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# Receiver Test Data

Receiver Test Data  
(Sorted by Dynamic Range Narrow Spaced)

Updated 15 February 2008

Device

Under Test  
Noise

Floor

(dBm)  
AGC

Thrshld

(uV)

dB  
100kHz

Blocking

(dB)

Sensitivity

(uV)  
LO Noise

Spacing

(dBc)

kHz  
Front End

Selectivity  
Filter

Ultimate

(dB)  
Dynamic Range

Wide Spaced

(dB)

kHz  
Dynamic Range

Narrow Spaced

(dB)

kHz

Added 2/15/08

Elecraft

K3  
-130

-138b  
2.1

0.6b  
3  
140f  
0.33

0.19b  
138  
10  
B Band Pass  
105  
104  
20  
101f  
2p

Added 2/15/08

Flex

5000A  
-123

-135b  
2.0

0.5b  
3  
123  
1.3

0.3b  
123  
10  
B Band Pass  
98  
96  
20  
96  
2

Added 4/16/06

Ten-Tec

Orion II  
-125

-133b  
2.7

0.65b  
3  
130  
0.75

0.3b  
126  
10  
B Band Pass  
100f  
95f  
20  
95i  
2

Updated 4/17/06

Ten-Tec

Orion  
-127

-135b  
0.8  
3  
137  
0.6

0.25b  
130  
10  
B Band Pass  
100f  
96  
20  
93  
2

Added 2/15/08

Icom

R9500

-127

-130b

-135b1  
1.1

0.25b

0.16b1  
3  
119  
0.7

0.2b

0.11b1  
134  
10  
B Band Pass  
80  
110f  
20  
85f  
2

Drake

R-4C/CF-600/6  
-138  
0.7  
3  
130  
0.15  
135  
10  
A- Preselector  
130  
85  
20  
84  
2

AOR

AR-7030  
-122

-128b  
2.2  
3  
130  
0.5

0.22  
130  
10  
D Hi/Lo Pass  
90  
100  
20  
82  
2

Added 4/16/06

Icom

IC-765  
-134

-140b  
5.0

1.7b  
3  
143  
0.26  
130  
10  
B Band Pass  
95f  
102  
20  
81f j m  
2

Atlas

350-XL  
-131  
1.0  
11  
117  
0.2  
125  
4  
C Band Pass  
95  
81  
20  
81  
2

Kenwood

TS-830/YK88  
-129  
1.5  
3  
122  
0.1  
114  
2  
C Preselector  
85f  
84  
20  
81  
2

Added 4/23/07

Ten-Tec

Omni VII

-130

-140b

0.8

0.2b

3

130

0.45

0.17b

124

10

B 0.5 Octave

100f

92

20

80

2

Added 10/3/04

Icom

IC-7800

-126

-136b

-139b1

4.5

1.2b

0.6b1

3

>135

0.60

0.15b

0.10b1

130

10

A Trk Presel

100f

102

20

80f

2

Added 10/3/04

Elecraft K2

s/n:3170

-129

-136g  
10

1.7b  
15  
123

134h  
0.35

0.20  
123  
10  
B Band Pass  
80f  
98  
20  
80f  
2

Added 2/27/04

Ten-Tec

Omni VI+  
-135  
0.7  
3  
145  
0.2  
137  
20  
B Band Pass  
80  
97  
20  
80  
2

Yaesu

901-DM  
-135  
1.6  
3  
124  
0.15  
109  
2  
C Preselector  
85  
87  
20  
80f  
3

Collins

R-390A  
-137  
N.A.

130  
0.2  
130  
2  
A+ Trk Presel  
85  
81  
20  
79  
2

Ten-Tec Corsair  
-131a  
0.1  
14  
130  
0.2  
132  
5  
C Band Pass  
90  
93  
20  
79  
3

Icom

IC-720A  
-137  
1.6  
3  
138  
0.15  
117  
10  
C 0.5 Octave  
80  
93  
50  
78  
3

Kenwood

TS-820S  
-137  
0.4  
3  
115  
0.2  
125  
10  
C Preselector  
80  
79  
20  
78  
3

Updated 4/17/06

Kenwood TS-850

Inrad-400s

-128

-138b

2.2

0.5b

3

128

0.45

0.15b

90

20

77

2

Updated 4/16/06

Yaesu FT-1000

MP MKV Field

Inrad roofing filter mod

-133b

3.0b

3

135

0.2b

128

10

B 0.5 Octave

90f

91

20

77k

2

JRC

NRD-515

-138

3.5

4

103

0.1

118

10

C 0.8 Octave

80

95

20

77f

2

Ten-Tec Omni V

-134  
1.2  
6  
135  
0.18  
134  
10  
C Band Pass  
100  
89  
20  
76  
2

Atlas

210/215X  
-120a  
N.A.

