Spares Planning
Avaya Communication Server 1000

7.5
NN43001-253, 05.03
February 2011

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Contents

Chapter 1: New in this release

The following sections details what is new in this document for Avaya Communication Server 1000 Release 7.5.

Navigation

Features

There are no updates to the feature descriptions in this document.

Other changes

See the following section for information about changes that are not feature-related.

Revision history

February 2011	Standard 05.03. This document is up-issued to remove legacy feature and hardware content that is no longer applicable to or supported by Communication Server 1000 systems.
November 2010	Standard 05.02. This document is up-issued to support Avaya Communication Server 1000 Release 7.5.
November 2010	Standard 05.01. This document is up-issued to support Avaya Communication Server 1000 Release 7.5.
June 2010	Standard 04.01. This document is up-issued to support Avaya Communication Server 1000 Release 7.0.

September 2009	Standard 03.03. This document is up-issued to reflect changes to technical content. Table 3: Failure rates - circuit cards on page 23 contains an entry that provides a failure rate for MG XPEC cards.
May 2009	Standard 03.02. This document is up-issued to reflect changes to technical content.
May 2009	Standard 03.01. This document is up-issued to support Communication Server 1000 Release 6.0.
November 2008	Standard 02.06. This document is up-issued to add technical content under chapters Failure rates - power and cooling equipment and Converting NFT values to spares requirements.
August 2008	Standard 02.05. This document has been up-issued to support Communication Server Release 5.5.
July 2008	Standard 02.04. This document has been up-issued to support Communication Server Release 5.5.
December 2007	Standard 02.03. This document has been up-issued to support Communication Server Release 5.5.
June 2007	Standard 01.03. This document is up-issued to correct references to Release 4.5 and to add spares entries where available.
May 2007	Standard 01.02. This document is up-issued to support Communication Server 1000 Release 5.0. This document contains information previously contained in the following legacy document, now retired, Spares Planning (553-3001-153).
August 2005	Standard 18.00. This document is up-issued for Communication Server 1000 Release 4.5.
September 2004	Standard 17.00. This document is up-issued for Communication Server 1000 Release 4.0. Missing part numbers have been added, and terminal equipment updated with all IP Phones.
September 2003	Standard 16.00. This document is up-issued to support Succession 3.0 Software. This document is up-issued to include information for Succession 1000M and Meridian 1 Small Systems.
January 2002	Standard 15.00. This document is up-issued to support Meridian 1 Release 25.40 systems. This document is up-issued to include Call Processor Pentium (CP PII) and Fibre Network Fabric (FNF) for Option 81C.
April 2000	Standard 14.00. This is a global document and is up-issued for X11 Release 25.0x. Document changes include removal of: redundant content; references to equipment types except Options 11C, 51C, 61C, and 81C; and references to previous software releases.
June 1999	Standard 13.00. This document is reissued to include the NT5D03 Call Processor Card and minor edits. Changes to technical content are noted by revision bars in the margins.
October 1997	Standard 12.00. Changes are noted by revision bars in the margins.

August 1996	Standard 11.00. Changes to technical content are noted by revision bars in the margins.
August 1996	Standard 10.00. This document is reissued to include the Fiber Remote Multi-IPE units. Changes to technical content are noted by revision bars in the margins.
December 1995	Standard 9.00. This document is reissued to include the NT9D19 Call Processor Card and minor edits. Changes to technical content are noted by revision bars in the margins.
July 1995	Standard 8.00. This document is reissued to include international information to create a global document and Meridian 1 option 81C. Changes to technical content are noted by revision bars in the margins.
December 1994	Standard, 7.0. This document is reissued to include Small Systems Multi Disk Unit (SMDU), option 51C, and failure rate information updates. Changes to technical content are noted by revision bars in the margins.
April 1994	Standard 6.0. This document is reissued to include information on Meridian 1 system option 61C. New information and changes to technical content are noted by revision bars in the margins.
April 1993	Standard 5.0
December 1992	Standard 4.0. This document is reissued to include information on system option 81 and equipment required for compatibility with X11 release 18. New information and changes to technical content are noted by revision bars in the margins.
December 1991	Standard 3.0. This document is reissued to include technical content updates. Due to the extent of changes revision bars are omitted.
December 1990	Standard 2.0. Reissued to include MTBF information for station equipment.
January 1990	Standard 1.0.

Chapter 2: Introduction

This document is a global document. Contact your system supplier or your Avaya representative to verify that the hardware and software described are supported in your area.

Subject

This document provides the information needed to calculate and plan for spare (replaceable) equipment. The document also contains failure rate information for the equipment.

