

SERA

*SouthEastern
Repeater
Association,
Inc.*

www.SERA.org
Downloadable
Forms.

Application for Frequency Coordination (Form-03).

Click on a page below to view that individual page. Use your viewer to print out the last four pages (this prints the entire form). After printing, fill in all four pages and send the completed form along with any other requested documents to your local coordinator.

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SERA Form 03
 Revised July, 1995
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Application for Frequency Coordination SouthEastern Repeater Association, Inc.

**Representing Coordination and UHF/VHF Interest throughout
 Georgia, Kentucky, Mississippi, North Carolina, South
 Carolina, Tennessee, Virginia, and West Virginia**

Please return this form
 to your local district
 or area Coordinator.

(pdf file 04/27/97)

SERA, Inc. provides a service of repeater coordination in FCC authorized bands above 29.5 MHz. This service is provided by volunteers, and its effectiveness is directly proportional to the degree of cooperation between amateur repeater owners and the SERA.

All repeater owners do not cooperate and there is no guarantee that the frequency we assign will be free of interference. Applicants are expected to actively participate with coordinators to determine which frequencies are usable in their area.

Please provide ALL information (print or type) requested, as incomplete forms will delay your application. This information will be kept confidential and will be used only for coordination. We appreciate your cooperation and will respond to your request as soon as possible.

Desired Frequency: Input: _____ output: _____

Alternate Frequency: Input: _____ output: _____

Control / Link Frequency(s) Requested: _____

Proposed Location of Repeater: _____

(Supply published map or clear photocopy, specifically designating the location of the repeater indicating measured distance from at least two (2) points and containing a horizontal error of not more than 1,000 feet. Latitude and longitude be provided to the nearest second.)

City/Town: _____ County: _____ State: _____

Location Specifics:

Transmitter:	Latitude _____	Longitude _____	Enter latitude and longitude in Degrees, Minutes, and Seconds. Remember that minutes and seconds must be an integer of 59 or less. If multiple receivers, please attach map or sketch showing locations.
Receiver 1:	Latitude _____	Longitude _____	
Receiver 2:	Latitude _____	Longitude _____	

Repeater Callsign: _____ Repeater Directories Listing/City Name (limit 16 characters): _____

Trustee Name and Call:

Address:

City, State Zip:

Phone:

Sponsor Name and Call:

Address:

Zip:

Phone:

Holder of Record:	_____ Sponsor	_____ Trustee
Person responsible for answering SERA correspondence:	_____ Sponsor	_____ Trustee

Power, Antenna System: (From attached worksheets pages 3 & 4)

Power (Watts ERP): Antenna Pattern (circle one): Omni Directional to: _____
Ground HAMSL: Antenna HAAT: Antenna height above ground:

General Information: (Circle all that apply)

Mode will be FM VOICE, RTTY, ATV Other: _____
Access will be CARRIER, TONE BURST, DTMF, CTCSS _____ Hz. (Publish tone? Yes No Not Applicable)
Other features will be BATTERY BACKUP, OPEN AUTOPATCH, EMERGENCY AUTOPATCH,
PRIVATE AUTOPATCH, LINKED, REMOTE BASE SYSTEM, Other:

Estimated Repeater Coverage: _____

Mobile (25 Watts @ 3db Gain) _____ miles, Base (25 Watts @ 6 db Gain) _____ miles

Use this space to provide any additional information that you feel your coordinator may need to properly coordinate this repeater:

**I have a copy of the "Coordination Policy and Guidelines of the SouthEastern Repeater Association, Inc."
Revised and Adopted July, 1995**

Trustee (Printed): _____

Trustee (Signature): _____ Date: _____

If Club Sponsored:

Officer (Printed): _____ Call: _____ Date: _____

Officer (Signature): _____ Title: _____

Holder of Record (please check one): ___ Trustee ___ Sponsor

Return this original form to the address at the upper right corner of page 1.

HAAT CALCULATION

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This worksheet may be used to calculate your repeater transmitting antenna's Height Above Average Terrain (HAAT). This data must be supplied in order to properly coordinate your repeater.

Information Needed:

Exact Station Location: _____

Transmit Site Ground Elevation above Sea Level: _____ Feet

Height of center of Antenna above the ground: _____ Feet

Identification of Topographical Map¹ used: _____

On the Topographical Map, plot 8 radials at 45 degree increments, centered on the transmitter location. Then plot 5 circles at 2, 4, 6, 8, and 10 mile radii, centered on the transmitter location. Determine the ground elevations at the 40 points of intersection of the 8 radials and 5 circles and enter these into the table below. (See Figure 1.)

