

LOSSES OF RF POWER WHEN FEEDER WORKS AT SWR MODE

If a feeder has a characteristic impedance differ compare to the load a part of RF power going from the transmitter in the feeder is reflected from the load back to the transmitter. In this case the load uses a part of RF power of the transmitter. **Table 1** shows the losses of RF power when a feeder has SWR.

Igor Grigorov, RK3ZK
antentop@mail.ru

This table does not take into account losses of RF power peculiars to the feeder. The losses you can find of data for the feeder. To calculate real losses needs to sum losses at SWR with losses peculiars to the feeder. Pay attention, data for losses at feeder are given for SWR 1:1 in the feeder. For large SWR the losses do increases. As usual, commercial made

transceivers is designed for work with SWR in feeder not above 1:2.0.

Note: A mismatch of a transmitter's output impedance to the feeder's characteristic impedance does not cause a SWR mode if the antenna (load) is matched to the feeder's characteristic impedance.

SWR in the Feeder	Losses at Reflection from the Load, %	RF Power going to the load from the transmitter, %	Losses at Reflection from the Load, dB
1:1.0	0.00	100.0	0.00
1:1.1	0.23	99.8	-0.01
1:1.2	0.83	99.2	-0.04
1:1.3	1.7	98.3	-0.08
1:1.4	2.78	97.2	-0.12
1:1.5	4.0	96.0	-0.18
1:1.6	5.33	94.5	-0.25
1:1.7	6.72	93.7	-0.28
1:1.8	8.16	91.8	-0.37
1:1.9	9.63	90.4	-0.44
1:2.0	11.1	88.9	-0.51
1:2.2	14.1	85.9	-0.66
1:2.4	17.0	83.0	-0.81
1:2.6	19.8	80.2	-0.96
1:2.8	22.4	77.6	-1.10
1:3.0	25.0	75.0	-1.25
1:3.5	30.9	69.1	-1.61
1:4.0	36.0	64.0	-1.94
1:5.0	44.4	55.6	-2.55
1:7.0	56.3	43.7	-3.6
1:10	67.0	33.0	-4.81
1:20	81.9	18.1	-7.42
1:50	92.3	7.7	-11.10