000001010110110
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
```

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010101100111001101000010100010'
    CRC: '101011100100111111001000'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 86.0677
  estimatedDelay: 0.0282
  estimatedPhase: 4.0968
```

ans =

"Results saved in MM\_test\_5.65\_162.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 18.183063 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 1.015960 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0053
    idStartTime: 281649
    idDopplerShift: 52
        mean: 2.7419e-09
    meanSquare: 1.8977e-09
        phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

ans =

"Tracker step 3: demodulated 30 symbols."

ans =

"Tracker step 4: demodulated 40 symbols."

ans =

"Tracker step 5: demodulated 50 symbols."

ans =

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

Warning: Error. Incorrect received tail 000101.

> In MessageAnalyzer/validateAndSplitMessage (line 110)

In MessageAnalyzer/analyzeMessage (line 71)

In RECEIVER (line 260)

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 111100000111101111101111 and CRC remainder 0101111110111011010010001
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
        TRACKING_OK: 1
  DEMODULATION_OK: 0
          SV_ID: '000001'
    message_ID: '0011'
  message_body: '010101100111001101000010100010'
          CRC: '111100000111101111101111'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 104.8330
estimatedDelay: 0.0282
estimatedPhase: 4.0968
```



ans =

"Results saved in MM\_test\_5.98\_162.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.976333 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.967897 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

ans =

"Acquisition search 90.0% completed."

ans =

"Acquisition search 100.0% completed."

ans =

struct with fields:

```
    maxPeak: 0.0042
    idStartTime: 281649
    idDopplerShift: 52
        mean: 1.3237e-09
    meanSquare: 1.2005e-09
        phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 000101.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)  
Warning: Error no ack: received CRC 11110000011101111101111 and CRC remainder 0101111110111011010010001  
> In MessageAnalyzer/analyzeMessage (line 85)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0011'
  message_body: '010101100111001101000010100010'
    CRC: '111100000111101111101111'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 78.3030
  estimatedDopplerEnd: 104.8330
  estimatedDelay: 0.0282
  estimatedPhase: 4.0968
```

ans =

"Results saved in MM\_test\_6.31\_162.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.609290 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.992306 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0033
    idStartTime: 281649
    idDopplerShift: 52
              mean: 1.6887e-10
    meanSquare: 7.6026e-10
              phase: -2.1864
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

ans =

"Tracker step 3: demodulated 30 symbols."

ans =

"Tracker step 4: demodulated 40 symbols."

ans =

"Tracker step 5: demodulated 50 symbols."

ans =

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

Warning: Error. Incorrect received tail 000101.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)



```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 111100000111101111101111 and CRC remainder 0101111110111011010010001
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
        TRACKING_OK: 1
  DEMODULATION_OK: 0
        SV_ID: '000001'
    message_ID: '0011'
  message_body: '010101100111001101000010100010'
        CRC: '111100000111101111101111'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 78.3030
estimatedDopplerEnd: 104.8330
estimatedDelay: 0.0282
estimatedPhase: 4.0968
```

ans =

"Results saved in MM\_test\_6.64\_162.6\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.613253 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.964227 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

ans =

"Acquisition search 90.0% completed."

ans =

"Acquisition search 100.0% completed."

ans =

struct with fields:

```
    maxPeak: 0.0780
    idStartTime: 281650
    idDopplerShift: 53
        mean: 2.2011e-08
    meanSquare: 3.0339e-07
        phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 100001.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)  
Warning: Error no ack: received CRC 101110011111101110011001 and CRC remainder 1100000000010110100011101  
> In MessageAnalyzer/analyzeMessage (line 85)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0010'
  message_body: '0100001011111110100110011000110'
    CRC: '101110011111101100110011001'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 98.5051
  estimatedDopplerEnd: 114.6820
  estimatedDelay: 0.0282
  estimatedPhase: 3.3539
```

ans =

```
"Results saved in MM_test_2.32_204.4_f1_d1000_s10_c5.json"
```

Elapsed time is 17.435674 seconds.

.

ans =