Circle Radius	Radial							
	0°	45°	90°	135°	180°	225°	270°	315°
2 Miles								
4 Miles								
6 Miles								
8 Miles								
10 Miles								

Determine Antenna Height Above Sea Level:

Transmit Site Ground Elevation: _____ Feet

Add Antenna Height above Ground: + _____ Feet

Equals Antenna Height above Sea Level: = _____ Feet

Determine Average Ground Elevation:

Add the Ground Elevation of all 40 points in the above table _____

Divide by 40: _____ / 40

Equals Average Ground Elevation = _____

Now **calculate your Antenna HAAT**

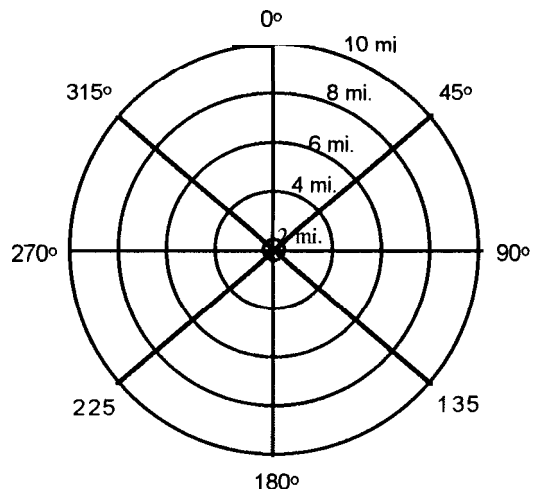
Subtract the Average Ground Elevation from the Antenna Height above Sea Level:

Antenna Height above Sea Level . _____ Feet

Minus Average Ground Elevation: _____ Feet

Equals Antenna :HAAT: - _____ Feet

Figure # 1
(Not to scale)



¹ Indexes and ordering information for suitable topographical maps are available from the US Geological Survey, Washington, DC 20242, or from the Federal Center, Denver, CO 80255.

ERP CALCULATION

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This worksheet may be used to calculate your repeater transmit effective radiated power (ERP). This data must be supplied in order to properly coordinate your repeater.

Information Needed:

Transmitting Frequency Band: _____ MHz
 Transmitter Output Power: _____ Watts
 Antenna Make and Model: _____
 Antenna Gain: _____ dB
 Brand & Model of Antenna Feed Line: _____
 Length of Antenna Feed Line: _____ Feet
 Duplexer Make and Model: _____

SYSTEM GAINS

Transmitter Output Power: _____ dBW
 Add the Antenna Gain + _____ dBd
 Equals System Gain = _____ dB

SYSTEM LOSSES

Length of Antenna Feed Line: _____ Feet
 Divide by 100 / 100
 Equals: = _____
 Multiply this figure by the Cable Loss Factor from Table II of other source:
 x _____ dB per 100'
 Equals Cable Loss in dB: = _____ dB
 Add Duplexer Insertion Loss + _____ dB
 Equals total System Loss = _____ dB

Now calculate your transmit ERP - Subtract the System Loss from the System Gain

System Gain: _____ dB
 Minus System Loss - _____ dB
 Equals ERP in dBW: = _____ dBW*

* Using this figure, refer to Table I to convert from dBW back to watts (always round up to the next higher value):

ERP in Watts: _____ Watts.

Table I

Watts	dBW	Watts	dBW	Watts	dBW	Watts	dBW
1	= 0.0	35	= 15.4	125	= 21.0	475	= 26.8
2	= 3.0	40	= 16.0	150	= 21.8	500	= 27.0
3	= 4.8	45	= 16.5	175	= 22.5	525	= 27.2
4	= 6.0	50	= 17.0	200	= 23.0	550	= 27.4
5	= 7.0	55	= 17.4	225	= 23.5	575	= 27.6
6	= 7.8	60	= 17.8	250	= 24.0	600	= 27.8
7	= 8.5	65	= 18.1	275	= 24.4	625	= 28.0
8	= 9.0	70	= 18.5	300	= 24.8	650	= 28.1
9	= 9.5	75	= 18.8	325	= 25.1	675	= 28.3
10	= 10.0	80	= 19.0	350	= 25.4	700	= 28.5
15	= 11.8	85	= 19.3	375	= 25.7	725	= 28.6
20	= 13.0	90	= 19.5	400	= 26.0	750	= 28.8
25	= 14.0	95	= 19.8	425	= 26.3	775	= 28.9
30	= 14.8	100	= 20.0	450	= 26.5	800	= 29.0

Table II

Mhz	Coaxial Cable feed line loss factors (db per 100 feet at 50 ohms)			
	Typical RG-8	9913 RG-8	1/2" LDF	7/8" LDF
28	.88	.68	.37	.20
50	1.20	.90	.48	.26
144	1.80	1.30	.85	.46
222	2.80	1.85	1.04	.57
440	4.20	2.70	1.51	.84
902	6.70	4.20	2.29	1.28
1240	8.20	5.20	2.64	1.48