Network Customer Support

The Network Customer Support Plan identifies the steps to be followed in resolving the Customer’s concern.

The resolution efforts will follow these levels of contact:

- **Level One Contact** – Factory Authorized Service Center.
- **Level Two Contact** – Comtech EF Data Customer Support.
- **Level Three Contact** – Network Test and Field Support

**Procedural Steps**

<table>
<thead>
<tr>
<th>Step</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Customer raises a concern with the <strong>Level One Contact</strong>.</td>
</tr>
<tr>
<td>2</td>
<td>The <strong>Level One Contact</strong> will perform <strong>Hardware</strong> repairs and <strong>Network Operations</strong> troubleshooting in accordance with the Comtech EF Data Service Center agreement.</td>
</tr>
<tr>
<td>3</td>
<td>If the <strong>Level One Contact</strong> is unable to resolve the concern, then the <strong>Level One Contact</strong> will inform the <strong>Level Two Contact</strong> of the concern in accordance with the instructions found within the attached Comtech EF Data Customer Support Department’s document.</td>
</tr>
<tr>
<td>4</td>
<td>The <strong>Level Two Contact</strong> will enter the concern into the Comtech EF Data database and determine whether the concern is a <strong>Hardware</strong> concern or a <strong>Network Operations</strong> concern.</td>
</tr>
<tr>
<td>5</td>
<td>The <strong>Level Two Contact</strong> will interface with the <strong>Level One Contact</strong> and provide the appropriate hardware support and enter all correspondence into the Comtech EF Data database.</td>
</tr>
<tr>
<td>6</td>
<td>If the <strong>Level Two Contact</strong> determines that the concern is a <strong>Network Operations</strong> concern, then the <strong>Level Two Contact</strong> will inform the <strong>Level Three Contact</strong>.</td>
</tr>
<tr>
<td>7</td>
<td>The <strong>Level Three Contact</strong> will interface with the <strong>Level One Contact</strong> and provide the appropriate support and enter all correspondence into the Comtech EF Data database.</td>
</tr>
<tr>
<td>8</td>
<td>If the <strong>Level Three Contact</strong> determines that there is a <strong>Hardware</strong> failure then the <strong>Level Three Contact</strong> will inform the <strong>Level Two Contact</strong>. Go to Step 5.</td>
</tr>
</tbody>
</table>
Customer

Yes

Midas Network is functioning properly?

No

Level One Contact is notified Authorized Factory Service Center

Resolved by Hardware repair or Network Operations troubleshooting?

No

Level Two Contact is notified CEFD Customer Support

Hardware or Network Operations issue?

Hardware

Level Three Contact is notified CEFD Network Test and Field Support

Hardware or Network Operations issue?

CEFD Customer Support provides HW support

Hardware or Network Operations issue?

CEFD Network Test and Field Support provides Network Operations support

*Note: If equipment was purchased directly from Comtech EFData (not through a Factory Authorized Service Center), then CEFD Customer Support will be the initial point of contact.
See the Comtech EF Data website at http://www.comtechefdata.com for contact information for a Factory Authorized Service Center. Contact the Factory Authorized Service Center for:

- Product support
- Information on upgrading or returning a product

Contact the Comtech EF Data Customer Support Department for:

- Product support or training
- Information on upgrading or returning a product

A Customer Support representative may be reached at:

Comtech EF Data  
Attention: Customer Support Department  
2114 West 7th Street  
Tempe, Arizona 85281 USA

480.333.2200 (Main Comtech EF Data Number)  
480.333.4357 (Customer Support Desk)  
480.333.2500 FAX

or, E-Mail can be sent to the Customer Support Department at:

service@comtechefdata.com

1. To return a Comtech EF Data product (in-warranty and out-of-warranty) for repair or replacement:

2. Request a Return Material Authorization (RMA) number from the Comtech EF Data Customer Support Department.

3. Be prepared to supply the Customer Support representative with the model number, serial number, and a description of the problem.

4. To ensure that the product is not damaged during shipping, pack the product in its original shipping carton/packaging.

