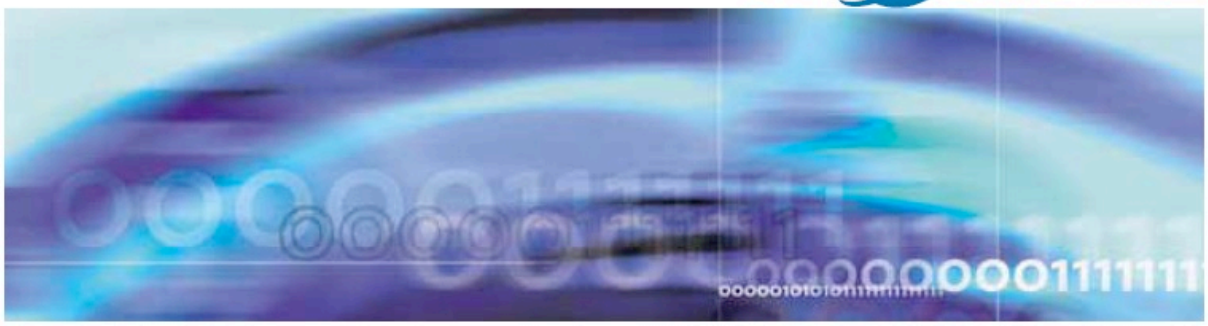


Communication Server 1000 Chassis

(Nortel Meridian 1 PBX 11C Chassis)

System Evaluation

NN43011-300

Document status: Standard
Document version: 03.02
Document date: 03 July 2009

Contents

CS 1000 Chassis system evaluation 4

Product bulletins for vintage/release updates 29

Communication Server 1000 Chassis
Nortel Meridian 1 PBX 11C Chassis
System Evaluation

for

SUMMARY: A system evaluation of the _____(Customer) Communication Server 1000 CHASSIS solution in _____(City) was requested by _____(Name) of _____(Company). The evaluation was performed on _____(Date). The nature of the evaluation was to determine if the Communication Server 1000 CHASSIS was installed according to Nortel manufacturing specifications and Product Bulletin requirements.

DISTRIBUTION:

EVALUATED BY:

DATE:

Descriptions and procedures pertaining to IP applications in this document are provided for continuity for customers remaining on Communication Server Release 4.5.

A stand-alone IP Trunk (ITG Trunk) configuration is the only IP application supported on the Meridian 1 Option 11C platform in Communication Server 1000 Release 5.5 or earlier. For information on software-only upgrades, refer to Meridian 1 Small System Software-only Upgrade
(NN43011-459).

Systems described within this document that are configured with IP Phones or Signaling Servers using Communication Server 1000 Release 4.5 and want to upgrade to Communication Server 1000 Release 6.0 must be upgraded to Communication Server 1000E with a Common Processor Pentium Mobile (CP PM) call processor. For migrations to Communication Server Release 6.0, refer to:

- Communication Server 1000E Upgrade - Hardware Upgrade Procedures (NN43041-464)
- Communication Server 1000E Upgrade - Software Upgrades (NN43041-458)
- Meridian 1 Small System Software-only Upgrade (NN43011-459)

Location Profile

Site Information:

Audit Engineer: _____ Evaluation Date: _____

Distributor: _____ Customer: _____
Address: _____ Address: _____

Contact: _____ Site Telephone: _____
Telephone: _____ Attendees: _____
Email: _____

System Information:

System Serial Number: XXXXX

	Type/Platform	Software Release	Ports
PBX	CS 1000 CHASSIS	XX21/X.00	XXX
TM			
Call Center Server			
Call Pilot IPE			
VGMC			
Signaling Server (ISP 1100, CP PM, COTS)			

