

RXCalc

Receiver System Block Diagram Calculator by TSV Engineering

RXCalc is a receiver system block simulator for general purpose receiver systems. Up to eight stages may be entered for analysis of gain, noise figure, and intercept point.

RXCalc simulates:

- System Gain
- System Noise Figure
- System Third Order Intercept Point
- System Intermodulation Rejection
- System Sensitivity
- Carrier-to-Noise Ratio of Each Stage

RXCalc system blocks:

- Amplifier
- Mixer
- Attenuator
- Filter

A unique algorithm allows accurate simulation of filter effects; different gains at different frequencies may be entered.

While **RXCalc** is menu-driven and easy to use, an on-line help system is provided explaining data entry and terminology used in the program.

RXCalc is accurate. It has been thoroughly tested and used in actual commercial system design prior to being offered for sale.

RXCalc is affordable. Compare the price of **RXCalc** to other commercially available packages or to writing your own spreadsheet - you will agree **RXCalc** is an excellent value.

System Requirements:

- Windows 95/98
- 800 x 600 or better screen resolution

Ordering Information:

Price: \$29.95
Shipping/Handling: \$4.00

To order, send check, money order, or company purchase order to:

TSV Engineering
PO Box 99428
Raleigh, NC 27624-9428

The screenshot shows the RXCalc software interface. At the top, it says "RXCalc Version 3.03 (c) 1999 TSV Engineering". Below this, there's a title field "800 MHz AMP'S Receiver - Typical Performance" and a date field "9/2/99". The main part of the interface is a block diagram of a receiver system. It starts with an input signal, followed by a series of blocks: a resistor, a capacitor, a diode, a triangle (amplifier), a circle with a cross (mixer), a capacitor, and another triangle (amplifier). Below the diagram is a table of parameters for each stage and the overall system. The table has 8 columns and 6 rows. The first row is for "G @ 10 in dB", the second for "G @ 11 in dB", the third for "G @ 12 in dB", the fourth for "IP1 in dBm", the fifth for "NF in dB", and the sixth for "C/N (out) in dB". The values in the table are: Row 1: -30, -45, -2.2, 14, -2.7, 14, -2.5, 100; Row 2: -30, -45, -2.2, 14, -2.7, 14, -24.5, 100; Row 3: -30, -45, -2.2, 14, -2.7, 14, -36.5, 100; Row 4: 100, 100, 100, 2.0, 100, 3.5, 23, -33; Row 5: -30, -45, 2.2, 1.6, 2.7, 7.0, 2.5, 16; Row 6: 9.118, 8.668, 6.468, 4.868, 4.766, 3.971, 3.965, 3.495. Below the table are buttons for "Add Stage", "Amplifier", "Attenuator", "Filter", "Mixer", and "Delete". There are also input fields for "System BW (kHz)" (30), "C/N Required (dB)" (3.5), and "C/I Required (dB)" (8.0). At the bottom right, there's a box titled "Calculated System Parameters" containing: "System NF = 5.92 dB", "System IP1 = -14.5 dBm", "Sensitivity = -119.78 dBm", "System IM = 68.4 dB", and "System Gain = 119.8 dB". There are "Calculate" and "Print" buttons at the bottom.

	1	2	3	4	5	6	7	8
G @ 10 in dB	-30	-45	-2.2	14	-2.7	14	-2.5	100
G @ 11 in dB	-30	-45	-2.2	14	-2.7	14	-24.5	100
G @ 12 in dB	-30	-45	-2.2	14	-2.7	14	-36.5	100
IP1 in dBm	100	100	100	2.0	100	3.5	23	-33
NF in dB	-30	-45	2.2	1.6	2.7	7.0	2.5	16
C/N (out) in dB	9.118	8.668	6.468	4.868	4.766	3.971	3.965	3.495

System BW (kHz): 30
C/N Required (dB): 3.5
C/I Required (dB): 8.0

Calculated System Parameters:
System NF = 5.92 dB
System IP1 = -14.5 dBm
Sensitivity = -119.78 dBm
System IM = 68.4 dB
System Gain = 119.8 dB

For further information e-mail us at tsv@engineer.com or visit our web site at www.tsvengeering.cjb.net