```
"Generation test signal completed."
```

Elapsed time is 0.993185 seconds.

ans =

```
"Acquisition search 10.0% completed."
```

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0490
    idStartTime: 281650
    idDopplerShift: 53
              mean: 2.2378e-08
    meanSquare: 1.1988e-07
              phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```



ans =

"Tracker step 3: demodulated 30 symbols."

ans =

"Tracker step 4: demodulated 40 symbols."

ans =

"Tracker step 5: demodulated 50 symbols."

ans =

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

Warning: Error. Incorrect received tail 100001.

> In MessageAnalyzer/validateAndSplitMessage (line 110)

In MessageAnalyzer/analyzeMessage (line 71)

In RECEIVER (line 260)

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 101110011111101110011001 and CRC remainder 1100000000010110100011101
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
        TRACKING_OK: 1
  DEMODULATION_OK: 0
          SV_ID: '000001'
        message_ID: '0010'
    message_body: '010000101111110100110011000110'
          CRC: '101110011111101110011001'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 98.5051
estimatedDopplerEnd: 114.6820
    estimatedDelay: 0.0282
    estimatedPhase: 3.3538
```

ans =

"Results saved in MM\_test\_2.99\_204.4\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.674035 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.988122 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

ans =

"Acquisition search 90.0% completed."

ans =

"Acquisition search 100.0% completed."

ans =

struct with fields:

```
    maxPeak: 0.0310
    idStartTime: 281650
    idDopplerShift: 53
        mean: 1.2776e-08
    meanSquare: 4.8000e-08
        phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 100001.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)  
Warning: Error no ack: received CRC 101110011111101110011001 and CRC remainder 1100000000010110100011101  
> In MessageAnalyzer/analyzeMessage (line 85)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0010'
  message_body: '0100001011111110100110011000110'
    CRC: '101110011111101100110011001'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 98.5051
  estimatedDopplerEnd: 114.6820
  estimatedDelay: 0.0282
  estimatedPhase: 3.3538
```

ans =

"Results saved in MM\_test\_3.65\_204.4\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.888015 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 1.002188 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =



```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0195
    idStartTime: 281650
    idDopplerShift: 53
              mean: 1.4234e-08
    meanSquare: 1.8968e-08
              phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011110.
```

```
> In MessageAnalyzer/validateAndSplitMessage (line 110)
```

```
In MessageAnalyzer/analyzeMessage (line 71)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 010001100000010001100110 and CRC remainder 000101010001110001110001010
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
        SV_ID: '000001'
    message_ID: '0010'
  message_body: '0100001010000001011001100111001'
        CRC: '0100011000000010001100110'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 98.5051
estimatedDopplerEnd: 114.6820
estimatedDelay: 0.0282
estimatedPhase: 3.3538
```

ans =

"Results saved in MM\_test\_4.32\_204.4\_f1\_d1000\_s10\_c5.json"

Elapsed time is 18.007351 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.982647 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

```
ans =
```

```
"Acquisition search 50.0% completed."
```

```
ans =
```

```
"Acquisition search 60.0% completed."
```

```
ans =
```

```
"Acquisition search 70.0% completed."
```

```
ans =
```

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0123
    idStartTime: 281650
    idDopplerShift: 53
        mean: 2.0392e-09
    meanSquare: 7.5920e-09
        phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011110.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)  
Warning: Error no ack: received CRC 010001100000010001100110 and CRC remainder 11000001010111000011110100  
> In MessageAnalyzer/analyzeMessage (line 85)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0010'
  message_body: '010011010000000101100110011001'
    CRC: '0100011000000010001100110'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 98.5051
  estimatedDopplerEnd: 114.6820
  estimatedDelay: 0.0282
  estimatedPhase: 3.3538
```

ans =

"Results saved in MM\_test\_4.98\_204.4\_f1\_d1000\_s10\_c5.json"

Elapsed time is 18.249195 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.977669 seconds.

ans =

"Acquisition search 10.0% completed."



ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0097
    idStartTime: 281650
    idDopplerShift: 53
        mean: 2.9188e-09
    meanSquare: 4.7418e-09
        phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 100110.
```

```
> In MessageAnalyzer/validateAndSplitMessage (line 110)
```

```
In MessageAnalyzer/analyzeMessage (line 71)
```

```
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 101110011111101110011001 and CRC remainder 1100000000010110100011101
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
        SV_ID: '000001'
    message_ID: '0010'
  message_body: '010000101111110100110011000110'
        CRC: '101110011111101110011001'
        ACKed: 0
    isACKmessage: 1
estimatedDopplerStart: 98.5051
estimatedDopplerEnd: 114.6820
estimatedDelay: 0.0282
estimatedPhase: 3.3538
```