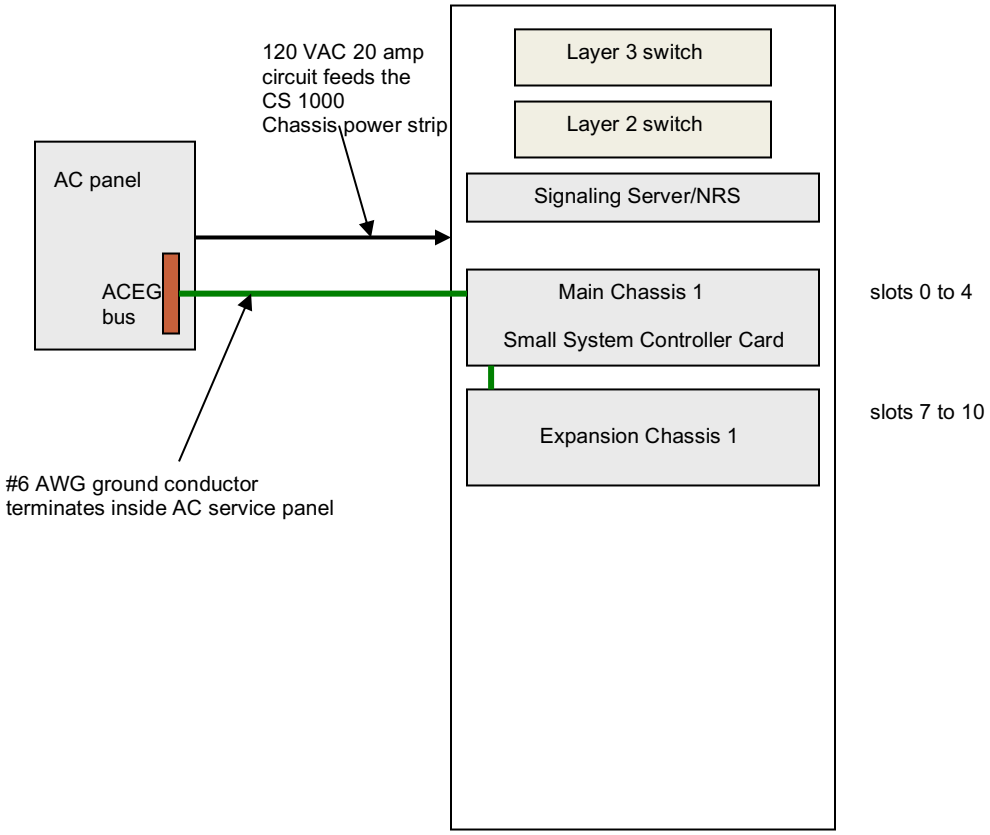
Equipment Information:

	Type	Quantity
Equipment :		
Main Chassis		
Exp. Chassis		
Signaling Server	ISP 1100, CP PM, and COTS	

Power Equipment		Quantity
UPS Type:		

Evaluation Type: Post Cut

CS 1000 Chassis Sample Site Layout



FINDINGS AND RECOMMENDATIONS

Introduction:
The evaluation of this Nortel CS 1000 System Chassis, located _____ _____ was requested by _____. The request was initiated because _____.
The evaluation was performed on (date) _____ and covered the areas of Equipment Room Environment, Maintenance and Technician Area Environment, Power and Grounding, System Power and Ground Connections, Chassis Installation, Cabling Installation, System Operation, System Software, and Network Parameters for VoIP.
_____ (name of company representative) was the main contact person during the evaluation process. All questions that pertain to this report may be directed to _____.

DISCREPANCIES AND RECOMMENDATIONS:

EQUIPMENT ROOM ENVIRONMENT

Item # **Findings:** **Recommendation:**	

MAINTENANCE AND TECHNICIAN AREA ENVIRONMENT

Item # **Findings:** **Recommendation:**	

POWER AND GROUNDING

Item # **Findings:** **Recommendation:**	

SYSTEM POWER AND GROUND CONNECTIONS

Item # **Findings:** **Recommendation:**	

CHASSIS INSTALLATION

Item # **Findings:** **Recommendation:**	

CABLING INSTALLATION

Item # **Findings:** **Recommendation:**	

SYSTEM OPERATION

Item # **Findings:** **Recommendation:**	

SYSTEM SOFTWARE

Item # **Findings:** **Recommendation:**	

NETWORK PARAMETERS FOR VoIP

Item # **Findings:** **Recommendation:**	

CONCLUSION

NOTE: *This report is based on checklist items contained in this document. The checklist item under each subheading is answered with a "Y" or "N", signifying that it either complies or does not comply with Nortel specifications. An "N/A" means that the checklist question does not apply in this instance. The specifications are based on Nortel Practices, Product Bulletins, Product Advisories, and General Release Bulletins. Each checklist item is given a weight. The item may be deemed as "Critical, Major, Minor, or Recommended" in nature. A system evaluation is found to be "non-compliant" when one "Critical" or two "Major" discrepancies have been identified. Checklist weighting is not given to Applications products questions. The aim of an evaluation is to ensure installation completeness, optimize system performance/ reliability, and provide a safe environment for personnel.*