5. Ship the product back to Comtech EF Data. (Shipping charges should be prepaid.)
Contact the Comtech EF Data Network Test and Field Support

- System level Network Operations support
- Information on upgrading Network Operation software
- Reporting comments or suggestions concerning manuals

A Network Test and Field Support representative may be reached at:

Comtech EF Data  
Attention: Network Test and Field Support  
2114 West 7th Street  
Tempe, Arizona 85281 USA

480.225.2200 (Main Comtech EF Data Number)  
480.225.3693 (Network Test and Field Support)  
480.333.2161 FAX

or, E-Mail can be sent to the Network Test and Field Support Department at:

mailto:midasfss@comtechefdata.com

Contact us via the web at www.comtechefdata.com.
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Site Survey Report, Operator’s Guide, Rev. 0
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About this Manual

This operator’s guide provides a suitable location for the antenna and the indoor equipment data to be recorded.

Conventions and References

Metric Conversion

Metric conversion information is located on the inside back cover of this manual. This information is provided to assist the operator in cross-referencing English to Metric conversions.

Trademarks

Product names mentioned in this manual may be trademarks or registered trademarks of their respective companies and are hereby acknowledged.

Reporting Comments or Suggestions Concerning this Manual

Comments and suggestions regarding the content and design of this manual will be appreciated. To submit comments, please contact the Comtech EF Data Technical Publications Department: techpub@comtechefdata.com
Disclaimer

Comtech EF Data has reviewed this manual thoroughly in order that it will be an easy-to-use guide to your equipment. All statements, technical information, and recommendations in this manual and in any guides or related documents are believed reliable, but the accuracy and completeness thereof are not guaranteed or warranted, and they are not intended to be, nor should they be understood to be, representations or warranties concerning the products described.

Further, Comtech EF Data reserves the right to make changes in the specifications of the products described in this manual at any time without notice and without obligation to notify any person of such changes.

If you have any questions regarding your equipment or the information in this manual, please contact either:

Comtech EF Data Customer Support Department at: service@comtechefdata.com
Comtech EF Data Technical Publications Department at: techpub@comtechefdata.com
1. Introduction

Introduction

The goal of the Site Survey is to determine a suitable location for the antenna and the indoor equipment.

Each Site Survey Report will include the following information:

<table>
<thead>
<tr>
<th>Site</th>
<th>Site contact, Site latitude, longitude, and elevation, accommodations and access for equipment and installation vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna</td>
<td>Exact Location of the Antenna and type of mount</td>
</tr>
<tr>
<td>Arc</td>
<td>Satellite arc clearance analysis and Antenna look angles</td>
</tr>
<tr>
<td>Status</td>
<td>Indoor Equipment location including status of any existing equipment</td>
</tr>
<tr>
<td>Path</td>
<td>Path of the Inter-facility Link (IFL) cable runs</td>
</tr>
<tr>
<td>Grounding</td>
<td>Provision for grounding of Indoor Unit, RF Terminal and Antenna to station ground</td>
</tr>
<tr>
<td>Protection</td>
<td>Provision for grounding protection against lightning damage to lightning ground</td>
</tr>
<tr>
<td>Power</td>
<td>Provision for supply of primary power</td>
</tr>
<tr>
<td>Risk</td>
<td>Possible risk of voltage surges from the customer interface</td>
</tr>
<tr>
<td>Transportation</td>
<td>Transportation, access, accommodation, and any special site requirements/considerations</td>
</tr>
<tr>
<td>Sketches</td>
<td>Sketches and photographs</td>
</tr>
<tr>
<td>RF Interferences</td>
<td>RF interference analysis/measurements as needed to determine if RFI exists that may interfere with the earth station's transmit and receive signals</td>
</tr>
</tbody>
</table>
This page is intentionally left blank.
2. Site Information

Site Address and Contact Name

Customer Name: ____________________________________________

Site Name: ___________________ Site Number: _____________

Date of Survey: __________________________

Street Location: __________________________________________

Shipping address (if different from above): ______________________

Primary Site Contact: ______________________________________

Telephone: _____________________________________________

Alternate Contact: _____________ Telephone: ________________

Weekend Access: Yes _____ No_____ Evening Access: Yes _____ No_____ Escort Required: Yes _____ No_____
Site Location Status:

Proposed (undisturbed space) ...................................................... Yes ____ No ____

Ready for Preparation (cleared, no grading) .......................... Yes ____ No ____

Prepared (graded, access road) ................................................... Yes ____ No ____

Is there an existing facility building? ................................. Yes ____ No ____

Site Improvement Requirements:

Full Clearing Required ............................................................ Yes ____ No ____

Grading, Shaping and Access Road Required

Specify: ________________________________

Utilities required (water, electricity, telephone, etc.)