ans =

"Results saved in MM\_test\_5.32\_204.4\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.853460 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.986040 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

"Acquisition search 80.0% completed."

ans =

"Acquisition search 90.0% completed."

ans =

"Acquisition search 100.0% completed."

ans =

struct with fields:

```
    maxPeak: 0.0078
    idStartTime: 281650
    idDopplerShift: 53
        mean: 3.0713e-09
    meanSquare: 2.9990e-09
        phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011110.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)  
Warning: Error no ack: received CRC 010001100000010001100110 and CRC remainder 1100001010111000011110100  
> In MessageAnalyzer/analyzeMessage (line 85)  
In RECEIVER (line 260)  
In RECEIVERTest/globalTest (line 116)
```

```
ans =
```

```
"Received message analyzed."
```

```
ans =
```

```
"DEMODULATION RESULT 0"
```

```
ans =
```



struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0010'
  message_body: '010011010000000101100110011001'
    CRC: '0100011000000010001100110'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 98.5051
  estimatedDopplerEnd: 114.6820
  estimatedDelay: 0.0282
  estimatedPhase: 3.3538
```

ans =

"Results saved in MM\_test\_5.65\_204.4\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.565882 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 0.989458 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0062
    idStartTime: 281650
    idDopplerShift: 53
              mean: 1.3864e-09
    meanSquare: 1.8997e-09
              phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

ans =

"Tracker step 3: demodulated 30 symbols."

ans =

"Tracker step 4: demodulated 40 symbols."

ans =

"Tracker step 5: demodulated 50 symbols."

ans =

"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

Warning: Error. Incorrect received tail 100001.

> In MessageAnalyzer/validateAndSplitMessage (line 110)

In MessageAnalyzer/analyzeMessage (line 71)

In RECEIVER (line 260)

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 101110011111101110011001 and CRC remainder 1100000000010110100011101
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
  ACQUISITION_OK: 1
      TRACKING_OK: 1
  DEMODULATION_OK: 0
          SV_ID: '000001'
      message_ID: '0010'
  message_body: '010000101111110100110011000110'
          CRC: '101110011111101110011001'
        ACKed: 0
      isACKmessage: 1
estimatedDopplerStart: 98.5051
estimatedDopplerEnd: 114.6820
estimatedDelay: 0.0282
estimatedPhase: 3.3538
```

ans =

"Results saved in MM\_test\_5.98\_204.4\_f1\_d1000\_s10\_c5.json"

Elapsed time is 17.209592 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 1.029567 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

```
ans =
```

```
"Acquisition search 50.0% completed."
```

```
ans =
```

```
"Acquisition search 60.0% completed."
```

```
ans =
```

```
"Acquisition search 70.0% completed."
```

```
ans =
```

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0049
    idStartTime: 281650
    idDopplerShift: 53
        mean: 1.7248e-09
    meanSquare: 1.2015e-09
        phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```



"Tracker step 6: demodulated 60 symbols."

ans =

"Tracker step 7: demodulated 70 symbols."

ans =

"Tracker step 8: demodulated 80 symbols."

```
Warning: Error. Incorrect received tail 011110.
> In MessageAnalyzer/validateAndSplitMessage (line 110)
In MessageAnalyzer/analyzeMessage (line 71)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 0100011000000010001100110 and CRC remainder 11000001010111000011110100
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)
```