Further Comments:

CHECKLIST

SYSTEM AND SITE REQUIREMENTS

Equipment Room Environment

For additional information refer to:
NTP NN43011-220 Meridian 1 Small System Planning and Engineering
NTP NN43011-310 Meridian 1 Small System Installation and Commissioning

		Meets Specifications Y / N
1.	Temperature is maintained between 0° and 45° C (32° and 113° F) and does not deviate any more than 5°F within a 24 hour period. A temperature of 22°C (72°F) is recommended. Temperature: _____°(Indicate C or F) [Major]	
2.	Humidity is between 5% and 95% non-condensing. Humidity _____% [Major, Critical if more than 95% or less than 5%]	
3.	Environment does not show any visible signs of moisture. [Critical]	
4.	Ventilating openings on equipment are free of obstructions. [Major]	
5.	The room is clean, relatively dust-free, and well ventilated. [Minor, Major if concrete dust]	
6.	Floor is sealed concrete, vinyl, raised floor (no dust or moisture) [Major]	
7.	Equipment location is not subject to constant vibration. [Major]	
8.	Equipment is located at least 12 ft (3660 mm) away from sources of electrostatic, electromagnetic, or radio frequency interference, such as power tools, appliances (such as vacuum cleaners), office business machines (such as copying machines), all electric motors, and electrical transformers. [FCC CFR 47 Part 15 for Class A devices. (<20 milliGauss ELF) [Major]	
9.	Equipment is not located under liquid-carrying pipes. [Major]	
10.	Equipment room is not conducive to generating electrostatic discharge (ESD) [Major]	
11.	Anti-static wrist straps, sprays and/or mats in evidence on site. [Recommendation]	
12.	Switch room door has a lock installed. [Minor]	
13.	No tripping or safety hazards exist in the equipment room. [Major]	
14.	Lighting illumination is 50 to 75 foot candles measured 76 cm (30 in.) above the equipment room floor. [Recommendation]	
15.	Equipment room is protected from receiving direct sunlight. Direct sunlight is prevented from shining on electronic hardware, especially disk drives. [Major]	

Equipment Room Environment (continued)

Meets Specifications Y / N

16. Adequate floor space has been made available to install equipment racks, patch panels, power systems (UPS) etc. [Major] _____
17. RS-232 terminal/communications devices should not exceed the 50 foot cable length limit unless line drivers are utilized. [Major] _____
18. The storage room for spare parts is secure. [Recommendation] _____
19. If it is not possible that the site maintain the environment of the storage area exactly the same as the environment of the operating equipment, stored materials are allowed time to adjust to the equipment room environment before using them. [Major] _____
20. The storage area is dust-free and away from high humidity and machinery such as electric motors of transformers. [Major] _____
21. Circuit cards which are not in use are stored in a protective antistatic bag. The storage area is dust-free and away from high humidity and machinery such as electric motors or transformers. [Major] _____
22. Chassis covers are installed. [Major] _____

Maintenance and Technician Area Environment

23. A locking cabinet or storage area is in place for backup disks [Recommendation] _____
24. The area contains a table or desk terminal, printer, or equivalent device [Recommendation] _____
25. Maintenance workstation is equipped with a: [Major]
    - dial-up modem or connected to the network; _____
    - web browser; _____
    - operational maintenance telephone. _____
26. Observations/Comments

Power and Grounding

For additional information refer to:
NTP NN43011-220 Meridian 1 Small System Planning and Engineering
NTP NN43011-310 Meridian 1 Small System Installation and Commissioning