Specify: ________________________________

New Facility Building Required ............................................. Yes ____ No ____

Antenna Foundation Required ............................................... Yes ____ No ____
General Site Description:

______________________________________________________________________________________________

______________________________________________________________________________________________

______________________________________________________________________________________________

______________________________________________________________________________________________

______________________________________________________________________________________________

Station Latitude, Longitude, and Elevation

From the GPS Receiver:

Latitude: ____________                    Longitude: ____________________

Elevation: ____________ feet/meters

Area Magnetic Deviation: ____________ (from Chart)

________________________ (actual if available)
Local Transportation, Access and Accommodations

Nearest Town/Airport: ____________________________

Nearest Highway: ____________________________

Transportation to/from site:

Mode #1 - Surface:
Roadway (by car, truck, etc.)
Type: ____________________________
Distance to/from: ____________________________

Mode #2 – Air:
Airplane
Type/Airline: ____________________________
Distance to/from: ____________________________

Frequency of scheduled flights (i.e. once a day, etc.): ____________________________

Full fare (approximately): ____________________________

Living Accommodations:
Type: ____________________________
Accommodations available for how many people? ____________________________

<table>
<thead>
<tr>
<th>First Choice</th>
<th>Second Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Hotel:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>Phone:</td>
<td></td>
</tr>
<tr>
<td>Rates:</td>
<td></td>
</tr>
</tbody>
</table>
The following table identifies the test equipment required to perform a RFI Survey for either Ku-Band and C-Band surveys.

### Required Test Equipment

<table>
<thead>
<tr>
<th>Description</th>
<th>Function</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera</td>
<td>Document selected location for antenna and indoor equipment</td>
<td>Polaroid or equivalent</td>
</tr>
<tr>
<td>Spectrum Analyzer</td>
<td>C-Band and Ku-Band RFI Survey</td>
<td>For C-Band: HP8561E For Ku-Band: HP8593E or equivalent</td>
</tr>
<tr>
<td>C-Band standard-gain feed horn</td>
<td>C-Band RFI Survey</td>
<td>Seavey Engineering Associates, SGA-20 or equivalent</td>
</tr>
<tr>
<td>C-Band LNB</td>
<td>C-Band RFI Survey</td>
<td>Commercial LNB.</td>
</tr>
<tr>
<td>Ku-Band standard-gain feed horn</td>
<td>Ku-Band RFI Survey</td>
<td>Seavey Engineering Associates, SGA-110 or equivalent</td>
</tr>
<tr>
<td>Ku-Band LNB</td>
<td>Ku-Band RFI Survey</td>
<td>Commercial LNB.</td>
</tr>
<tr>
<td>24 VDC Power Supply</td>
<td>C-Band and Ku-Band RFI Survey</td>
<td>Adequate Power Supply for selected LNB.</td>
</tr>
<tr>
<td>DC Power leads</td>
<td>C-Band and Ku-Band RFI Survey</td>
<td>14 AWG wire</td>
</tr>
<tr>
<td>Adapter, BNC (male) to Double Banana Plug</td>
<td>C-Band and Ku-Band RFI Survey</td>
<td>Pomona, P.N. 1296 or equivalent</td>
</tr>
<tr>
<td>Adapter, BNC (female) to SMA (male)</td>
<td>C-Band and Ku-Band RFI Survey</td>
<td>Amphenol, P.N. 901-166 or equivalent</td>
</tr>
<tr>
<td>15 VDC Bias Tee (installed at Spectrum Analyzer input)</td>
<td>C-Band and Ku-Band RFI Survey</td>
<td>Mini-Circuits, P.N. ZFBT-4R2G or equivalent</td>
</tr>
<tr>
<td>RF Cable</td>
<td>C-Band and Ku-Band RFI Survey</td>
<td>RG 59/U Type (Trade number 9659) cable with Type F (male) to SMA (female) or equivalent</td>
</tr>
<tr>
<td>Adapter, Type N (male) to SMA (male)</td>
<td>C-Band and Ku-Band RFI Survey</td>
<td>Amphenol, P.N. 901-292 or equivalent</td>
</tr>
</tbody>
</table>
This page is intentionally left blank.
**4. Antenna**

