

How to Aim Your Satellite Radio Antenna

The following chart shows the azimuth and elevation for locations throughout the US and Canada. The azimuth has been magnetically corrected. Find a city near your location, and note the information.

Warning: Although in many locations it may be possible to receive signals from terrestrial repeaters, it is not recommended to use these signals at fixed locations. Repeater signal strength can vary greatly from day to day as function of many uncontrolled variables. Always use signals directly from the satellites when possible.

The XM satellites are in geosynchronous stationary orbit over the Equator at 85° W. longitude (East Satellite), and 115° W. Longitude (West Satellite)

You can:

- 1) Aim your antenna toward the satellite with the clearest view
or
- 2) Aim your antenna between the two satellites. (In the unlikely event of satellite failure, this will provide redundancy)

Once you have the antenna aimed, you may still have to “tweak” it to get an optimum signal.

The SIRIUS satellites are in an elliptical orbit over the equator and constantly on the move flying a “figure eight”.

Your antenna should be aimed at the “cross over point” of the “figure 8”, or about 96.5° West Longitude and 46° North Latitude. This location is over Fergus Falls, Minnesota.

Find a city near you, and aim your antenna toward the location indicated.

You may have to “tweak” the antenna slightly to get the optimum pointing location.

Satellite Radio Antenna Aiming
Azimuth and Elevation

City	St	Sirius		XM Rock (East 85°)		XM Roll (West 115 °)	
		Azimuth	Elevation	Azimuth	Elevation	Azimuth	Elevation
Birmingham	AL	324.1	71.5	179.1	49.1	223.5	39.8
Dothan	AL	325.5	68.4	182.1	51.8	227.5	40.9
Little Rock	AR	337.9	75.9	166.6	47.0	212.1	41.6
Phoenix	AZ	40.7	66.7	128.0	40.5	173.0	49.1
Fillmore	CA	50.8	60.7	119.2	35.5	160.0	47.9
Los Angeles	CA	49.0	61.1	119.8	36.3	161.2	48.4
San Diego	CA	45.7	61.4	120.6	38.0	163.4	50.0
San Francisco	CA	58.5	58.3	116.4	30.6	153.8	43.5
Denver	CO	43.8	77.6	142.4	37.9	184.4	40.8
Washington	DC	300.0	65.7	202.5	42.1	239.2	29.4
Ft Myers	FL	326.3	61.8	190.9	57.2	237.1	42.0
Jacksonville	FL	320.9	64.9	191.3	52.7	234.8	39.2
Key West	FL	328.5	59.9	191.3	59.6	238.9	43.4
Miami	FL	325.2	59.9	195.4	57.9	240.5	41.4
Tampa	FL	325.7	63.5	189.3	55.6	235.1	41.5
Atlanta	GA	318.6	69.9	185.0	48.8	228.0	38.1
Savannah	GA	317.3	65.8	192.8	50.6	234.9	37.4
Pocatello	ID	355.3	70.9	131.0	31.6	169.6	38.1
Chicago	IL	298.0	78.6	179.4	39.2	218.5	32.6
Dodge City	KS	16.3	79.2	151.1	41.6	194.9	41.7
Kansas City	KS	341.5	81.6	162.9	41.5	205.2	38.3
Louisville	KY	309.3	74.5	182.7	43.5	223.4	35.0
New Orleans	LA	337.0	69.8	170.1	52.9	219.5	45.0
Boston	MA	293.3	60.0	214.5	36.9	247.9	23.2
Germantown	MD	299.7	66.1	202.0	41.8	238.7	29.4
Caribou	ME	287.4	56.8	220.2	31.3	252.0	19.0
Portland	ME	291.3	59.3	216.1	35.3	248.9	21.8
Meridian	MN	300.8	85.8	166.9	36.1	205.8	32.8
Minneapolis	MN	285.8	86.0	167.7	35.1	206.0	31.8
St Louis	MO	319.7	78.7	172.6	42.8	214.4	36.9
Billings	MT	76.2	75.9	137.9	30.4	175.6	34.5
Kalispell	MT	80.8	68.9	129.1	25.8	164.8	32.0
Winston-Salem	NC	308.2	67.7	195.2	45.8	234.6	33.6
Minot	ND	106.5	83.7	151.7	30.0	188.7	30.6
North Platte	NE	33.8	82.4	150.8	37.8	192.0	38.2
Omaha	NE	349.9	84.4	160.7	38.9	201.7	36.6
Cherry Hill	NJ	297.6	63.9	206.7	40.5	242.3	27.4
Albuquerque	NM	33.1	72.6	137.5	41.8	183.0	46.4
Shiprock	NM	41.9	72.0	134.8	39.3	178.3	44.9
Elco	NV	61.0	66.7	125.7	31.9	164.4	40.5
Las Vegas	NV	49.9	65.4	124.9	36.3	166.5	46.0
Reno	NV	60.2	61.7	120.0	30.8	157.8	41.8
Brooklyn	NY	295.9	62.8	208.9	39.5	243.7	26.2
Albany	NY	292.2	63.1	209.5	37.3	243.8	24.6
Buffalo	NY	290.5	69.1	199.1	37.8	235.1	27.3
New York	NY	295.9	63.0	208.8	39.4	243.7	26.2
Cleveland	OH	294.6	71.8	192.6	39.7	230.1	30.0
Tulsa	OK	352.6	78.4	158.8	44.6	203.8	41.9
Burns	OR	67.9	63.4	121.9	27.9	158.4	37.3
Eugene	OR	69.0	58.9	117.1	25.3	152.1	36.2
Pendleton	OR	72.4	63.9	122.6	26.2	158.3	34.8
Philadelphia	PA	297.5	64.1	206.4	40.6	242.0	27.5
Newport	RI	294.7	60.1	214.0	37.9	247.7	24.0
Columbia	SC	313.4	67.1	193.1	48.3	234.0	35.8
Pierre	SD	59.5	85.1	152.7	34.4	191.8	34.6