Meets Specifications Y / N

CS 1000 System Chassis AC Service Panel

1. The AC supply conductors are dedicated and uninterrupted from the building primary source or transformer to the PBX main AC service panel. (This does not apply to sub panels). [Major] _____
2. Verify that an Isolated Ground (IG) or ACEG conductor is installed from MGN/ X0 to an IG or ACEG bus in the AC panel serving the PBX equipment room. This point will become the single point ground reference for the PBX. [Critical]
   Note: In some cases an AC panel may not be a requirement. Various UPS systems will establish the same intent and purpose as the panel IG/ACEG bus. The engineer performing the evaluation should research the application and determine its intent. _____
3. The IG/ACEG conductor is sized per code. (NEC 250). Note: It is recommended that the ACEG conductor be the same size as the largest phase conductor. [Major] _____
4. The IG/ACEG conductor runs in the same raceway (conduit) as the phase and neutral conductors (NEC 250). [Major] _____
5. The IG/ACEG conductor is insulated, permanent, and continuous (no splices).
   (NEC 250) [Major] _____
6. A dedicated AC panel is installed in the PBX room for the CS 1000 and associated equipment only. Circuits being served for purposes such as lighting, air conditioning, heating, generators, copiers, or motors from the CS 1000 service panel are not recommended.
   Panel I.D.:_____ [Major] _____
7. Circuit breakers are identified/labeled at the AC service panel. (NEC 110-22) [Minor] _____
8. Ensure that all voltage and current levels recorded are within the defined limits. [Critical]
   Note: A licensed Electrician should obtain these results. See the AC Power/Ground Worksheet _____
9. The workspace clearance around the AC service panel is 3 feet. (NEC 110-26) [Major] _____

Meets Specifications Y / N

Power and Grounding (continued)

10. All RS-232 ancillary devices connected to the system I/O circuit cards must be wired from the same AC panel as the PBX power supplies, with individual hot, neutral, and isolated/ACEG ground wires. [Critical]
Note: Protection devices such as electro-optical isolators must be installed for all RS-232 devices (terminal, modem, etc.) not served from the same AC service panel as the CS 1000 system.

11. Power from each outlet meets the input requirements of at least one System Chassis power supply as listed in the following tables. [Major]

AC input requirements for each NTDK91 Chassis and NTDK92 Chassis Expander		y/n
North America		
Voltage	Recommended: 100-120 volts Maximum limits: 90 and 132 volts Single phase	
Frequency	50-60 Hz	
Power (I/P max)	550 VA maximum	
Outlet Type	120 volt, 15 Amp supply	

AC input requirements for each NTDK91 Chassis and NTDK92 Chassis Expander		y/n
Europe and UK		
Voltage	Recommended: 208/220 volts Maximum limits: 180 and 250 volts Single phase	
Frequency	50-60 Hz	
Power (I/P max)	550 VA maximum	
Outlet Type	208/240 volt, 15 Amp supply	
Note: The supplied power must be single-phase 240 or three-phase 208 Y, and must have a system ground conductor.		

AC input requirements for each NTDK91 Chassis and NTDK92 Chassis Expander		y/n
Germany		
Voltage	Recommended: 230 volts Maximum limits: 180 and 250 volts Single phase	
Frequency	50 Hz	
Power (I/P max)	550 VA maximum	
Fuse	16A	
Outlet Type	Receptacles by DIN regulation	

Power and Grounding (continued)

Meets Specifications Y / N

Location of power outlets

NOTE: The maximum distance between a power outlet and the System Chassis is met in relation to the length of the power cord.

- *In North America, the power cord is 9 ft 10 in. (3000 mm).*
- *Outside North America, the power cord is 8 ft 2 in. (2490 mm).*

12. Observations/Comments

AC Service Panel Measurements

Note: If a portable UPS system is used, measurements will only be taken on the input/output voltage and the neutral-ground voltage. Percent of load must also be notated

Voltage Measurements:	AC		MIN	MAX
Between neutral and phase A	_____	volts	105v	125v
Between neutral and phase B	_____	volts	105v	125v
Between neutral and phase C	_____	volts	105v	125v
Between ground and phase A	_____	volts	105v	125v
Between ground and phase B	_____	volts	105v	125v
Between ground and phase C	_____	volts	105v	125v
Between phase A and phase B	_____	volts	180v	250v
Between phase A and phase C	_____	volts	180v	250v
Between phase B and phase C	_____	volts	180v	250v
Between neutral and ground (ACEG)	_____	Vrms	0.0v	0.5Vrms

UPS percent of load:
UPS input voltage:
UPS output voltage:

Current Measurements:	AC		MAX
Neutral conductor amps	_____	amps	See Note 1
Ground conductor amps (IG or ACEG)	_____	amps	0.5 amps
Phase A amps	_____	amps	
Phase B amps	_____	amps	
Phase C amps	_____	amps	

Note 1: The neutral current should never exceed the current in any single-phase leg.
A licensed electrician must take AC service panel measurements.
Voltage and current values must comply with NTPs.

Voltage between neutral and ground could signify poor or loose connections or non-continuous grounding.

Current flow in the grounding conductor may indicate that the neutral has been used for equipment grounding.

