



Apartment Window Awning Magnetic Mount Antenna Bracket

http://www.neighborhoodlink.com/RTC-TH_Tech/pages

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The Need: To set up an operational VHF/UHF antenna for simplex and EchoLink RF node radio operations.

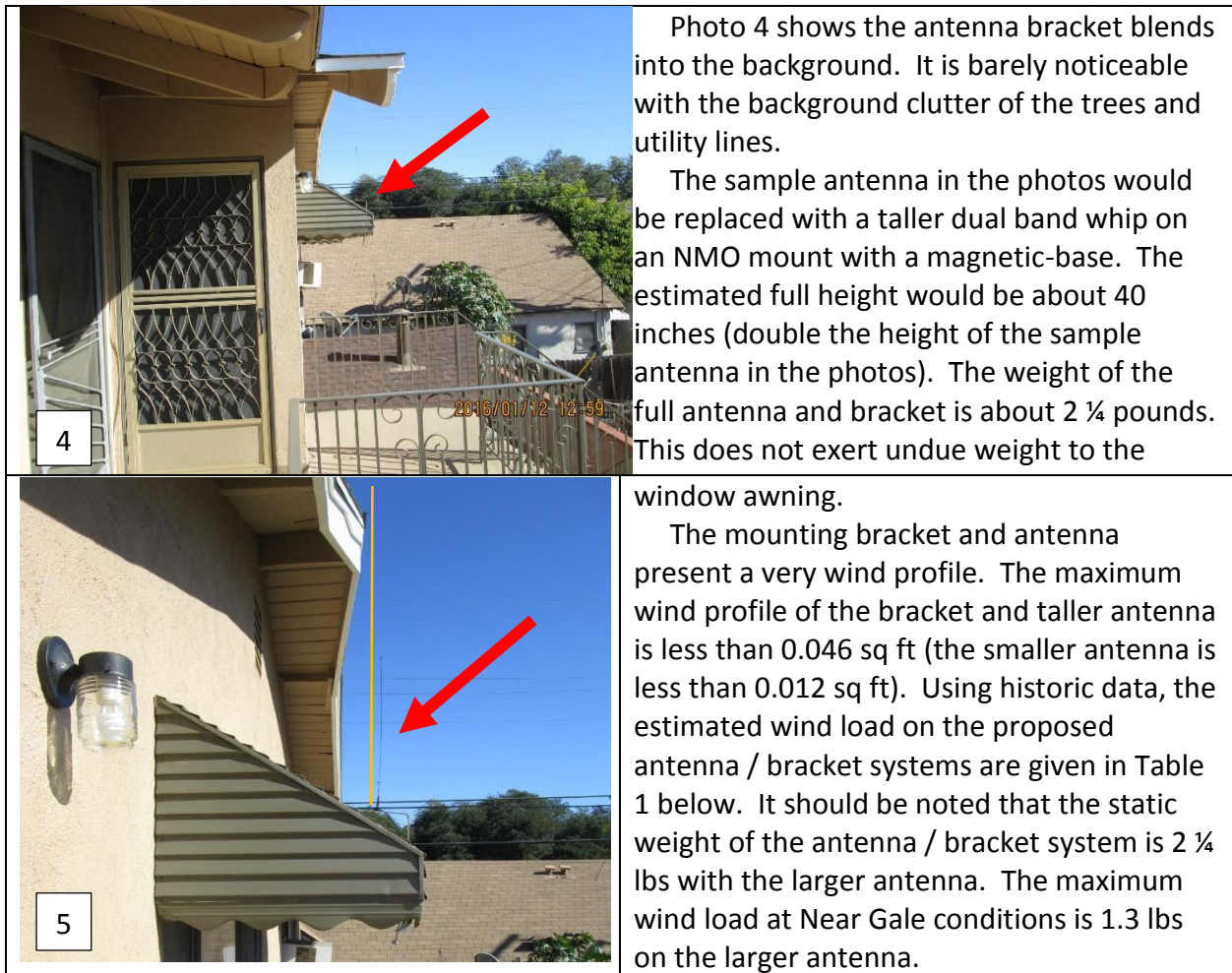
The General Situation: An urban second floor apartment with no ability to set up antennas on the roof, railings, or grounds of the building. Any antenna installation must be temporary and should not involve any drilling or altering of the existing building or parts of the building.

Possible Solution: Clamping a steel bracket to a window awning to enable the use of a magnetic-based mobile antenna mount (see red arrow in photos below).



The bracket clamps to the window awning. It does not require any drilling and is NOT fastened to the awning permanently. This makes it a temporary / portable installation. The hope is this type of installation poses no changes to the building structure or fixtures.

It has a very low visual profile (see Photo 1 from about horizontal distance of 40 ft). Photos 2 & 3 show the bracket does not overhang the porch. So it does not present any obstruction or safety hazard to people using the stairs.