123  
0.5  
N.A.

C Band Pass

95  
76  
20  
76  
2

Corrected 4/7/06

Icom

756 Pro III  
-132

-140b

-142b1  
2.3

0.7

0.3  
3

142  
0.35

0.14

0.11  
126

10  
B 0.5 Octave  
80  
99

20  
75  
2

Added 4/7/06

Icom

756 Pro II  
-133

-138b

-141b1  
2.1

0.65

0.26  
3

138  
0.32

0.15

0.11  
124  
10  
B 0.5 Octave

80  
98  
20  
75  
2

Drake

R-7  
-135

-140b  
1.0

0.4b  
3  
145  
0.28

0.15b  
114  
10  
B 0.5 Octave

85  
97  
100  
75  
2

Drake

TR-7

-134  
1.3  
3  
146  
0.5  
116  
10  
B 0.5 Octave  
90  
99  
100  
75  
2

Heath

SB-104  
-123  
N.A.

92  
0.5  
N.A.

C Band Pass

75  
79  
20  
75  
4

WJ

HF-1000  
-129

-136ab  
0.11  
3  
123  
0.23

0.13b  
115  
10  
D Wideband  
80  
99  
20  
75  
5

Added 4/7/06

Icom

706MkIIIG  
-135

-140b

1.9

0.6

3

126

0.23

0.12

127

10

C Octave

80

87

20

74

2

Ten-Tec

Omni-B

-136

0.2

25

129

0.15

130

10

C Preselector

80

87

20

74

2

Icom

IC-730

-140

1.5

3

135

0.1

118

10

C 0.5 Octave

80

92

50

74

3

Kenwood

R-820S

-125

4.0  
3  
125  
0.35  
123  
10  
C Preselector  
75  
74  
20  
74  
4

Collins

75-S3B  
-146  
1.1  
15  
122  
0.1  
120  
4  
B+ Preselector  
85  
88  
20  
74  
2

Icom

IC-781  
-127

-138b  
2.0

0.5b  
3

0.5

0.18b  
129  
10  
B 0.5 Octave  
90f  
94  
20  
73  
2

Updated 4/18/06

Stock 781  
-128

-135b  
2.4

0.7b  
3  
131  
0.5

0.22b

B 0.5 Octave

90  
98  
20  
78  
2

Updated 4/18/06

781 with Pin Diodes  
-126

-134b  
3.6

1.15b  
3  
134  
0.54

0.21b

B 0.5 Octave

90  
98  
20  
72  
2

Kenwood

TS-930S

-135  
2.0  
3  
143  
0.15  
115  
10

B- 0.5 Octave

80f  
86  
20  
73  
3

Icom

IC-701

-129  
5.5  
6

130  
0.3  
125  
10  
C Band Pass  
75  
81  
50  
73  
4

Collins

75S-3C  
-141  
1.3  
12  
121  
0.14  
120  
4  
B+ Preselector  
95  
85d  
20  
72  
2

JRC

NRD-525  
-132a  
0.9  
3  
123  
0.2  
120  
10  
B Trk Presel  
65  
95  
50  
72  
5

Added 10/3/04

Icom

756 Pro

-127

-136b

-139b1

3.5

1.0b

0.5b1

3  
132  
0.55

0.21b

0.14b1  
127  
10  
B 0.5 Octave  
90  
86  
20  
71  
2

Drake

R-8  
-128

-131ab  
0.6

0.3  
3  
130  
0.25

0.18b  
115  
10  
C 0.5 Octave  
75f  
90

85b  
20  
71  
5

Icom

IC-R72  
-127

-135a  
3.1

1.2b  
3  
129  
0.28

0.11b  
122  
10  
C 0.5 Octave  
75  
87b  
20  
71  
5

Icom

R-9000  
-131a  
0.8  
3  
129  
0.15  
128  
10  
B 0.5 Octave  
90  
93  
20  
71  
5

Added 2/27/04

Elecraft K2

s/n: 1140  
-135  
2.6  
15  
118  
0.22  
123  
10  
B Band Pass  
80f  
95  
20  
70  
2

JRC

NRD-535  
-135a  
0.9  
3  
114  
0.1  
117  
10  
B Trk Presel  
70  
92  
50  
70  
5