Note on legacy products and releases

This technical document contains information about systems, components, and features that are compatible with Avaya Communication Server 1000 Software. For more information on legacy products and releases, click the **Documentation** link under **Support** on the Avaya home page:

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Applicable systems

This document applies to the following systems:

- Communication Server 1000M Single Group (CS 1000M SG)
- Communication Server 1000M Multi Group (CS 1000M MG)
- Communication Server 1000E (CS 1000E)
- Meridian 1

Intended audience

This document is intended for individuals responsible for system administration.

Conventions

Terminology

In this document, the following systems are referred to generically as system:

- Communication Server 1000M (CS 1000M)
- Communication Server 1000E (CS 1000E)
- Meridian 1

Related information

This section lists information sources that relate to this document.

Technical publications

The following technical publications are referenced in this document:

- *Avaya Features and Services Fundamentals (NN43001-106)*
- *Avaya Software Input/Output Reference — Administration (NN43001-611)*
- *Avaya Software Input/Output Reference — Maintenance (NN43001-711)*

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Navigation

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Chapter 4: Spares planning

Contents

This section contains information on the following topics:

Introduction

Spares planning is used to determine desired inventory levels of spare (replaceable) items. Spares planning is used by repair houses and centralized depots in order to ensure that there is an adequate stock of replaceable items on hand.

Definitions and assumptions

Failure rate — Failure rate is the estimated number of failures for an item during one million (10^6) hours of operation. The only exception is to measurements for cabling or other items with low failure rates. Failure rates are also measured in Failures in Time (FIT) measurements. One FIT equals one billion (10^9) hours of operation.

Sparing interval — Sparing interval is the period of time that stocks of replaceable items should last without being replenished. This period is assumed to be one year following the installation of the system.

Stock confidence level — Stock confidence level is the allowed probability of not being out of stock when the sparing interval of one year is greater than 99.9 percent.

Card ambient temperature — Card ambient temperature is the average temperature of the air immediately surrounding the circuit card (usually higher than the ambient room temperature).

Card failure rates in this document are based on a card ambient temperature of 40° C (104° F).

Turnaround time for repair — Equipment may be serviced at a repair house or at a centralized depot that serves sub-depots. The turnaround time for the return-to-stock of a failed item is about ten working days (240 hours) from a repair house. The turnaround time for the return-to-stock of a failed item is about two working days (48 hours) from a centralized depot.

Actual turnaround periods vary in the field. As the number of systems served increases, the percentage of replaceable items required in stock is reduced.

Population range — Population range is the quantity of each type of system in the area served by the depot.

Spare stock size — The quantity of spares for a given stock item depends on the sparing interval, stock confidence level, failure rate, turnaround time for repair, and population range.

Calculating spares requirements

Use Calculating spares requirements on page 14 to calculate the number of spares required to stock a depot for a one-year sparing interval:

Calculating spares requirements

1. Determine the number (N) of in-service specified circuit cards serviced by the depot.
2. Obtain the card failure rate (F) for the specified circuit card from the sections in this document.

   Card failure rates are expressed in terms of the number of failures per one million hours (10^6).
3. Determine turnaround time (T) in hours.
4. For repair house service, turnaround time is typically ten working days (240 hours). For centralized depot service, turnaround time is typically two working days (48 hours).
5. Calculate the NFT value by multiplying N x F x T.
6. Look up the number of spares required in Table 6: Number of spares required on page 39.

Example

A centralized depot services 10,000 NT8D02 Digital Line Cards. The failure rate for this card is 6.0 failures per 1 million hours. With a turnaround time of 48 hours:

$$NFT = 10{,}000 \times \frac{6.0}{1{,}000{,}000} \times 48 = 2.88$$

The number of spares required for an NFT value of 2.88 = 10.

Linux applications

Red Hat Linux 5 (update 1) supports Linux kernel version 2.6.18 and the following applications:

- Unified Communications Management (UCM)
- Simple Network Management Protocol (SNMP)
- Deployment Manager (DM)
- Signaling Server (SS)
- Network Routing Service (NRS)
- Call Server (CS)
- Session Initiation Protocol Line (SIPL)
- Element Manager (EM)
- Subscriber Manager (SubM)

For more information about the Linux applications, see *Avaya Linux Platform Base and Applications Installation and Commissioning (NN43001-315).*

Chapter 5: Failure rates - system components

Contents

This section contains information on the following topics:

Overview

Failure rates are based on a circuit card ambient temperature of 40° C (104° F). This temperature is usually higher than the surrounding room temperature. Running the system at a lower temperature increases the life expectancy of components and improves overall system reliability.

Failure rates

Table 1: Failure rates - system components on page 17 gives the failure rates for system components. In this table, "N/A" indicates that the failure rate is not available at this time.

