



**Installation and Operation Manual for
Automatic Voice/Pager Dialer Option
Model Number 6150-Page**

**Manual Part Number
7-9419-1**



Terms and Conditions of Sale

TERMS AND CONDITIONS OF SALE

Please visit the Bird website for complete information regarding terms and conditions and warranty information.

<http://www.birdrf.com/~media/Bird/Files/PDF/Sales/bird-terms-and-conditions-of-sales.ashx>

Disclaimer

Product part numbering in photographs and drawings is accurate at time of printing. Part number labels on Bird products supercede part numbers given within this manual. Information is subject to change without notice.

Symbols Commonly Used



WARNING



**CAUTION or
ATTENTION**



High Voltage



**Use Safety
Glasses**



**ESD
Electrostatic
Discharge**



Hot Surface



**Electrical Shock
Hazard**



NOTE Important
Information

GENERAL DESCRIPTION

The Bird's automatic voice/pager dialer model **6150-Page** is an OEM product designed to provide reliable emergency notification of an alarm condition in the Signal Booster II. The automatic dialer is installed inside the SB II cabinet and monitors the signal boosters alarm contacts.

When the booster indicates an alarm the voice/pager dialer detects the condition and will initiate notification calls to as many as 8 standard telephones, cellular phones, voice and/or numeric pagers. When activated, the dialer instantly begins calling the notification numbers in sequence. The notification messages are delivered 1 to 3 times in a row in accordance with a pre-selected number of dialing attempts.

The voice/pager dialer is programmable via a keypad located on the front of the unit behind a slide-away panel. Interface to the SB II is through the boosters dry-contact alarm terminal screws. An OEM operating manual is included with the automatic dialer which covers programming of the unit in detail. The OEM operating manual should be

consulted prior to use. The automatic voice/pager dialer can be factory installed at the time the SB II is ordered or it can be installed in the field as an option.

FIELD INSTALLATION

The voice/pager dialer should be mounted to the inside front door of the SB II cabinet as shown in **Figure 1**. All work should be performed by a qualified electronics technician familiar with the signal booster system. Follow the step-by-step instructions listed below to complete the installation.

- 1) Loosen the clamps and open the SB II door. Use the mounting dimensions shown in **Figure 2** when laying out the position of the dialer on the door of the signal booster. Mark the position of four mounting holes on the door of the booster cabinet as shown in the drawing. Placing the dialer in the correct position on the door is important to avoid unnecessary interference with subassemblies inside the cabinet. Also note that the interconnect cables for the dialer are a fixed length and need to extend from the

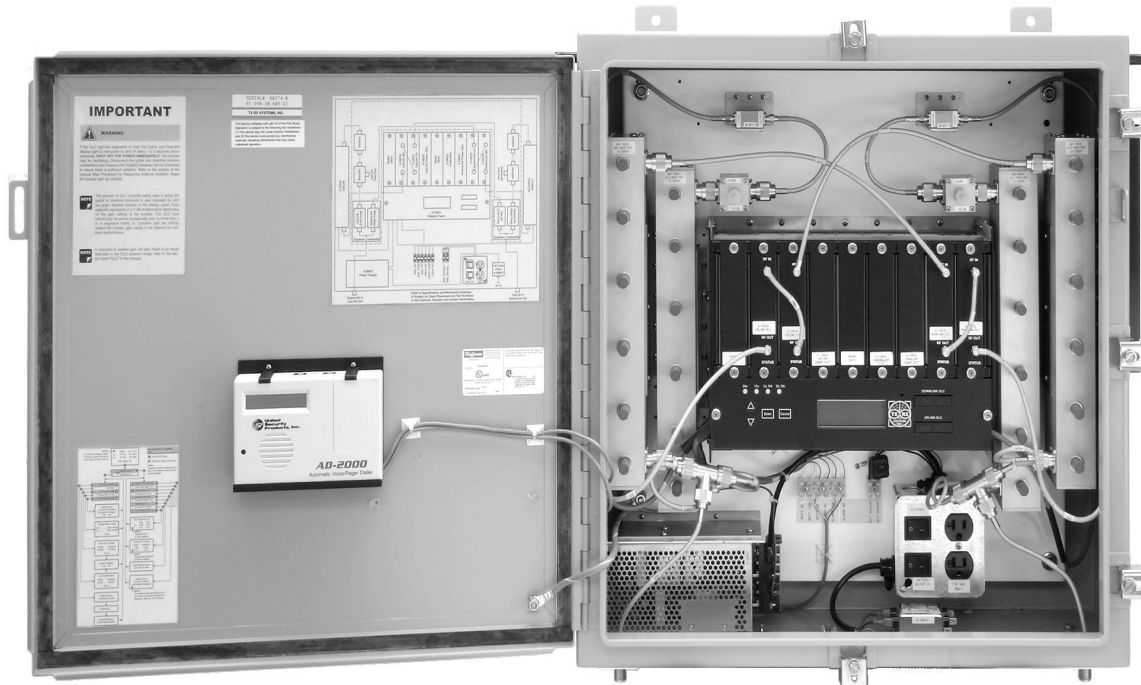


Figure 1: Correct installation of the automatic voice/pager dialer model # 6150-Page.

SBI MODEL	-A- DIM
700 MHz	8.75"
800 MHz	8.75"
900 MHz	8.75"

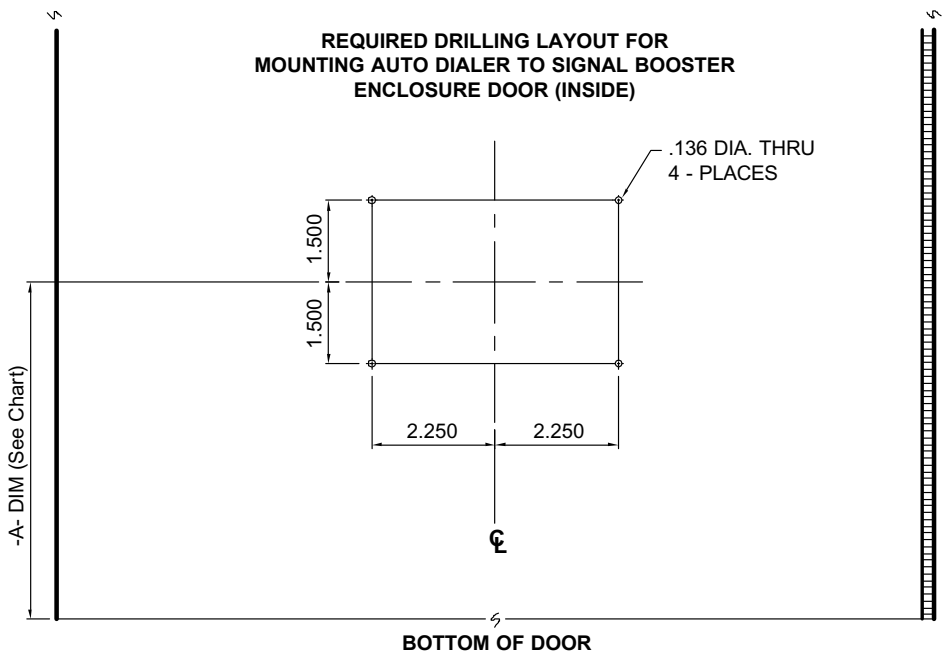


Figure 2: Template for installing the mounting plate to the cabinet door.

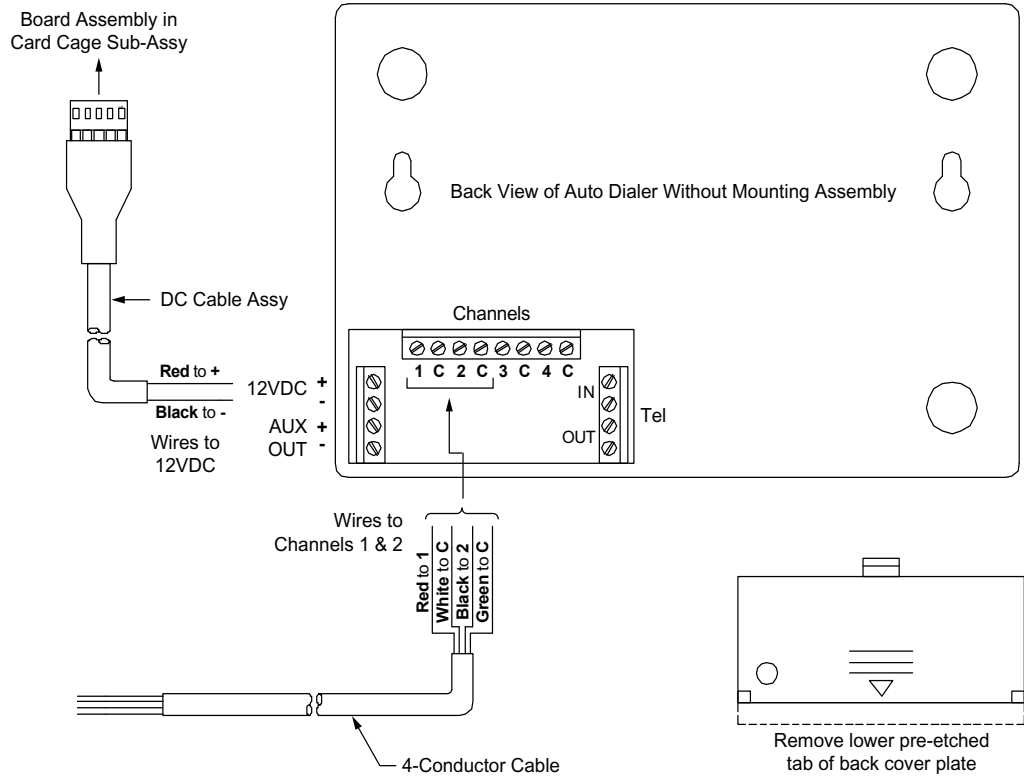


Figure 3: Connecting cables to the rear of the dialer unit.

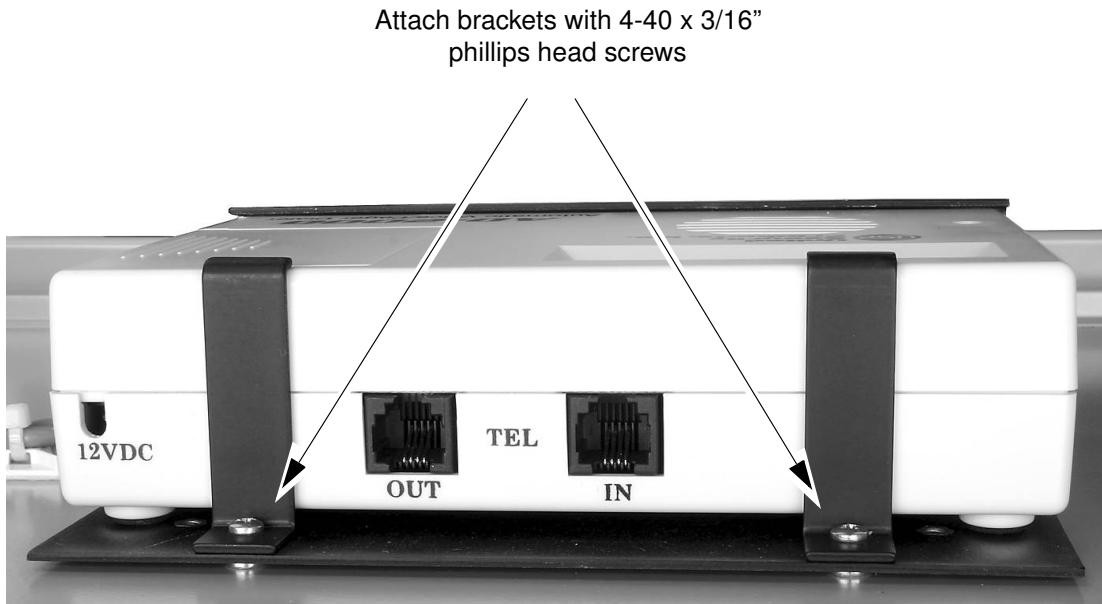


Figure 4: Hold down brackets for the dialer unit.

- 2) Drill out four 0.136 inch diameter holes at the positions you marked on the cabinet door.
- 3) Attach the mounting plate to the inside of the door with four Phillips screws (4-40 x 3/16").
- 4) Remove the cover plate from the rear of the dialer unit to expose the terminal screws. Connect the wires from the 4 conductor cable to the rear of the dialer to the alarm terminal screws and the card cage within the booster cabinet.

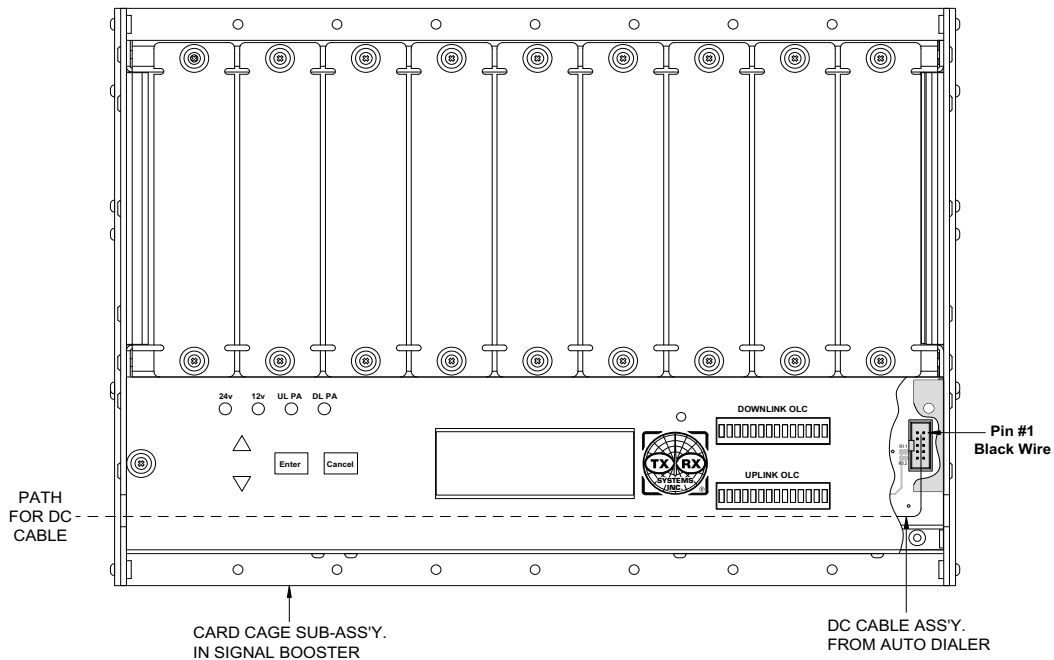


Figure 5: Connecting the DC cable to the card cage.

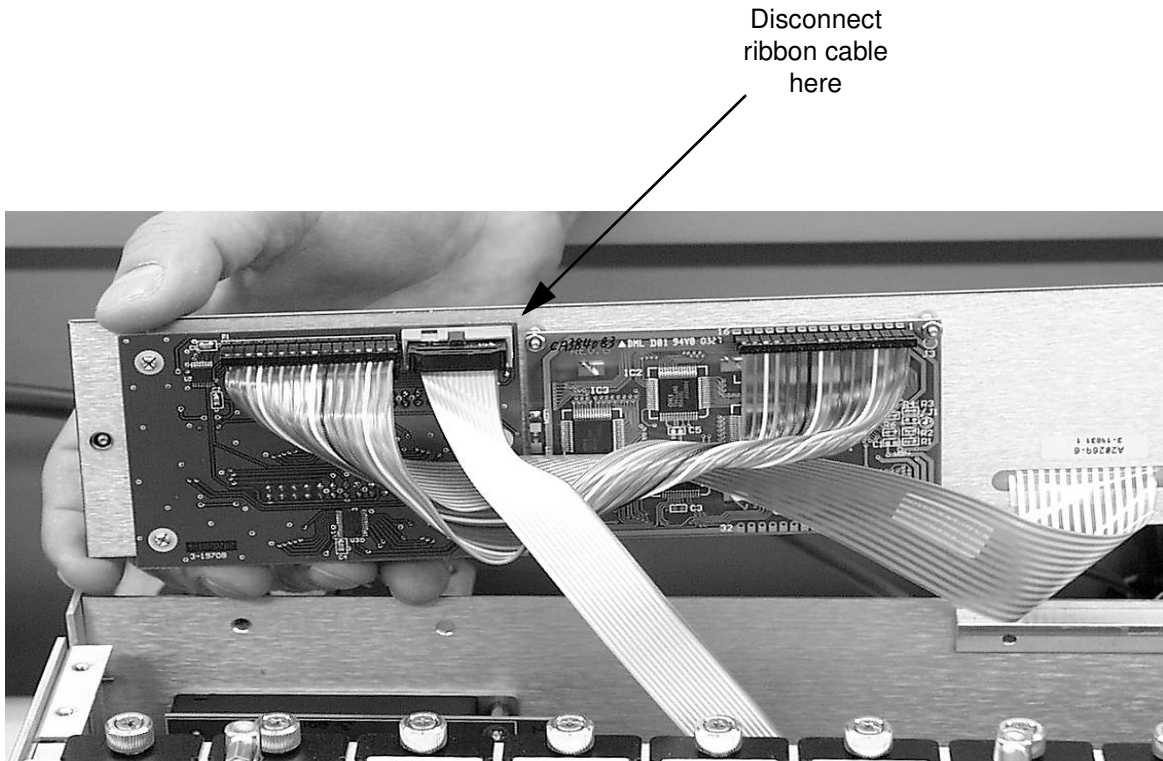


Figure 6: Disconnecting the display user interface assembly from the card cage.

channel 1 and 2 terminal screws as shown in **Figure 3**.

- 5) Connect the wires from the DC cable to the 12 VDC “+” and “-” terminal screws at the rear of the dialer unit. Attach the red wire to the “+” terminal and the black wire to the “-” terminal as shown in figure 3.
- 6) Remove the lower pre-etched tab on the back of the cover plate so that the DC and 4 conductor cable exit the rear of the dialer without being pinched. Attach the dialer unit to the mounting plate using two hold down brackets as shown in **Figure 4**.
- 7) Attach the two cables from the dialer unit to the door using self-stick wire clamps as shown in figure 1. Make sure there is enough slack in the cables so they do not pinch or stretch when the door is opened and closed. Route the cables through the SB II cabinet such that the DC cable can enter the lower left corner of the card

cage and the 4 conductor cable is brought to the alarm terminal screws.

- 8) Plug the DC cable into the connector inside of the card cage as shown in **Figure 5**. In order to gain access to the inside of the card cage the display user interface assembly must be temporarily removed.



Power to the SB II cabinet must be turned OFF during the removal of the display user interface.

- A) Loosen the two thumb-nuts which hold the display user interface assembly to the card cage.
- B) Gently tilt only the top of the assembly up from the card cage. Keep the bottom of the assembly in place. The bottom mounting plate (part of the card cage) has an overhang on it to support the display user interface board. If the assembly is

lifted straight out the overhang could possibly damage the interface circuit board.

- C) With the display user interface assembly standing up straight gently move it upwards while lifting it out an inch or two. This should allow the overhang to clear the interface circuit board without damage.
- D) Remove the ribbon cable that connects the display user interface assembly to the card cage. Refer to **Figure 6**.
- E) With the display user interface assembly temporarily moved out of the way, route the DC cable from the dialer through the inside of the card cage along the path shown by the dotted line in figure 5.

F) Replace the display user interface assembly by following steps D through A in reverse order.

- 9) Connect the four conductor cable from the dialer to the alarm terminal screws inside of the booster cabinet as shown in **Figure 7**.
- 10) Connect a telephone line to the "TEL IN" connector on the top of the dialer unit. See figure 4.
- 11) This completes the installation of the automatic voice/pager dialer. The unit must be programmed for proper operation. Refer to the OEM operating manual for programming specifics.

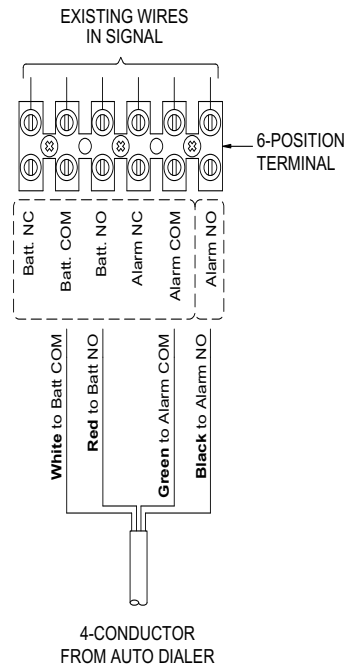
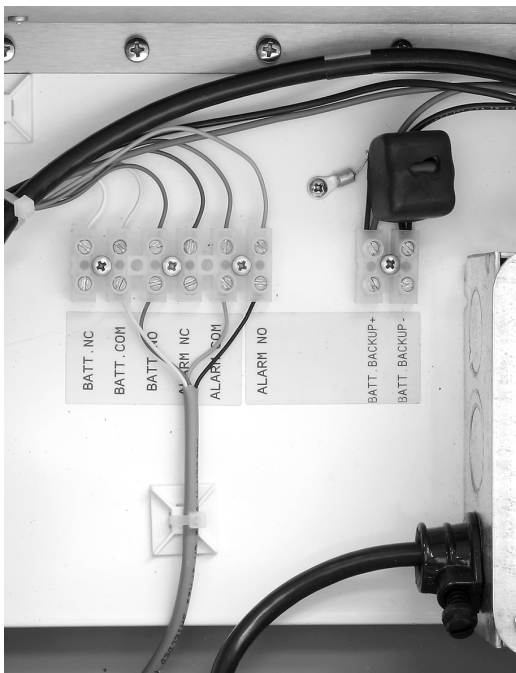


Figure 7: Connecting the 4 conductor cable to the SB II alarm terminal screws.