Kenwood

TS-830S  
-136a  
0.9  
3

122  
0.1  
113  
2  
C Preselector  
80  
84  
20  
70  
3

Icom

IC-761  
-131

-139b  
2.0

0.7b  
3  
145  
0.4

0.17b  
129  
10  
B- 0.5 Octave  
90f  
87  
20  
70  
2

Added 4/16/06

Kenwood

TS-870S  
-127

-137b  
1.9

0.44b  
3  
137  
0.5  
121  
10  
C 0.5 Octave  
90f  
95  
20  
69  
2

Added 10/3/04

Yaesu FT-1000

MP MKV Field

-133b

3.0b

3

135

0.2b

128

10

B 0.5 Octave

90f

88

20

69

2

Added 10/3/04

Yaesu

FT-1000 D

-128b1

6.0b1

3

>131

0.3b1

121

10

B 0.5 Octave

90f

90

20

69

2

Lowe

HF-150

-126a

0.7

3

126

0.3

113

10

F No Bandpass

75

84

20

69

5

Kenwood

TS-430S

-136a

0.6

3

134

0.1

102

10  
C 0.5 Octave  
70  
78  
20  
69  
5

Added 10/3/04

Yaesu

FT-1000 MP  
-125

-134b  
3.8

1.1b  
3  
>135  
0.48

0.18b  
128  
10  
B 0.5 Octave  
90f  
97  
20  
68  
2

JRC

NRD-545  
-130a  
2.0  
6  
127  
0.2  
118  
10  
B 0.5 Octave  
65  
96  
100  
68  
5

Signal/One

CX-11A  
-122a  
0.6  
17  
109  
0.6  
119  
50  
C 0.5 Octave

105  
90  
50  
68  
5f

Kenwood

TS-180S  
-139  
0.9  
3  
115  
0.15  
120  
10  
C Preselector  
80  
70  
20  
68  
3

Drake

TR-4C  
-124a  
1.2  
3  
105  
0.4  
130  
10  
C Preselector  
80  
74  
20  
68  
2

Icom

IC-735  
-126  
  
-133b  
1.5  
12  
135  
0.35  
  
0.18b  
123  
10  
C 0.5 Octave  
90f  
83  
20  
68  
2

Added 1/21/04

Icom

IC-R75  
-123a

-130b  
3.5

1.3b  
3  
119  
0.5

0.2b  
109  
10  
B 0.5 Octave  
80  
95  
50  
67  
5

Drake SW8

-127a

0.9  
3

125  
0.32

113  
10

N.A.  
70

92  
20

67  
5

Racal

6790 GM

-128  
0.3

1  
145

0.7  
130

10  
D Broadband

85  
95

20  
66

2

Lowe

HF-235  
-126a

0.8  
3  
129  
0.35  
117  
10  
D Octave  
80  
71  
20  
66  
5

AOR

AR3030  
-131a  
2.0  
10  
130  
0.16  
117  
10  
C 0.5 Octave  
85  
90  
20  
66  
5

Yaesu

FRG-100  
-133a  
0.9  
3  
127  
0.13  
112  
10  
C 0.5 Octave  
70  
99  
50  
65  
5

Kenwood

R-5000  
-131a  
0.4  
3  
134  
0.2  
120  
10  
C 0.5 Octave  
80f  
86  
20  
65

5

Added 2/27/04

Palstar

R-30  
-123  
2.6  
3  
130  
0.35  
116  
10  
C Octave  
90  
88  
20  
64  
5

Yaesu

FRG-7700  
-130a  
1.3  
3  
123  
0.2  
100  
10  
D Octave  
65  
83  
50  
64f  
5c

Kenwood

R-1000  
-130a  
0.9  
3  
119  
0.2  
107  
10  
D Octave  
70  
76  
20  
64f  
3c

Heath

SB-303  
-134  
N.A.

104  
0.5  
N.A.

C Preselector

70  
66  
20  
64  
4

Collins

KWM-380

-127a

1.1

5

123

0.3

99

10

B 0.5 Octave

70f

94

50

64f

2

Icom

IC-751

-127

-133b

6.3

3

138

0.4

0.2b

127

10

B- 0.5 Octave

90f

84

20

64

2

Added 3/27/06

Icom 7000

-129

-139b

4.5

1.0

3

119

0.45

0.13

122

10

C Octave

65

90

20

63

2

Added 9/22/07

Yaesu FT-2000

-122

-132b

-140b1

5

1.3b

0.5b1

3

120

1.0

0.3b

0.14b1

122

10

B+ Bandpass

+ Trk

80f

81n

9 0o

20

63n

61o

2

Kenwood

TS-520

-139

N.A.

