Near-field Antenna Range Configuration Worksheet

Customer: _____
Location: _____
Customer contact: _____
Telephone: _____e-mail: _____
Agilent Field Engineer: _____ Office: _____
Telephone: _____e-mail: _____
Agilent Systems Engineer: _____ Office: _____
Telephone: _____e-mail: _____
Date:_____

How to use this worksheet
This worksheet is intended to be a guide for discussions between local Agilent Field Engineers, and a potential customer about their near-field antenna measurement system needs. This worksheet asks the questions an Agilent Systems Engineer would need to know to design a customized antenna measurement system to meet a customer's unique requirements.

Please fill out this form as completely as possible, and also describe any unique features of the antenna location of the near-field system, or additional requirements not covered in this worksheet. A sketch of the proposed or existing location and layout is always very helpful.

With the information provided in this worksheet, an Agilent Antenna Systems Engineer will configure an antenna measurement system to meet the needs and requirements as specified in this worksheet. A quotation can be prepared which will include an instrumentation block diagram, a list of all the instrumentation components included in the RF sub-system, and price. Occasionally, additional discussions will be necessary between the Agilent Antenna Systems Engineer and the customer to clarify the understanding of the system requirements and configuration.

What is the objective for this system?

- ☐ Developing a new near-field antenna range
- ☐ Upgrading an existing near-field antenna range with new equipment
- ☐ Other:

_____

What is important to the customer?
It is helpful (but not necessary) to rank the top three in order of importance

- ☐ A "turn-key" or complete measurement solution
- ☐ Measurement automation software
- ☐ Measurement productivity / throughput
- ☐ Multiple-channel, multiple-frequency measurements
- ☐ Accurate measurements
- ☐ Upgrading old instrumentation to newer more reliable system
- ☐ Economical price due to budget constraints
- ☐ System uptime and reliability
- ☐ On-site installation, training and support
- ☐ Ease of use
- ☐ Other:

_____

What type of near-field measurement system?

- ☐ Planner
- ☐ Cylindrical
- ☐ Combination planner/cylindrical
- ☐ Spherical
- ☐ Uncertain; need application assistance

What is the required frequency of operation? (in GHz)

- ☐ 0.1 - 3
- ☐ 2-18
- ☐ 18-26.5
- ☐ 26.5-50

Millimeter:

- ☐ 26.5-40
- ☐ 33-50
- ☐ 40-60
- ☐ 50-75
- ☐ 75-110
- ☐ Other: _____

How many frequencies are to be measured? _____

Types of antennas to be tested

- ☐ Space based communications satallite antennas
- ☐ High gain reflector antennas
- ☐ Omni directional antennas
- ☐ DBS antennas (flat planner array)
- ☐ Horn antennas
- ☐ Patch antennas

Weight _____ Dimensions _____

Description of the antenna(s):

_____
_____
_____
_____
_____

_____
_____

Approximate gain (dBi): _____

What is the polarization of the test antennas?

- ☐ Linear polarized antennas
- ☐ Circularly polarized antennas
- ☐ Both linear and circularly polarized antennas
- ☐ Unknown

What are the maximum number of test channels required?
(Usually determined by the number of test ports on the antenna)

- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four
- ☐ Other: _____

Physical dimensions of test antennas
Width:_____ units:_____
Height: _____units:_____
Weight: _____units:_____
(A sketch of the antennas would be very helful)

What types of antenna patterns are required?

- ☐ Holographic projections
- ☐ Co-polarized principle plane patterns
- ☐ Gain measurements
- ☐ Cross-polarized principle plane patterns
- ☐ Three dimensional plots
- ☐ Contour patterns
- ☐ Pulsed antenna measurements (usually active element arrays)
- ☐ Other: _____

_____
_____
_____
_____

Are there any specific requirements for accuracy?

- ☐ Gain accuracy: _____
- ☐ Sidelobe accuracy:_____ dB at _____dB below peak
- ☐ Crosspolarized response accuracy: _____dB at _____dB below peak
- ☐ Pointing accuracy: _____
- ☐ Other:

_____

- ☐ The accuracy requirements are unknown

What level of system integration is desired?

- ☐ Developing a new near-field antenna range
- ☐ □ Desire a complete "turn-key" system
- ☐ □ Desire only components of a near-field system
- ☐ □ Select the components desired:
- ☐ □ Near-field scanners
- ☐ □ Near-field probes
- ☐ □ Aquisition and analysis software
- ☐ □ Microwave receiver
- ☐ □ Microwave source
- ☐ □ System engineering services
- ☐ □ System integration services

- ☐ Upgrading an existing near-field system with new equipment

Select the components desired:

- ☐ □ Near-field scanners
- ☐ □ Near-field probes
- ☐ □ Acuisition and analysis software
- ☐ □ Microwave receiver
- ☐ □ Microwave source
- ☐ □ System engineering services
- ☐ □ System integration services

☐ □ Uncertain; desire application assistance with this area

Is there any existing Agilent or HP equipment to be used in this facility?

- ☐ None
- ☐ Yes (please specify): _____
_____
_____
_____
_____
_____

Is any any other manufacturers equipment to be used in this facility?

- ☐ None
- ☐ Yes (please specify): _____
_____
_____
_____

Any special types of measurement requirements?

- ☐ Pulsed operation of the antenna
  Usually for active array antennas where the antenna can only operate in pulsed mode
- ☐ Aperature illumination required
  Usually used for active array antennas to allow locating defective elements