NOTES

Celsius to Fahrenheit Conversion Table

CELCIUS	FAHRENHEIT
105	221.0
104	219.2
103	217.4
102	215.6
101	213.8
100	212.0
99	210.2
98	208.4
97	206.6
96	204.8
95	203.0
94	201.2
93	199.4
92	197.6
91	195.8
90	194.0
89	192.2
88	190.4
87	188.6
86	186.8
85	185.0
84	183.2
83	181.4
82	179.6
81	177.8
80	176.0
79	174.2
78	172.4
77	170.6
76	168.8
75	167.0
74	165.2
73	163.4
72	161.6
71	159.8
70	158.0
69	156.2
68	154.4
67	152.6

CELCIUS	FAHRENHEIT
66	150.8
65	149.0
64	147.2
63	145.4
62	143.6
61	141.8
60	140.0
59	138.2
58	136.4
57	134.6
56	132.8
55	131.0
54	129.2
53	127.4
52	125.6
51	123.8
50	122.0
49	120.2
48	118.4
47	116.6
46	114.8
45	113.0
44	111.2
43	109.4
42	107.6
41	105.8
40	104.0
39	102.2
38	100.4
37	98.6
36	96.8
35	95.0
34	93.2
33	91.4
32	89.6
31	87.8
30	86.0
29	84.2
28	82.4

CELCIUS	FAHRENHEIT
27	80.6
26	78.8
25	77.0
24	75.2
23	73.4
22	71.6
21	69.8
20	68.0
19	66.2
18	64.4
17	62.6
16	60.8
15	59.0
14	57.2
13	55.4
12	53.6
11	51.8
10	50.0
9	48.2
8	46.4
7	44.6
6	42.8
5	41.0
4	39.2
3	37.4
2	35.6
1	33.8
0	32.0
-1	30.2
-2	28.4
-3	26.6
-4	24.8
-5	23.0
-6	21.2
-7	19.4
-8	17.6
-9	15.8
-10	14.0
-11	12.2

CELCIUS	FAHRENHEIT
-12	10.4
-13	8.6
-14	6.8
-15	5.0
-16	3.2
-17	1.4
-18	-0.4
-19	-2.2
-20	-4.0
-21	-5.8
-22	-7.6
-23	-9.4
-24	-11.2
-25	-13.0
-26	-14.8
-27	-16.6
-28	-18.4
-29	-20.2
-30	-22.0
-31	-23.8
-32	-25.6
-33	-27.4
-34	-29.2
-35	-31.0
-36	-32.8
-37	-34.6
-38	-36.4
-39	-38.2
-40	-40.0
-41	-41.8
-42	-43.6
-43	-45.4
-44	-47.2
-45	-49.0
-46	-50.8
-47	-52.6
-48	-54.4
-49	-56.2
-50	-58.0

Return Loss vs. VSWR

Return Loss	VSWR
30	1.06
25	1.11
20	1.20
19	1.25
18	1.28
17	1.33
16	1.37
15	1.43
14	1.50
13	1.57
12	1.67
11	1.78
10	1.92
9	2.10

Watts to dBm

Watts	dBm
300	54.8
250	54.0
200	53.0
150	51.8
100	50.0
75	48.8
50	47.0
25	44.0
20	43.0
15	41.8
10	40.0
5	37.0
4	36.0
3	34.8
2	33.0
1	30.0

dBm = 10log P/1mW
Where P = power (Watt)

Insertion Loss

Input Power (Watts)

	50	75	100	125	150	200	250	300	
Insertion Loss	3	25	38	50	63	75	100	125	150
	2.5	28	42	56	70	84	112	141	169
	2	32	47	63	79	95	126	158	189
	1.5	35	53	71	88	106	142	177	212
	1	40	60	79	99	119	159	199	238
	.5	45	67	89	111	134	178	223	267

Output Power (Watts)

Free Space Loss

Distance (miles)

	.25	.50	.75	1	2	5	10	15	
Frequency (MHz)	150	68	74	78	80	86	94	100	104
	220	71	77	81	83	89	97	103	107
	460	78	84	87	90	96	104	110	113
	860	83	89	93	95	101	109	115	119
	940	84	90	94	96	102	110	116	120
	1920	90	96	100	102	108	116	122	126

Free Space Loss (dB)

Free space loss = 36.6 + 20log D + 20log F
Where D = distance in miles and F = frequency in MHz