**Antenna Location**

The major factors that must be considered when determining the exact antenna location include:

- Locate an area, which has a clear unobstructed view of the satellite
- Identify potential RF and EMI interference sources and methods of protection

Type of Antenna (Mount):

- Ground Mount (Pad) .............................................. Yes ____ No ____
- Ground Mount (In ground Mast) ......................... Yes ____ No ____
- Non-Penetrating Mount....................................... Yes ____ No ____
- Penetrating Mount............................................. Yes ____ No ____
- Provision for standard ground.......................... Yes ____ No ____
- Provision for lightning ground.......................... Yes ____ No ____
- Estimated lightning ground resistance ............... $<1\,\Omega$ ____ $>1\,\Omega$ ____
Sketch North-South View:

NORTH
Photograph North-South View:

Attach Photographs here

N-S
Photograph NE-SW View (if potential obstruction exists):

Attach Photograph here
Photograph NW-SE
View (if potential obstruction exists):

Attach photograph here

NW-SE
1. Is sufficient ground area available for antenna foundation, staging and installation areas? (Refer to the Site Preparation Document). Yes _____ No _____

   Explanation: __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

2. Is excavation required? Yes _____ No _____

   Explanation: __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

3. What does excavation cut through (e.g., paved area, parking lot, etc.)?

   Explanation: __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

4. Is security fence necessary? Yes _____ No _____
5. Can manufacturer recommended fence-antenna clearances be met?

Yes ____ No ____.

Explanation: __________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

6. Is there any indication of unstable ground (swampy ground, permafrost, etc.)?

Yes ____ No ____

7. The foundation design will be included in the Site Preparation Document.

Explanation: __________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

8. Is Ground Mount feasible? .............................................................Yes ____ No ____

Explanation: __________________________________________________________

_____________________________________________________________________

_____________________________________________________________________
1. Is sufficient roof area available for antenna mount, staging and installation areas (see manufacturer’s specification for minimum required space)? Yes ____ No ____

   Explanation:__________________________________________________________

   _________________________________________________________________

   _________________________________________________________________

2. Is there an indication that the antenna (at high winds) could overload the roof? Yes ____ No ____

   If Yes, the Customer must obtain the services of a Structural Engineer to provide a detailed analysis for roof mount requirements. This analysis shall be based on, but not limited to, the foundation specification of the antenna and the structural drawings of the roof.

   Explanation:__________________________________________________________

   _________________________________________________________________

   _________________________________________________________________

   _________________________________________________________________

3. Type of Roof:
   a) Flat: _____ Made of_________________________________________________

   b) Peak: _____ Made of________________________________________________

   c) Slope Angle: _________ Ridge above Ground: _________ (feet/meters)

   d) Roof Height above Ground _____(feet/meters)
Other Antenna Mounts

Antenna mounting on industrial structures (e.g., oil rigs): ................. Yes ___ No ___

Explanation: _______________________________________________________________

_______________________________________________________________

_______________________________________________________________

_______________________________________________________________

Required Equipment for Antenna Installation

Is additional labor available to assist with antenna assy? ... No ____ Yes ___

Contact person to arrange additional labor: __________________________
Phone: _______________

Crane Operator Contact: ________________ Phone: ________________

Fork Lift Contact: ________________ Phone: ________________

Special Considerations: ____________________________________________

_______________________________________________________________

_______________________________________________________________

_______________________________________________________________

_______________________________________________________________
### Satellite Accessibility

#### Satellite Identification

<table>
<thead>
<tr>
<th>Satellite Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Satellite Longitude</td>
<td></td>
</tr>
<tr>
<td>Satellite Operator</td>
<td></td>
</tr>
<tr>
<td>Satellite Operator Contact Phone Number</td>
<td></td>
</tr>
</tbody>
</table>
Site-specific Azimuth and Elevation angles for points on the satellite arc specified below can be calculated. The Azimuth angle includes adjustment for the site’s magnetic deviation (from true north). The Azimuth values below represent the direct magnetic compass reading.

<table>
<thead>
<tr>
<th>Satellite Arc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site-specific Azimuth and Elevation angles for points on the satellite arc specified below can be calculated. The Azimuth angle includes adjustment for the site’s magnetic deviation (from true north). The Azimuth values below represent the direct magnetic compass reading.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AZIMUTH</th>
<th>ELEVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Limit (For Satellite) (@____)</td>
<td>@____</td>
</tr>
<tr>
<td>Foundation Centerline (@____)</td>
<td>@____</td>
</tr>
<tr>
<td>West Limit (For Satellite) (@____)</td>
<td>@____</td>
</tr>
</tbody>
</table>

Is the view blocked for the above satellite arc No ____ Yes ____

If Yes list exceptions:

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________
## Visual Obstructions within the Satellite Arc

<table>
<thead>
<tr>
<th>Survey Location Position</th>
<th>For Satellite @ Long</th>
<th>Antenna View</th>
<th>Objects Viewed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AZ (corr)</td>
<td>EL.</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>West Limit</td>
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</tr>
</tbody>
</table>

* ADD PHOTOS FOR SATELLITE LINE OF SIGHT.

**NOTE:** Add comments for the whole ±90º from foundation North-South Center Line (East Limit - West Limit). If obstruction exists, specify Satellite Long, AZ (as measured) & EL, and provide photo.
Photograph of Visual
Obstructions within
the Satellite Arc

a) At __________ degrees Azimuth

(attach photograph here)
Photograph of Visual Obstructions within the Satellite Arc

b) At __________ degrees Azimuth

(Attach photograph here)
c) At __________ degrees Azimuth

(Attach photograph here)
d) At __________ degrees Azimuth

(Attach photograph here)
Photograph of Visual
Obstructions within
the Satellite Arc

e) At _________ degrees Azimuth

(Attach photograph here)
Radio Frequency
Interference Scan
(20° El)

On-site Radio Frequency Interference (RFI) measurements are recommended to evaluate potential interference present in the operating frequency band. The area of least interference should be selected for the Antenna installation. Special attention to RFI and EMI should be paid in the vicinity of busy roads, ports, airports, and any facilities using radar.
<table>
<thead>
<tr>
<th>AZ. (corr)</th>
<th>DESCRIPTION</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FREQUENCY</td>
<td>AMPLITUDE</td>
</tr>
<tr>
<td>00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
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<tr>
<td>60</td>
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<td>80</td>
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<tr>
<td>100</td>
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<tr>
<td>120</td>
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<tr>
<td>140</td>
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<tr>
<td>160</td>
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<td>320</td>
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<tr>
<td>340</td>
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</tbody>
</table>
Note azimuth and distance to potential intermittent or high-power out-of-band sources of interference that may be hard to measure, such as sea ports, airports, busy roads, radar installations, or other high-power line-of-sight transmitters. A separate detailed RFI test may be required for such locations. In the vicinity of radio transmitters and other potential sources of RFI, scan 0-360 azimuth for RF carriers.

Are there potential RFI sources in the vicinity: No ____ Yes ____

If “Yes” note whether there is sufficient area between the antenna and the potential source of interference for a shielding fence: No ____ Yes ____

Observations:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Sketch of RFI Shield Fence

NORTH
Comtech EF Data requests a plot of the transponder in use, showing the assigned bandwidth for the service. An electronic copy, like a .jpg, .wmf, .tif, or .gif, of the plot is recommended.
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Interfacility Link Cables

Provide a sketch of the IFL cable run from Antenna pad to indoor equipment including the following dimensions.

**Approximate length of interface cable route segments:**

Antenna to bldg. entrance: _______________ Feet ___________ Meters

Bldg. entrance to indoor equipment rack: ______Feet ___________ Meters

Total length: _______________ Feet _______________ Meters

Number of floors cable must traverse vertically: _______________________

1. Will conduit be required from the point of indoor entry to the equipment rack: Yes ____ No ____

Other:

_____________________________________________________________

Is there an existing cable conduit from antenna site to the building?

No ____ Yes____

If Yes, check conduit routing and provide following information:

Purpose of existing conduit(s): _______________________

No. of conduits: ________

*Note: 2-grounded conduits are recommended for the exclusive use of earth station power and signal cables.*
Outside Cable Routing:

Conduit: Type: ________ Size (dia.): ________ Length: __________

Weather Cap Type: ________ Size (dia.): __________

Pull Boxes: Quantity: _____ Size _____ Locations: ______

90° Sweeps: Quantity: ______ Locations: __________

Wall Penetration: Type: _______ Size (dia.): __________

Inside Cable Routing:

Conduit: No _____ Yes ______

............. If yes; Type: _____ Size (dia.): ________ Length: __________

Pull Boxes: Quantity: _____ Size _____ Locations: ______

90° Sweeps: Quantity: _____ Locations: __________

Wall Penetration: Type: _______ Size (dia.): __________

Special Considerations:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Sketch the Interfacility Link Path

NORTH
Photograph the Interfacility Link Path

(Attach photographs here)
7. Indoor Equipment

Indoor Equipment

Location of Indoor Equipment

1. Describe the location of Indoor Equipment (existing building, planned, separate outdoor equipment shelter, etc...):

   Explanation: 

   

   

   

Overall building floor-plan layout:

- Provide a sketch of indoor facility layout including dimensions of proposed floor space and ceiling height of equipment room.

- Attach photographs from Chapter 5, Visual Obstructions within the Satellite Arc.

1. Proposed space for indoor equipment:

   Telephone room: 

   Storage room: 

   Other: 
2. Will the Indoor Equipment be located in the same room as the following customer equipment:

PABX: ................................................................. Yes ___ No ___

Explanation: ________________________________________________________

PABX Type: _________________________________________________________

PABX Distribution Panel (MDF): ........................................ Yes ___ No ___

Specify: ____________________________________________________________

Data Terminal Equipment: .................................................. Yes ___ No ___

Specify: ____________________________________________________________

3. IFL cable entry into the indoor equipment room from:

Floor _____ Ceiling _____ Wall______

4. Will the equipment room have a raised floor? Yes ___ No ___

Note: _____________________________________________________________

___________________________________________

5. Is the equipment rack required to be bolted to the floor? Yes ___ No ___

If so, what is the floor composition? _________________________________

___________________________________________
6. Will Customer personnel be stationed in the same room? Yes ___ No ___

Special Considerations: _____________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________
Sketch the Indoor Equipment, Power and Ground Layout
Photograph the Indoor Equipment, Power and Ground Layout

(Attach photographs here)
This page is intentionally left blank.
8. Power and Ground Provision

1. Is AC Power available to equipment? Yes ____ No ____
   Explanation: __________________________________________
   ______________________________________________________
   ______________________________________________________

2. Building Electrical Power:
   Commercial: Yes ____ No ____
   Explanation: __________________________________________
   ______________________________________________________
   Generator: Yes ____ No ____
   Explanation: __________________________________________
   ______________________________________________________

3. A.C. Power:
   Phase(s): ___________ Volts: _____________________________
   Frequency (Hz): _______ Max. Power Capacity: _____________ (KVA)

4. Will UPS Power be Available: Yes ____ No ____
   Explanation: __________________________________________
   ______________________________________________________
   ______________________________________________________
5. AC power dedicated or not dedicated? Yes ____ No ____
   If no, what other devices are on the circuits? ________________________________
   ______________________________________________________________________
   ______________________________________________________________________
   Special Considerations: ____________________________________________________
   ______________________________________________________________________

6. Is lightning ground protection available:................................. Yes ____ No ____

7. Is electrical ground available:.......................................................... Yes ____ No ____

8. Is Ground available:......................................................................... Yes ____ No ____
   Grounding cable size _____ and approx. length ____________ (feet/meters)
   Ground resistance: _______ (ohm)

   Note: The ground should have a resistance of less than 5 ohms or as per the local
   building code, whichever is less. The equipment ground shall be independent of
   lightning ground.

   Special Considerations: ____________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________
9. Data Interface Requirements

1. Approximate length of data interface cable route:
   
   Total horizontal length ______________ Feet ______________ Meters

   Number of floors cable must traverse vertically (if any): ________________

   Interface and connector type: ________________________________

   Special Considerations: ________________________________

   __________________________________________________________________

   __________________________________________________________________

   __________________________________________________________________

2. Will lightning arrestors be required between customer interface cables and the equipment rack?

   Data interface cable: ................................................................. Yes ____  No ____

   Note: Lightning arrestors at the equipment rack entry point should be used especially when the customer interface cables are routed between buildings, in-ground or above-ground.

   Other: ____________________________________________________________________

   ____________________________________________________________________
3. Will a new conduit be required for the data interface cable?:

Yes ____  No ____

If conduits are required, include their positions and lengths in the sketches of the cable runs.

Special Considerations: ________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Photograph the Data Cable Path

(Attach photographs here)
This Site Survey was conducted either by Comtech EF Data personnel with the assistance of the customer personnel for the contracted sites or solely by customer personnel. The signatures below signify that the procedure has been completed.