If currents are balanced in a three phase system and there is significant neutral current, then harmonics are present. Harmonics can deteriorate transformers over time by over heating their internal wiring. Solution: Use transformers specifically designed for harmonic loading (k-factor-rated).

System Power and Ground Connections

For additional information refer to:
NTP NN43011-220 Meridian 1 Small System Planning and Engineering
NTP NN43011-310 Meridian 1 Small System Installation and Commissioning

Meets Specifications Y / N

1. If other data communications equipment is in the same rack/equipment cabinet as the Small System, each piece of equipment is powered from a grounded outlet. The same service panel services all outlets. [Major] _____
2. The Signaling Server power cord is plugged into the rack's AC outlet and the rack's AC outlet is grounded to its dedicated electrical panel. [Major] _____
3. In an installation where a dedicated panel cannot provide optimal conditions, an load isolation transformer or load isolation transformer-based UPS/Line conditioner with the following characteristics is used: [Major]
   - 120/208/240 V AC input, over-current protected at primary _____
   - 120/208/240 V AC available at secondary outputs, each circuit breaker protected _____
   - primary and secondary windings are completely isolated from one another _____
   - it is approved for use locally as a stand-alone user product (CSA, UL, or other locally recognized clear markings) _____
   - it is capable of providing power to all CS 1000 components operating at the same time at full load _____
   - equipment unrelated to the CS 1000 is not powered from a transformer that provides service to the CS 1000 system _____
   - it is electrostatically shielded to minimize ELF fields _____

System Power and Ground Connections (continued)

Meets Specifications Y / N

4. The method of grounding used for Small Systems depends on whether the same service panel powers all chassis. This installation uses one of the following grounding scenarios: [Major]

   In System Chassis with one or more chassis powered by one service panel: For each system chassis, a #6 AWG (#40 Metric Wire Gauge) ground wire is connected from the chassis to the NTBK80 grounding block. The grounding block is connected to a ground source (the ground bus in the AC power service panel). The chassis and the chassis expander are considered as the same ground. The ground wire is jumped from the chassis expander to the chassis and then back to the grounding block. _____

   System Chassis with more than one chassis, powered by different service panels:
   For each chassis, a #6 AWG (#40 Metric Wire Gauge) ground wire is connected from the chassis to the NTBK80 grounding block. If any chassis cannot be powered from the same service panel, it is ground separately from the other chassis back to the service panel that supplies it. Each chassis and chassis expander pair is powered from the same service panel.

   Note 1: If a chassis requires a separate ground, it is grounded using the same method used for a system with one chassis.

   Note 2: In the UK, you can connect the grounding wire from the chassis to an NTBK80 grounding block or through a Krone Test Jack Frame. _____

   Grounding multiple pieces of equipment in a rack/equipment Cabinet:
   Each piece of equipment in a rack/equipment cabinet is grounded. If a piece of equipment does not have a ground lug, then the whole rack/equipment cabinet is grounded. _____

5. The installation meets the specific grounding requirements for the area: [Major] _____

Germany	#8 AWG (10 mm^2) green/yellow wire
North America; other areas in Europe	Not smaller than #6 AWG (16 mm^2) at any point
UK	Two green/yellow wires no thinner than two 10 mm^2

System Power and Ground Connections (continued)

		Meets Specifications Y / N
6.	A system ground conductor, sized at a minimum of a #6 AWG stranded, insulated wire is installed from the chassis ground bus to the ACEG bus in the AC panel. Where UPS systems are employed, a #6 AWG wire can be installed from the chassis ground bus to the grounded metallic case of the UPS using a ground lug. [Critical if missing; Major if undersized].	
7.	A #6 AWG insulated, stranded conductor is installed between each CS 1000 chassis ground lug and the cabinet ground bus. [Major]	
8.	All grounding conductors are clearly identified/labeled. [Minor]	
9.	Ground connections are tagged with a clear message such as "CRITICAL CONNECTION: DO NOT REMOVE OR DISCONNECT. [Minor]	
10.	No telecommunications ground bus of the CS 1000 is connected to untested horizontal structural steel, water pipes, or other unreliable ground paths. [Major]	
11.	The SPG conductor from the Small System is not connected to structural steel members or electrical conduit. This conductor is not tied to a ground source or grounded electrode that is not hard-wired to the building reference conductor. [Major]	
12.	The chassis ground bus is mounted near the CS 1000 system. [Major]	
13.	CSUs (Channel Service Units) are connected to reserve power (UPS) or are span powered. [Major]	
14.	Ground conductors are insulated, permanent, and continuous (not spliced). [Major]	
15.	All terminations are easily visible and accessible for maintenance purposes. [Major]	
16.	The impedance of the link between the ground post of the system chassis and the SPG to which it is connected is less than 0.25 ohms. [Major]	
17.	Dedicated circuit breaker panels provide power only to the Small System and its related hardware, such as TTYs and printers. [Major]	
18.	A separate circuit is used for each device connected to the panel. Outlets that provide service to the chassis are close enough so that the power cord can reach the chassis power supply. [Major]	
19.	For systems equipped with Expansion Chassis, a separate outlet for each chassis is provided. Each outlet is from separate circuits in the same panel. [Major]	