116

0.15

N.A.

C Preselector

70

63

20

63

3

Yaesu

FT-One

-135  
1.0  
3  
130  
0.2  
99  
10  
C 0.5 Octave  
80f  
91  
50  
63f  
2

Collins

75-S3 Wing

-145  
1.0  
14  
105  
0.1  
N.A.

B Preselector

75  
75  
20  
63  
3

JRC

NRD-93

-141  
1.6  
3  
128  
0.15  
133  
10  
A+ Trk Presel  
80  
94  
20  
63  
2

Yaesu

FT-980

-136  
1.8  
3  
140  
0.12

106  
10  
C 0.5 Octave  
62f  
96  
50  
63  
2

Icom

IC-R70/R-71A  
-129

-135b  
3.1

1.4b  
3  
132  
0.4

0.2b  
128  
10  
B- 0.5 Octave  
90f  
86  
20  
62  
3

Grundig Satellite 700

-127a  
1.6  
3  
106  
0.3  
118  
10  
N.A.  
85  
76  
20  
62  
5

KWZ-30

-130  
1.0  
3  
120  
0.8  
118  
10  
d  
80  
100  
20  
60  
5

Collins

51S1  
-134  
1.0  
7  
117  
0.13  
146  
10  
A Trk Presel  
100  
84e  
100  
60  
5

Icom

R-8500  
-135a  
0.45  
3  
132  
0.11  
131  
10  
B 0.5 Octave  
75  
81  
20  
59  
5

Yaesu

FT-101E  
-141  
N.A.  
  
102  
0.15  
N.A.

C Preselector

70  
60  
20  
59  
3

Drake

R-4C Stock  
-139  
0.7  
3  
130  
0.15  
135  
10

A- Preselector

70  
85  
20  
58  
2

Yaesu

FT-757  
-120

-134b  
1.6  
3  
130  
0.7

0.15b  
109  
10  
C 0.5 Octave  
70f  
86  
20  
56  
3

Ten-Tec

340  
-123

-133ab  
0.5

0.13  
3  
109  
0.4

0.14  
113  
10  
B 0.5 Octave  
70  
93  
100  
46  
5

Kenwood

R-2000  
-130a  
1.4  
3  
115  
0.15  
105  
10  
D Octave

70  
71  
20  
45  
5

Kenwood

R-600  
-130a  
0.8  
3  
109  
0.2  
99  
10  
D Octave  
65  
68  
20  
F.L..  
5

Yaesu

FRG-8800  
-132a  
0.6  
3  
122  
0.18  
N.A.

D Octave

70  
87  
20  
F.L..  
5

AOR

5000  
-124

-130ab  
0.9

1.8  
3  
118  
0.2

0.35  
103  
10  
B 0.5 Octave

60  
58  
50  
f  
5

Device

Under Test  
Noise

Floor

(dBm)  
AGC

Thrshld

(uV)

dB  
100kHz

Blocking

(dB)

Sensitivity

(uV)  
LO Noise

Spacing

(dBc)

kHz  
Front End

Selectivity  
Filter

Ultimate

(dB)  
Dynamic Range

Wide Spaced

(dB)

kHz  
Dynamic Range

Narrow Spaced

(dB)

kHz

## Receiver Table Legend:

1 dB blocking (gain compression) test done at 100 kHz to eliminate phase noise interaction

F.L. = Filter limited, no measurement was possible due to signal leakage around filter

N.A. = Data not available

a

Measured with SSB filter

i

At 1 kHz dynamic also 95 dB but with 300 Hz roofing filter enabled

b

Built-in Preamp actuated

j

At 1 kHz, noise limited to 68 dB

b1

Built-in Preamp 2 actuated

k

At 1 kHz dynamic range was 66 dB

c

Readings would have been lower if 2-kHz spacing had been possible

l

(lowercase L) Reserved

d

Dynamic Range is 90-dB at 100-kHz spacing

m

Receiver was optimized by Malcom Technical Support for best dynamic range

e

20-kHz Dynamic Range is 66-dB

n

Measured with 3 kHz roofing filter

f

Measurement was Phase-Noise Limited

o

Measured with 6 kHz roofing filter

g  
Audio DSP Enabled  
p  
with 200 Hz 5-pole filter

h  
AGC Off

Original and data's from: