Which design software suitable for Horn Antenna design?

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Author	Message

akmsali
Newbie level 4

Joined: 29 Dec 2003
Posts: 5
Points: 2.00
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14 Jan 2004 5:36

horn antenna design

quote

Dear Fellows,

I am working on the design of a horn antenna working around 8 to 9 GHz of frequency range. Can u recommmend me some antenna design softwares where I can design Horn antenna, simulation can be done, its radiation pattern, its beamwidth, its gain can shown on the software. Waiting for an early reply.

Thanking You

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flatulent
Super Moderator

Joined: 19 Jul 2002
Posts: 4910
Helped: 327
Location: Middle Earth
Points: 17674.34
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14 Jan 2004 6:16

horn design software

quote

If this is a simple design, there are many cook book formulas and examples.

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borich_03
Full Member level 2

Joined: 07 Oct 2003
Posts: 145
Helped: 14
Points: 27.81
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14 Jan 2004 8:03

horn antenna design software

quote

Good programme for such problems is HFSS from Ansoft. With this product you can find some Horn Antenna examples.

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Kit-the-great
Full Member level 3

Joined: 30 Mar 2002
Posts: 176
Helped: 1
Location: Russia
Points: 1521.61
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14 Jan 2004 8:36

design horn antenna

quote

Most of the 3D EM-simulators can be used for this problem:
@nsoft H/F/S/S
CST MWS
IE3D
FEKO
FEML(at)b
and others.

Best regards,
Kit-the-great

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yuyu
Full Member level 3

Joined: 27 Mar 2002
Posts: 187
Points: 119.15
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14 Jan 2004 9:33

horn antenna design

quote

The best softwares for horn design in commerce in my opinion are WASP-NET or MICIAN.

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Kit-the-great
Full Member level 3

Joined: 30 Mar 2002
Posts: 176
Helped: 1
Location: Russia
Points: 1521.61
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14 Jan 2004 10:54

cst anten design software

quote

But the MICIAN and WASP-NET works only with simple-aperture-type horns. For ex. the 'flared-out' corrugated horn with grooved aperture disk can't be simulated with this progs.

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yuyu
Full Member level 3

Joined: 27 Mar 2002
Posts: 187
Points: 119.15
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14 Jan 2004 11:21

horn antenna desing

quote

I am not sure about MICIAN but with WASP-NET it is possible simulate grooved aperture because it uses Mom metod to analise the exetrnal of the horn.

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goxy
Full Member level 5

Joined: 25 Jul 2002
Posts: 268
Helped: 1
Points: 438.09
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14 Jan 2004 11:32

4nec2 corrugated horn

quote

Firsly you must know theory very well, it's not so easy like you think. Here you excellent :sm28: book http://www.ece.rutgers.edu/~orfanidi/ewa , in chapter 17 is explained horn antenna with Matlab examples. Now you can calculate radiation patern.
For impedance analyze you need EM softwer, Wipl-D is the best for problems like this but it's a comercial program.
Here you one good free program 4nec2 on http://www.qsl.net/wb6tpu/swindex.html
Excitation monopole is in the centre of waveguide and you'll have reactance abot 100oms, with moving monopole reactanse can be neutalized.

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Kit-the-great
Full Member level 3

Joined: 30 Mar 2002
Posts: 176
Helped: 1
Location: Russia
Points: 1521.61
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16 Jan 2004 7:54

tables easy horn design

quote

To yuyu: I means the corrugation around the horn, that produce the surface waves. Also, I don't understand, how to simulate the lens in horn aperture with WASP-Net ?

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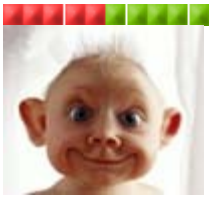
yingyang
Full Member level 4



Joined: 26 Dec 2002
Posts: 217
Points: 31.73
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16 Jan 2004 13:22

antenna design software

quote

You may like to use hfss to try....

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khouly
Advanced Member
level 5

Joined: 20 Oct 2003
Posts: 2479
Helped: 343
Location: EGYPT
Points: 1519.46
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🗋 21 Jan 2004 7:09

simple horn software

quote

i think hf$$ is very good in 3d electromagnetic simulation ,and very good accuracy , but time consuming , and need huge memory

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sergio mariotti
Advanced Member
level 1

Joined: 22 Dec 2003
Posts: 468
Helped: 43
Location: Italy
Points: 1577.50
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24 Jan 2004 14:57

antenna design program

quote

There are some accurate and exaustive software collected and edited by Cayrle Sletten. They are old fashioned DOS and Fortran software, but i think they are now for free. Try to ask directly to Mr. Sletten, he is now retaired, find it's home page on Internet.
The soft. collection may calculate co-Pattern, cross-patten, Phase center, etc. and also may design the corrugations mechanical dimensions. the soft. involve the design of both corrugated or smooth wall conical or piramidal horns.

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cris
Junior Member level 1

Joined: 14 Nov 2001
Posts: 18
Points: 4.00
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25 Jan 2004 12:44

the best antenna design software?

quote

You can use SABOR -Leandro de Haro (leandro(at)gr.ssr.upm.es).

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axel
Newbie level 2

09 Mar 2004 17:09

tables ease horn design

Joined: 09 Mar 2004
Posts: 2
Points: 9.00
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quote

I think you can use many different programs to analyze horn antennas. HFSS is probably tempting with its interface, but it is very time and memory consuming, at least for the projects I've done with it.

There are several free programs, but the only problem is that you don't get technical support and quality manuals, so you would spend a lot of time to learn how to use those programs.

I recommend WIPL-D, I am using it regularly. It is a general 3D solver, and it analyzes horns with ease. There is a professional version called WIPL-D Pro, but there is also a low-cost version that costs couple of hundred $.

Maybe I sound emotional, but WIPL-D has pulled me out of some serious design trouble in the past. By the way, I am not working for those guys, if you are wondering.

Regards,
Axel

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RollingEEE
Full Member level 4

Joined: 25 Mar 2006
Posts: 208
Helped: 4
Location: Bangladesh
Points: 197.56
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25 Sep 2008 10:39

what is the best antenna design software

quote

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flatulent wrote:

If this is a simple design, there are many cook book formulas and examples.

Can you suggest any cookbook's for formulas? I am getting stuck

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e_m_c
Full Member level 1

26 Sep 2008 8:57

horn design antenna

Joined: 07 May 2008
Posts: 104
Helped: 15
Location: Land
Points: 453.13
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quote

Just an example of corresponding simulation with Method of Moments:
EMC Studio: Horn Antenna modeling

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t25
Member level 3

Joined: 12 Jul 2008
Posts: 59
Points: 206.50
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28 Sep 2008 17:30

corrugated horn design software

quote

CST is good simulation. It is macro to help you.

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paow
Member level 1

Joined: 09 Jun 2008
Posts: 35
Helped: 2
Location: Thailand
Points: 116.50
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30 Sep 2008 14:06

wipl-d

quote

CST has a graphical interface which is similar to that of HFSS and can be use in almost the same way. But CST is more suited for running simulation over a wide frequency range because the software's time domain solver runs faster with a wider frequency range.

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Azulykit
Advanced Member
level 3

Joined: 18 Feb 2007
Posts: 852
Helped: 103
Location: All over the Map.
Points: 3279.82
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01 Oct 2008 3:34

wipl-d example

quote

HFSS is clearly capable of dealing with this as is noted numerous times above.

Micorwaves March 1966 has an excellent cookbook for horns "Tables Ease Horn Design"

Tom Milligan Scales for Rectangular Horns IEEE Antennas and Propagation Magazine Oct 2000 is another reference that may be helpful.

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