Meets Specifications Y / N

System Power and Ground Connections (continued)

Ancillary Equipment Power

20. Power for system equipment in the switch room is: [Major]
    - powered from the same panel or transformer as the Small System _____
    - grounded to the same panel or transformer as the Small System _____
    - labeled at the panel to prevent interruption that is not authorized _____
    - not be controlled by a switch between the breaker and the equipment _____
21. Service receptacles for AC-powered Small Systems and related equipment are: [Major]
    - rated for 120 or 240 V, 15 or 20A, 50-60 Hz, 3-pole, 3-wire, grounded _____
    - grounded to the same location so as to form a SPG _____

Other items

22. QUA6 Power Failure Transfer Units (PFTU) are available to transfer trunk lines during a power or system failure. [Recommendation] _____

Note: *The appropriate AC power cord kit is used for the installation as listed in the following table. (These cords connect a CS 1000 System Chassis to a commercial AC power source.)*

Country / Region	AC Power Cord	Voltage Rating	Current Rating	Plug Type
North America	A0379412	250 V	10 A	NEMA 6-15P
Argentina	A0814961	250 V	10 A	IRAM 2073
North America	NTTK14	125 V	13 A	NEMA 5-15P
Australia/ New Zealand	NTTK15	250 V	10 A	AS3112
Europe	NTTK16	250 V	10 A	CEE(7)VII
Switzerland	NTTK17	250 V	10 A	SEV 1011
UK/Ireland	NTTK18	250 V	10 A	BS1363
Denmark	NTTK22	250 V	10 A	AFSNIT

Chassis Installation

Meets Specifications Y / N

For additional information refer to:
NTP NN43011-220 Meridian 1 Small System Planning and Engineering
NTP NN43011-310 Meridian 1 Small System Installation and Commissioning

1. The Meridian 1 PBX 11C Chassis is installed either vertically or horizontally on a wall, or is installed in a rack/cabinet. The mounting surface can support at least 100 lb (45 kg). [Major] _____
2. Installations combining Small Systems meet the following minimum standards: [Major]
   - horizontal installations: 10 inches of free space on either side of the chassis. _____
   - vertical installations: 12 inches of free space on the card side and 6 inches of free space on the cable side of the chassis. _____
3. Installations with multi-chassis systems adhere to the following guidelines (for both horizontal and vertical expansion): [Major]
   - The maximum distance between the Main Chassis and each fiber Expansion Chassis is 1.8 mi (3 km) _____
   - The minimum distance between the Main Chassis and the chassis expander, when mounted above one another (vertical expansion), is 4 in. (102 mm). _____
4. Installations combining cabinets and chassis in a mix-and-match configuration meet the following minimum standards: [Major]
   - horizontal installations: the chassis requires 10 inches of free space on either side of the chassis. _____
   - vertical installations: the chassis requires 12 inches of free space on the card side and 6 inches of free space on the cable side of the chassis. _____
5. In a rack/equipment cabinet configuration, the lowest recommended installation position for the chassis is 1.75 inches (44 mm) from the floor. [Recommendation] _____
6. Observations/Comments:

Cabling Installation

For additional information refer to:
NTP NN43011-310 Meridian 1 Small System Installation and Commissioning