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

```
    version: "2"
  ACQUISITION_OK: 1
    TRACKING_OK: 1
  DEMODULATION_OK: 0
    SV_ID: '000001'
  message_ID: '0010'
  message_body: '0100110100000001011001100111001'
    CRC: '0100011000000010001100110'
    ACKed: 0
  isACKmessage: 1
  estimatedDopplerStart: 98.5051
  estimatedDopplerEnd: 114.6820
  estimatedDelay: 0.0282
  estimatedPhase: 3.3538
```

ans =

"Results saved in MM\_test\_6.31\_204.4\_f1\_d1000\_s10\_c5.json"

Elapsed time is 16.813676 seconds.

.

ans =

"Generation test signal completed."

Elapsed time is 1.007360 seconds.

ans =

"Acquisition search 10.0% completed."

ans =

"Acquisition search 20.0% completed."

ans =

"Acquisition search 30.0% completed."

ans =

"Acquisition search 40.0% completed."

ans =

"Acquisition search 50.0% completed."

ans =

"Acquisition search 60.0% completed."

ans =

"Acquisition search 70.0% completed."

ans =

```
"Acquisition search 80.0% completed."
```

```
ans =
```

```
"Acquisition search 90.0% completed."
```

```
ans =
```

```
"Acquisition search 100.0% completed."
```

```
ans =
```

```
struct with fields:
```

```
    maxPeak: 0.0039
    idStartTime: 281650
    idDopplerShift: 53
              mean: 2.4071e-09
    meanSquare: 7.5974e-10
              phase: -2.9293
```

```
ans =
```

```
"Tracker step 1: demodulated 10 symbols."
```

```
ans =
```

```
"Tracker step 2: demodulated 20 symbols."
```

```
ans =
```

```
"Tracker step 3: demodulated 30 symbols."
```

```
ans =
```

```
"Tracker step 4: demodulated 40 symbols."
```

```
ans =
```

```
"Tracker step 5: demodulated 50 symbols."
```

```
ans =
```

```
"Tracker step 6: demodulated 60 symbols."
```

```
ans =
```

```
"Tracker step 7: demodulated 70 symbols."
```

```
ans =
```

```
"Tracker step 8: demodulated 80 symbols."
```

```
Warning: Error. Incorrect received tail 011110.  
> In MessageAnalyzer/validateAndSplitMessage (line 110)  
In MessageAnalyzer/analyzeMessage (line 71)  
In RECEIVER (line 260)
```

```
In RECEIVERTest/globalTest (line 116)
Warning: Error no ack: received CRC 101001100000010001100110 and CRC remainder 11011111111010010111000010
> In MessageAnalyzer/analyzeMessage (line 85)
In RECEIVER (line 260)
In RECEIVERTest/globalTest (line 116)

ans =

"Received message analyzed."

ans =

"DEMODULATION RESULT 0"

ans =

struct with fields:

    version: "2"
    ACQUISITION_OK: 1
    TRACKING_OK: 1
    DEMODULATION_OK: 0
    SV_ID: '000001'
    message_ID: '0010'
    message_body: '010000101111110100110011000110'
    CRC: '101001100000010001100110'
    ACKed: 0
    isACKmessage: 1
    estimatedDopplerStart: 98.5051
    estimatedDopplerEnd: 114.6820
    estimatedDelay: 0.0282
    estimatedPhase: 3.3538
```

```
ans =
```

```
"Results saved in MM_test_6.64_204.4_f1_d1000_s10_c5.json"
```

```
Elapsed time is 16.784258 seconds.
```

```
.
```

```
Done RECEIVERTest
```

```
ans =
```

```
1x1080 TestResult array with properties:
```

```
    Name
```

```
    Passed
```

```
    Failed
```

```
    Incomplete
```

```
    Duration
```

```
    Details
```

```
Totals:
```

```
    1080 Passed, 0 Failed, 0 Incomplete.
```

```
    22770.8363 seconds testing time.
```

```
>>
```