Weather History	Table 1: Wind loads given in lbs/sq ft of antenna surface			
	Mini-magmount wind load		NMO wind load	
	min	max	min	max
Av wind speed Alhambra: 1.5 mph	0.00062	0.00301	0.001635	0.010187
Max sustained wind speed: 6.9 mph	0.009171	0.044539	0.007941	0.04947
In late 2015-early 2016, NWS forecasted wind gusting to 35 mph in the San Gabriel Valley	0.081028	1.198799	0.213737	1.331507






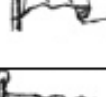




Costs:

18 GA metal strave 1 ¼" W X 36" L	\$2.96
10-20 thumb screws	\$1.18
10-20 nuts	\$1.18
Spray paint	\$3.87



Beaufort Wind Table for Land Effects

MEWS weather observers should set up a flag near their operating position. Use the Description and flag references to estimate the wind speed. Report the range of wind speeds from the chart rather than a specific number.

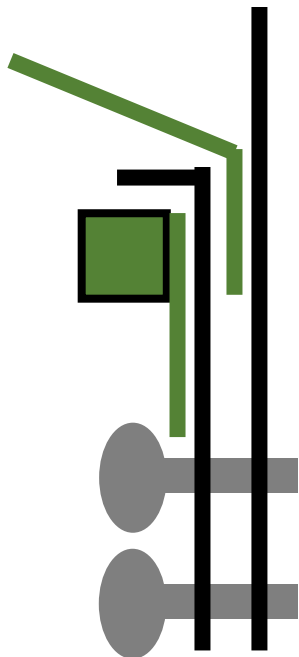
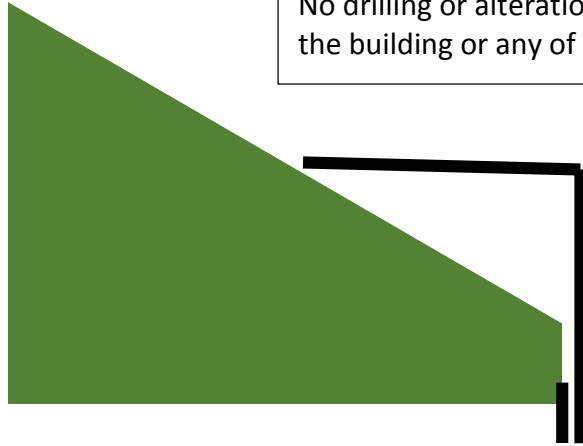
Description	Flag	WMO term	Mph	Km/ hr	Knots	Force	Psu lbs/sq ft (Kg/sq m)
			Report wind speed in knots to flight crews				
Calm; smoke rises vertically	---	Calm	<1.0	<1.5	<0.9	0	0.006266 (0.003059)
Smoke indicates wind; flag hangs limp, wind vanes do not move		Light Air	1-3	1.5-6	1-3	1	0.02924 (.01428)
Wind felt on face, leaves rustle, flag stirs, wind vanes move		Light breeze	4-7	6-12	4-6	2	0.142 (0.6934)
5 Knots maximum tailwind for helicopter take-off							
Leaves and twigs in constant motion; flag occasionally extends		Gentle Breeze	8-12	12-20	7-10	3	0.3759 (1.835)
10 Knots ideal for helicopter flight operations							
Dust and paper fly; small branches move; Flag flaps		Mild Breeze	13-18	21-29	11-16	4	0.8145 (3.977)
small leafy trees begin to sway; white crested wavelets appear on lakes/ponds; Flag ripples		Fresh Breeze	19-24	30-39	17-21	5	1.504 (7.342)
20 Knots maximum gusts for helicopter flight operations							
Large branches move; wires whistle; umbrellas hard to use; Flag snaps		Strong Breeze	25-31	40-50	22-27	6	2.485 (12.13)
Whole trees sway; hard to walk; Flag extended		Near Gale	32-38	51-61	28-33	7	3.822 (18.66)
Twigs and small branches broken; cars veer on roads; Flag tatters		Gale	39-46	62-74	34-40	8	5.597 (27.33)
Slight structural damage occurs (roof shingles blow off)		Strong Gale	47-54	75-87	41-47	9	7.769 (37.93)
45 Knots maximum winds for helicopter flight operations							
Trees broken or uprooted, considerable damage to buildings		Storm	55-63	88-101	48-55	10	10.53 (51.39)
Wide spread damage caused	---	Violent Storm	64-72	102-114	56-63	11	13.78 (67.3)
	---	Hurricane	>73	>115	>63	12	>13.78 (>67.3)

Disclaimer: Use of the pressure data to calculate tower/antenna wind loads is at your own risk. The RTC-TH and HSØZHM assume no liability for the use of this data. Pressure values are the upper limits for a wind category.

Antenna Bracket

Sketch (not to scale)

A magnetic-based antenna mount is a very temporary and portable antenna for the apartment. No drilling or alterations of any kind are needed on the building or any of its fixtures.



The bracket is clamped to the frame of the window awning. The smaller backing plate is slipped between the upper awning piece and the face panel. The upper bracket is secured by two thumb screws. The top end of the upper bracket rests on the top surface of the awning. A foam chaffing pad prevents the end of the bracket from rubbing on the awning.

The thumb screws are treated with Loc-tite to prevent the nuts from loosening due to vibration.

The bracket is spray painted to match the aluminum awning as closely as possible.