Table 1: Failure rates - system components

Order code	Description	Failure rate per 10^6 hrs
NT5D21AA NT5D21DA	Core/Network Module AC Core/Network Module DC	0.25
NT6R14	Enhanced Processors:Enhanced Modular Option	0.454
NT6R15	Enhanced Processors:Modular Opt. EC and EC11	0.436

Order code	Description	Failure rate per 10^6 hrs
NT7D00AA NT7D00BA	Top Cap (AC) Top Cap (DC)	0.14
NT8D35AA NT8D35DC	Network Module AC Network Module DC	0.90
NT8D37AA NT8D37DC	Intelligent Peripheral Equipment IPE Module AC IPE Module DC	0.80
NTDK91	Chassis	1.70
NTDK92	Chassis Expander	1.70
NTDU14	Chassis	0.66
NTDU15	Chassis Expander	0.66
NTDU63AA	Call server chassis/backplane	0.33
NTDU97AAE5	HP 1U Server	7.5
NTHF77	80486 BASED VPS DSE-SYMPOSIUM EXPRESS CALL CENTRE HARDWARE	< 0.25
NTMP50FE	MG1000B, NA	< 0.25
NTVW00	iTouch Terminal Server	0.225

Chapter 6: Failure rates - power and cooling equipment

Contents

This section contains information on the following topics:

Overview

Failure rates are based on a circuit card ambient temperature of 40° C (104° F). This temperature is usually higher than the surrounding room temperature. Running the system at a lower temperature increases the life expectancy of components and improves overall system reliability.

Failure rates

Failure rates - power and cooling equipment on page 19 gives the failure rates for power and cooling equipment. In this table, "N/A" indicates that the failure rate is not available at this time.

Table 2: Failure rates - power and cooling equipment

Order code	Description	Failure rate per 10^6 hrs
A0355200	Power Failure Transfer Unit	5.70
MFA150	Modular Power System	8.330
MPP600	Modular Power Plant	8.330
NT4N49	Four Feed Power Distribution Unit (PDU)	0.045

Order code	Description	Failure rate per 10^6 hrs
NT4N57	PDU Assembly DC	1.266
NT5C06	MPR25 Modular Power Rectifier	8.33
NT5C07	MPR50 Modular Power Rectifier	8.33
NT5C10	MPS75 Modular Power Shelf	8.330
NT6D40	PE Power Supply DC	1.60
NT6D41	CE Power Supply DC	0.61
NT6D42	Ringing Generator DC	2.02
NT8D06	PE Power Supply AC	2.10
NT8D21	Ringing Generator AC	2.02
NT8D22	System Monitor	1.00
NT8D29	CE Power Supply AC	1.27
NT8D52AB NT8D52DD	Pedestal Blower Unit AC Pedestal Blower Unit DC	2.00 1.123
NT8D53	Power Distribution Unit AC	0.006
NTAK75	Battery Back-Up Unit	< 2.85
NTAK76	15-30 Minute Battery Back-up Unit	< 2.85
NTDK70	AC/DC Global Power Supply	1.660
NTDK72	DC/DC Power Supply	3.60
NTDK78	AC/DC Power Supply	3.60
NTWB16AA NTWB16BA	Candeo Power System (Large) – 50 A Rectifier Kit	8.33
NTWB16CA NTWB16DA	Candeo Power System (Small) – 30 A Rectifier Kit	8.33
QUA6A	Power Failure Transfer Unit (PFTU)	0.026
NT6D43	CE/PE Power Supply DC	1.5
NT7D03	Ringing Generator	1.81
NT7D14	CE/PE Power Supply	2.34
NTAK04	AC/DC Power Supply	5
NTDK70AB	AC/DC Power Supply	1.65
QPC163	48 VRegulator	0.16
QPC173	Power Monitor	1.14
QPC187	Ringing Generator	0.32

Order code	Description	Failure rate per 10^6 hrs
QRF12	48 V Rectifier	1.2
QRF8	48 V Rectifier	1.2
QRF9	48 V Rectifier	11

Chapter 7: Failure rates - circuit cards

Contents

This section contains information on the following topics:

Overview

Failure rates are based on a circuit card ambient temperature of 40° C (104° F). This temperature is usually higher than the surrounding room temperature. Running the system at a lower temperature increases the life expectancy of components and improves overall system reliability.

Failure rates

Table 3: Failure rates - circuit cards on page 23 gives the failure rates for circuit cards. In this table, "N/A" indicates that the failure rate is not available at this time.

