Far-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 far-field antenna measurement system needs. This worksheet asks the questions an Agilent Systems Engineer would need to know to specify 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 far-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?

- □ Building a new antenna range
- □ Upgrading an existing 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: _____

Do you have a preferred software provider preference?

- □ NSI – Nearfield Systems Inc.
- □ Orbit/FR
- □ MI-Technologies
- □ SPC – System Planning Corporation
- □ Other _____

What type of measurement facility / range?

- □ Outdoor antenna range
- □ Indoor antenna range
- □ Compact antenna test range (indoor facility with large metal reflector)

□ Near-field antenna test system
(mechanically scans a probe very close to the antenna)

□ Uncertain; need application assistance

Antenna Range Dimensions

(A sketch of the existing or proposed facility would be very helpful)

Distance from transmit location to receive location: _____ meters

Distance from control room (instruments) to receive location: _____meters

Distance from control room (instruments) to transmit location: _____ meters

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

□ 0.1- 3 □ 2-18 □ 18-26.5 □ 26.5-50

□ Millimeter: _____

□ Other: _____

What type of automation and control is desired?

□ Manual only

□ Manual with ability to upgrade to automated at a future date

□ Automated Prefer: □ Personal computer □ Workstation

What type of antenna(s) are going to be measured?
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: _____

What types of antenna patterns are required?

□ Co-polarized principle plane patterns

□ Gain measurements

□ Cross-polarized principle plane patterns

□ Elipticity or axial ratio patterns (for circularly polarized antennas only)

□ Pulsed antenna measurements (usually active element arrays)

□ Other: _____
_____
_____
_____
_____
_____

Are ellipticity or axial-ratio measurements required to be performed?
(This question is relevant only if circularly polarized antennas are being measured)

□ Yes; (this will require rotating a linear source antenna)

□ No

□ Uncertain

What dynamic range is desired for the antenna patterns?

□ 40 dB

□ 60 dB

□ Other: _____ dB

Are there any specific requirements for accuracy?

□ Gain accuracy: _____

□ Side lobe accuracy:_____ dB at _____dB below peak

□ Cross polarized response accuracy: _____dB at _____dB below peak

□ Pointing accuracy: _____

□ Other: _____

□ The accuracy requirements are unknown

Is amplitude and/or phase data required?

□ Amplitude only

□ Amplitude and phase

□ Unknown

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

□ None

□ Yes (please specify):
_____
_____

_____
_____

Is any other manufacturer's equipment to be used in this facility?

□ None

□ Yes (please specify):
_____
_____
_____
_____

What type of positioning system is available or required?

□ The positioning system is customer supplied or existing

Positioner model number: _____

Power Amplifier Unit model number: _____

Positioner Controller model number: _____

Is an RF rotary joint available in the positioner? □ Yes □ No □ Unknown

Are slip rings available in the positioner? □ Yes □ No □ Unknown

Is a polarization positioner at the source antenna? □ Yes □ No □ Unknown

Is a rotary joint available in the source positioner? □ Yes □ No □ Unknown

□ Positioning system is to be supplied as part of the system

What type of transmit source antenna?

□ Customer supplied or existing approximate gain (dBi): _____

□ To be supplied as part of the system Frequency of operation (GHz):
_____

If an outdoor range, is a weatherproof enclosure available for the microwave source?

□ Yes □ No □ Unknown

Additional Information or Requirements
Please convey additional information about this facility, or define additional requirements. A reminder; a sketch of the antenna range layout would be very helpful!