

TELEPHONE SYSTEM DEFINITIONS

dBm (600 OHM)	Volts Peak-to-Peak
10	6.93
9	6.18
8	5.50
7	4.91
6	4.37
5	3.90
4	3.47
3	3.10
2	2.76
1	2.46
0	2.19
-1	1.95
-2	1.74
-3	1.55
-4	1.38
-5	1.23
-6	1.10
-7	0.98
-8	0.87
-9	0.78
-10	0.69
-11	0.62
-12	0.55
-13	0.49
-14	0.44
-15	0.39
-16	0.35
-20	0.22
-25	0.12
-30	0.07
-35	0.04
-40	0.02
-50	0.01

0 dBm = 90 dBm

$\text{dBm} = \text{dBm} - 90$

$\text{dBm} = \text{dBm} + 90$

Reference Noise = 1 picowatt = - 90 dBm.

Decibels above reference noise= dBm

Decibels above reference noise in a C-message weighting filter = dBm (tone 1000Hz at 0 dBm or 90 dBm).

Picowatts of noise psophometrically weighted (pWp) dBm (tone 800 Hz at -90 dBm) dBm = dBm - 90

ANTENNA POINTING GUIDE*

This guide determines the required azimuth and elevation angles to point an antenna at a geostationary satellite. It applies to uplink DCP antennas and receive site (DRGS) parabolic antennas. The following are needed:

- Latitude of Site
 - Longitude of Site
 - Equatorial Longitude of the Satellite (contact Satellite Agency for this value)
1. Subtract the site longitude from the satellite longitude to determine the relative ground longitude. If the result is negative, the site is West of the satellite. Remember this for step 3.

Example: The satellite is positioned at 135 deg. longitude, and a site is located at 77 deg. longitude, 39 deg. latitude, then

$$135 - 77 = 58 \text{ degrees relative longitude.}$$

2. Look at the nomogram above and find the position that corresponds to the relative longitude and the site latitude. From this intersection, read the "A" curves for azimuth and read the "e" curves for elevation.

Example: Find the point on the nomogram that corresponds to 58 degrees relative longitude (computed in step 1) and 39 degrees latitude. The values for the elevation and azimuth are:

$$e = 16 \text{ deg}$$

$$A = 68 \text{ deg}$$

3. Identify what quadrant the site is located in relative to the satellite and use the chart to adjust the Azimuth.

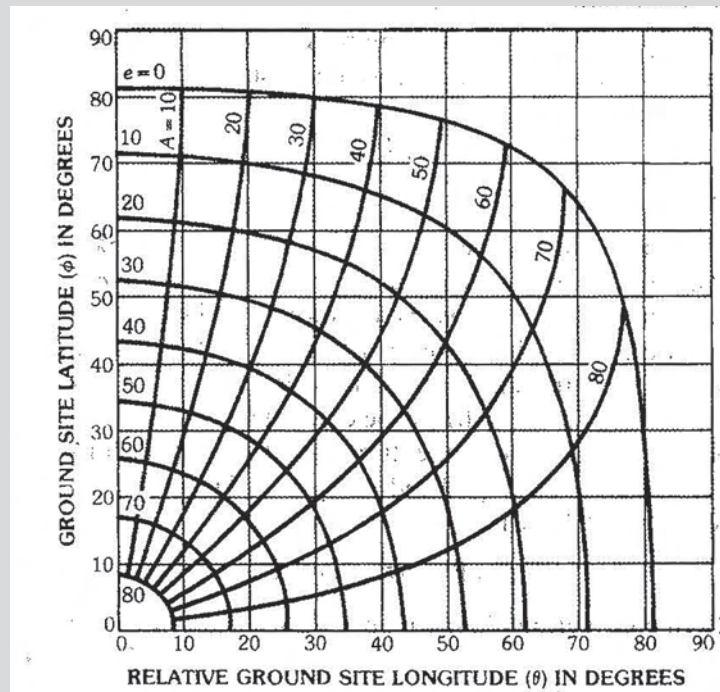
Earth Quadrant Relative to Satellite	True Azimuth Az
NW	180 - A
NE	180 + A
SW	A
SE	360 - A

The site is in the NE of the satellite because the latitude is North and the site is East of the satellite. Therefore, add 180 degrees to the "A" number to obtain the final azimuth from true North. The final values are:

$$e = 16 \text{ deg}$$

$$\text{Az} = 248 \text{ deg}$$

If you use a compass for pointing the antenna, take into account the local site magnetic variation from true north. This value will vary by location of the site. Be careful when using a compass near metal structures or objects as the readings may be inaccurate causing poor antenna pointing.



*Reference : "Reference Data for Engineers: Radio, Electronics, Computer, and Communications" Seventh Edition; Edward C. Jordan, Editor in Chief, Howard W. Sams & Co. 1986.