Meets Specifications Y / N

Outside Plant Cabling and Protectors

1. Entrance cable sheath is grounded as close as possible at the point of entry to an approved ground source. [Major] (NEC 800-33; 40) _____
2. Splice cases are properly grounded. [Major] _____
3. Approved protection devices are used for Telco network and campus cables. (Carbon, Gas tube type for network cables; fast-acting, low let-through type on campus cables). (NEC 800) [Major]
   See Nortel Product Bulletin 97040 (April) revision 1 relating to protection _____
4. Protection devices are installed at both ends of a cable in a campus environment. (Silicon Avalanche type. see Oneac 5SDP; 5SAP) [Major]
   ANSI/UL 497-1995 Specs -10V for digital sets; 48VDC for analog sets. ***See Nortel Product Bulletin 97040 (April) revision 1*** _____
5. All protection device grounding conductors are grounded to an approved source with an appropriately sized wire. The grounding conductors must be kept as short and straight as possible. *(No sharp bends- 8" radius) (NEC 800-40)* [Major] _____

Chassis Cabling

6. Cabling must be installed in a neat and orderly fashion. [Major] _____
7. MDF cables are seated and secured in place using factory velcro straps. [Major] _____
8. All cables for chassis and Signaling Servers (SDI, AUX, VGMC ELAN/TLAN, CE-MUX, DS-30X, and 10/100BaseT cables) and adapters are properly fastened. [Major] _____
9. Power wiring must not be installed in a parallel fashion with CAT5 cabling. Installing power wires perpendicular to CAT5 cables is preferred and minimizes effects from EMI/ELF fields. [Major] _____
10. EMI mitigating ferrite rings (NTVQ83AA) are installed on Voice Gateway Media Card TLAN/ELAN patch cables. [Major] _____
11. NTCW84JA assemblies are used for each VGMC connector. [Major] _____
12. CAT5 patch cables are not installed near fluorescent lighting fixtures. [Major] _____
13. ELAN/TLAN patch cables for VGMC and Signaling Server hardware are "factory made" and kept at 20 feet or less. [Recommendation] _____
14. All patch cables are labeled and correlate to a network infrastructure diagram/schematic. [Minor] _____

Cabling Installation (continued)

Meets Specifications Y / N

Cross-connect terminal requirements

15. To allow for future expansion and equipment changes at the cross-connect terminal, the cross-connect terminal has enough space for connecting blocks to terminate the following wires:
[Recommendation]
    - five 25-pair cables from each chassis _____
    - four 25-pair cables from the chassis expander _____
    - four conductors for the AUX cable from the chassis _____
    - one 25-pair cable from each QUA6 Power Failure Transfer Unit (PFTU) _____
    - wiring from telephone sets and trunks _____

16. The BIX cross-connect system is recommended for use with the Small System. However, use of this system is not mandatory. Some other cross-connect systems may be used (for example, the Krone Test Jack Frame for the UK and the Reichle Masari cross-connect terminal for Germany).
In the UK
If the Krone Test Jack Frame is used, only authorized personnel are allowed access the Krone Test Jack Frame and it is installed in a locked room or in an environment that prevents free access to the equipment. Refer to NN43011-310 Meridian 1 Small System Installation and Commissioning for additional information about the cross-connect terminals. [Major] _____

17. Observations/Comments

System Operation

X11 Software General Release Bulletin (shipped with new software)

Meets Specifications Y / N

System Diagnostics

1. LD 30 Network and Signaling Diagnostic (NWS). [Minor] _____
2. LD 34 Tone and Digit Switch and Digitone Receiver (TDS). [Major] *Check results from the midnight routines.* _____
3. LD 37 Input/Output Diagnostic (IOD). *Use "STAT" command for TTYs.* [Major] _____
4. LD 38 Conference Circuit Diagnostic (CNF) [Major] *Check results from the midnight routines.* _____
5. LD 43 Data Dump (EDD). [Critical] Check for successful completion of a manual data dump. _____
6. LD 44 Software Audit (AUD). [Major] *Must be configured in BKGD of Ld-17. Check for normal AUD000 messages.* _____
7. LD 48 Status of ELAN/ Mail/ESDI Links. [Major] *Make sure all AMLs that are in use are ACTIVE EMPTY.* _____
8. LD 60 Digital Trunk Diagnostic (DTI/PRI). [Major] *Use the SSCK command to check system clocks. Also check midnight routines for frame slips, CRC errors.* _____
9. GTR, NTPs, and Backup logs are located in switch room. *Note: Ensure appropriate level and system type of NTPs are available.* [Minor] _____
10. The PBX maintenance modem/terminal server performs as expected. [Major] _____
11. The system is equipped with a working maintenance terminal and printer. [Major] _____
12. A PC is available on location in order to access Element Manager [Major] _____
13. Minimum level PEPs are installed in the system. This includes DepList PEPs for the call servers, required PEPs for Signaling Servers, and Voice Gateway Media Card PEPs. [Recommendation] _____
14. The system is equipped with a working maintenance terminal and printer. [Major] _____
15. A PC is available on location in order to access Element Manager/NRS [Major] _____
16. Minimum level PEPs are installed in the system. This includes DepList PEPs for the Call Servers, required PEPs for Signaling Servers, and Voice Gateway Media Card PEPs. [Recommendation] _____
17. IP sets are on the latest recommended firmware. [Recommendation] _____
18. Signaling Servers are load sharing (equal number of registered IP phones) [Recommendation] _____