<table>
<thead>
<tr>
<th>Comtech EF Data (if applicable)</th>
<th>Customer:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Title:</td>
</tr>
<tr>
<td>Date:</td>
<td>Date:</td>
</tr>
</tbody>
</table>
### Units of Length

<table>
<thead>
<tr>
<th>Unit</th>
<th>Centimeter</th>
<th>Inch</th>
<th>Foot</th>
<th>Yard</th>
<th>Mile</th>
<th>Meter</th>
<th>Kilometer</th>
<th>Millimeter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 centimeter</td>
<td>—</td>
<td>0.3937</td>
<td>0.03281</td>
<td>0.01094</td>
<td>6.214 x 10^{-6}</td>
<td>0.01</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1 inch</td>
<td>2.540</td>
<td>—</td>
<td>0.08333</td>
<td>0.2778</td>
<td>1.578 x 10^{-5}</td>
<td>0.254</td>
<td>—</td>
<td>25.4</td>
</tr>
<tr>
<td>1 foot</td>
<td>30.480</td>
<td>12.0</td>
<td>—</td>
<td>0.3333</td>
<td>1.893 x 10^{-4}</td>
<td>0.3048</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1 yard</td>
<td>91.44</td>
<td>36.0</td>
<td>3.0</td>
<td>—</td>
<td>5.679 x 10^{-4}</td>
<td>0.9144</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1 meter</td>
<td>100.0</td>
<td>39.37</td>
<td>3.281</td>
<td>1.094</td>
<td>6.214 x 10^{-4}</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1 mile</td>
<td>1.609 x 10^5</td>
<td>6.336 x 10^3</td>
<td>5.280 x 10^3</td>
<td>1.760 x 10^3</td>
<td>—</td>
<td>1.609 x 10^3</td>
<td>1.609</td>
<td>—</td>
</tr>
<tr>
<td>1 mm</td>
<td>—</td>
<td>0.03937</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1 kilometer</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.621</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

### Temperature Conversions

<table>
<thead>
<tr>
<th>Unit</th>
<th>° Fahrenheit</th>
<th>° Centigrade</th>
</tr>
</thead>
<tbody>
<tr>
<td>32°F Fahrenheit</td>
<td>—</td>
<td>0 (water freezes)</td>
</tr>
<tr>
<td>212°F Fahrenheit</td>
<td>—</td>
<td>100 (water boils)</td>
</tr>
<tr>
<td>-459.6°F Fahrenheit</td>
<td>—</td>
<td>273.1 (absolute 0)</td>
</tr>
</tbody>
</table>

**Formulas**

C = (F - 32) * 0.555

F = (C * 1.8) + 32

### Units of Weight

<table>
<thead>
<tr>
<th>Unit</th>
<th>Gram</th>
<th>Ounce Avoirdupois</th>
<th>Ounce Troy</th>
<th>Pound Avoir.</th>
<th>Pound Troy</th>
<th>Kilogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 gram</td>
<td>—</td>
<td>0.03527</td>
<td>0.03215</td>
<td>0.002205</td>
<td>0.002679</td>
<td>0.001</td>
</tr>
<tr>
<td>1 oz. avoird</td>
<td>28.35</td>
<td>—</td>
<td>0.9115</td>
<td>0.0625</td>
<td>0.07595</td>
<td>0.02835</td>
</tr>
<tr>
<td>1 oz. troy</td>
<td>31.10</td>
<td>1.097</td>
<td>—</td>
<td>0.06857</td>
<td>0.08333</td>
<td>0.03110</td>
</tr>
<tr>
<td>1 lb. avoird</td>
<td>453.6</td>
<td>16.0</td>
<td>14.58</td>
<td>—</td>
<td>1.215</td>
<td>0.4536</td>
</tr>
<tr>
<td>1 lb. Troy</td>
<td>373.2</td>
<td>13.17</td>
<td>12.0</td>
<td>0.8229</td>
<td>—</td>
<td>0.3732</td>
</tr>
<tr>
<td>1 kilogram</td>
<td>1.0 x 10^3</td>
<td>35.27</td>
<td>32.15</td>
<td>2.205</td>
<td>2.679</td>
<td>—</td>
</tr>
</tbody>
</table>