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Azimuth and Elevation

City	St	Sirius		XM Rock (East 85°)		XM Roll (West 115 °)	
		Azimuth	Elevation	Azimuth	Elevation	Azimuth	Elevation
Nashville	TN	317.6	73.8	179.8	45.9	222.2	37.4
Dallas	TX	356.4	74.5	155.6	48.1	204.1	45.7
Houston	TX	352.0	70.9	157.3	52.0	209.1	48.1
Lubbock	TX	15.8	74.1	145.6	45.5	193.3	46.8
San Antonio	TX	1.1	70.5	150.0	51.2	202.8	50.0
Salt Lake City	UT	58.4	70.9	131.3	33.9	171.1	40.5
Milford	UT	52.6	68.7	128.8	35.6	169.9	43.4
Norfolk	VA	304.1	64.1	204.1	44.3	241.2	30.5
Burlington	VT	288.9	62.7	210.8	35.1	244.5	22.9
Seattle	WA	75.0	59.8	118.3	22.8	152.5	32.3
Green Bay	WI	283.3	79.9	179.3	36.2	217.1	30.3
Milwaukee	WI	291.9	79.3	179.1	37.9	217.6	31.6
Charleston	WV	303.8	70.4	192.2	43.3	231.2	32.6
Casper	WY	61.3	77.9	141.0	34.1	180.7	37.5

Canada		Sirius		XM Rock (East 85°)		XM Roll (West 115 °)	
City	Pr	Azimuth	Elevation	Azimuth	Elevation	Azimuth	Elevation
Vancouver	BC	78.4	58.7	115.9	22.9	151.3	33.0
Prince Rupert	BC	81.4	49.7	108.0	15.9	140.6	26.5
Calgary	AB	89.7	68.6	128.6	25.5	165.3	31.5
Edmonton	AB	129.7	68.3	162.3	23.5	198.2	28.8
Saskatoon	SK	109.0	76.0	141.4	27.0	178.6	29.9
Toronto	ON	287.9	69.8	198.6	39.3	236.5	28.4
Ottawa	ON	282.6	65.6	204.0	36.9	240.1	25.1
Montreal	QB	286.3	63.2	210.9	36.4	246.1	23.8
St Johns	QB	286.8	62.8	211.5	36.6	246.6	23.7
Halifax	NS	290.7	51.7	227.8	34.3	259.4	18.1
Saint John's	NF	288.2	39.4	240.4	27.1	268.6	9.7
Brandon	MT	131.5	83.9	154.3	31.1	193.0	31.1
Sault Sainte Marie	ON	274.9	75.7	188.3	36.5	226.7	28.7
Thunder Bay	ON	255.0	80.9	177.8	34.3	216.3	29.1
Whitehorse	YT	84.2	42.8	102.7	9.8	133.9	19.2
Winnipeg	MA	165.3	85.4	159.3	31.7	197.9	30.4
Yellowknife	NT	110.9	61.7	127.2	15.3	160.3	19.3