Meets Specifications Y / N

System Operation (continued)

19. Printouts of Signaling Server config.ini and bootp.tab files readily available. [Minor]
pdt> cd /u/config, copy config.ini, copy bootp.tab

Memory size

20. The installation meets the minimum memory requirements for CS 1000 Release 5.5 software. [Major]

CS 1000M Release 5.5 memory requirements			
Processor	**Flash memory required**	**DRAM memory required**	**Total memory**
SSC	64 MByte	32 MByte	96 MByte

21. The installation does not exceed the maximum call register count recommended for CS 1000M Release 5.5 software. [Major]

Recommended maximum call register counts			
System	**Recommended call register count**	**Memory required (SL-1 words)**	**Memory required (MByte)**
CS 1000	800	181 600	0.693
Note: Call registers are 227 SL-1 words long. One SL-1 word is 4 bytes.			

22. Observations/Comments

System Software

Meets Specifications Y / N

Overlay 15/21 Customer Data Block

1. SRCD (Auto Set Relocation Code) has a value programmed (0000 is Okay). [Major if SPRE is 1, Minor if other] _____

Overlay 17/22 Configuration Record

2. Daily Routine defined as LD 34, 38, 60,137 [Major] _____
3. LD 44 in background routine. [Major] _____
4. The number of call registers (NCR) within the maximum value required per GRB documentation regarding port size and features used. **CS 1000M- 800 call registers** [Major] _____
5. 1000M LPIB and HPIB values equal 450 [Recommendation] _____
6. History File is defined as MTC, BUG and is set at minimum length of 60,000 characters. [Major] _____
7. ERRM is configured as ERR, BUG, AUD [Major] _____
8. RLS IDs are configured for each D-Channel where appropriate. [Major] _____

Overlay 11/12/13 Digital Sets / Attendant Consoles/ Digitone Receivers

9. Switchroom phone requires MTA for class of service. [Major] _____
10. Consoles powered via unused TNs are correctly programmed “PWR”. [Major] _____
11. Consoles are cross-wired properly and must utilize consecutive units. [Major] _____
12. Observations/Comments

Networking Parameters for VoIP

Meets Specifications Y / N

For additional information refer to:
NTP NN43011-220 Communication Server 1000M and Meridian 1: Small System Planning and Engineering
NTP NN43011-310 Communication Server 1000M and Meridian 1: Installation and Commissioning

1. A LAN/WAN assessment has been performed on the customer network. [Critical] _____
2. The layer 2 switch ports (Baystack 470) in place for the CS 1000 ELAN/TLAN are configured for full duplex, auto negotiate. [Major] _____
3. The port speed for ELAN related ports are configured at 10 Mbps for CS 1000M systems. [Major] _____
4. The ELAN subnet and the TLAN subnet are on separate subnets. [Major] _____
5. All applications on the ELAN subnet are on the same subnet. [Major] _____
6. The port speed for all TLAN ports on the layer 2 switch are configured for 100 Mbps. [Major] _____
7. VGMC circuit cards in the same node are on the same TLAN subnet. [Major] _____
8. Minimum of one VGMC DSP resource for every TDM port (T-1 trunks, digital phones, analog phones, analog trunks, CallPilot channels). [Recommendation]
   For non-blocking requirements one DSP per TDM port is a best practice. _____
9. Layer 2 switches derive UPS power from different branch circuit sources, if possible, in order to minimize single points of failure. [Recommendation] _____
10. Signaling Server (ISP 1100, CP PM, COTS) _____
11. Observations/Comments _____

Product bulletins for vintage/release updates

Product Bulletin	Affected Product	Part Description	Defective Part #	Replacement Part #	Reason for Change