Table 3: Failure rates - circuit cards

Order code	Description	Failure rate per 10^6 hrs
A0634492 A0634493	Fiber Remote Multi-IPE Redundant Option Single-mode Multi-mode	1.86
A0773054 A0773055	Fiber Remote Multi-IPE Multi-mode 1-4 Superloops 1-2 Superloops	1.86
A0773056 A0773059	Fiber Remote Multi-IPE Single-mode 1-4 Superloops 1-2 Superloops	1.86
NT1P61	Fiber Superloop Network Card	1.05

Order code	Description	Failure rate per 10^6 hrs
NT1P62	Fiber Controller Card	1.03
NT1P63	Electro-optical Interface	1.14
NT1R20	Off-Premises Station Analog Line Card	5.00
NT4N39	Call Processor Pentium IV®	1.99
NT4N48	cPCI® System Utility (Sys Util)	0.184
NT4N48BA	System Utility Card	0.26
NT4N65	cPCI® Core to Network Interface	0.266
NT5D11	Line side T1 Line Card	6.000
NT5D12	Dual DTI/PRI Card (DDP)	1.76
NT5D14	Line side T1 Line Card	4.6
NT5D15	Extended Universal Trunk Card (Japan)	3.4
NT5D26	Extended Universal Trunk Card	4.6
NT5D28	Extended Direct Inward Dial (DID) Card (India)	4.6
NT5D29	Central Office Trunk Card (India)	4.6
NT5D31	Extended Universal Trunk Card	0.490
NT5D33	Line-side E1 Line Card	0.454
NT5D34	Line-side E1 Line Card	0.454
NT5D39	Extended Universal Trunk Card (Japan)	0.445
NT5D49	Analog Message Waiting Line Card (Brazil)	6.0
NT5D51	Integrated Conference Bridge Card	< 7.5
NT5D60	CLASS Modem Card (XCMC)	5.8
NT5D62GA	MICB PC Card	1.095
NT5D64	Local Mini-Carrier Interface Card	3.125
NT5D65	Local Mini-Carrier Extender Card	2.200
NT5D67	Remote Mini-Carrier Interface Card	3.020
NT5D68	Local Mini-Carrier Interface Card	3.125
NT5D69	Local Mini-Carrier Extender Card	2.200
NT5D97	Dual DTI/PRI (DDP) Card	5.500
NT5G01AB	MICA KIT LARGE (ROHS)	< 7.5
NT5G03AB	MICA KIT (FLASH) SMALL (ROHS)	< 7.5
NT5G11	Integrated Call Assistant Card	< 7.5

Order code	Description	Failure rate per 10^6 hrs
NT5G15AAE5	Meridian Integrated Voice Services (MIVS)	< 7.5
NT5G31AB	MICA PCMCIA CARD (ROHS)	1.095
NT5G32AAE5	MICA PCMCIA CARD	1.095
NT5G33AAE5	MIVS PC Card	1.095
NT5G53BA	Meridian Integrated Personal Call Director (MIPCD) Kit	< 7.5
NT5G71AAE5	ICD REL 2 SPARE CARD (ROHS)	< 7.5
NT5G91BAE5	ICD PROG PCMCIA CARD	0.345
NT5G94AAE5	MICA PC Card	1.095
NT5G96AAE5	MIVS PC Card	1.095
NT5K02	Flexible Analog Line Card	6.0
NT5K07	Universal Trunk Card (Hong Kong)	4.30
NT5K09	Quad Density Receiver	1.50
NT5K17	Enhanced Dual Loop Buffer Card	19.0
NT5K18	Extended PPM CO Trunk Card	< 18
NT5K19	E and M/2280 Hz Trunk Card	< 18
NT5K21	XMFC/MFE Sender Receiver card	2.70
NT5K36	Direct Inward Dial/Direct Outward Dial Trunk Card	19.00
NT5K48	Tone Detector Card	0.487
NT5K50	E and M TIE Trunk Card (France)	< 18
NT5K70	Central Office Trunk Card (8 units)	< 4.5
NT5K71	Central Office Trunk Card (4 units)	4.60
NT5K72	E and M Trunk Card	19.00
NT5K75	D-Channel Handler Card	19.00
NT5K82	Central Office Trunk Card	< 4.5
NT5K83	E and M Trunk Card	< 18
NT5K84	Direct Inward Dial Trunk Card	< 2.5
NT5K90	Central Office Trunk Card (Denmark)	< 4.5
NT5K93	Central Office Trunk Card (Norway)	< 4.5
NT5K96	Flexible Analog Line Card without Message Waiting	6.0

Order code	Description	Failure rate per 10^6 hrs
NT5K99	Central Office Trunk Card (Spain)	4.60
NT6D16	D-Channel Handler Interface Card	0.948
NT6D70	S/T Interface Line Card (SILC)	3.0
NT6D71	U Interface Line Card (UILC)	4.0
NT6D73	Multipurpose ISDN Signaling Processor (MISP)	5.000
NT7D16	Data Access Card	4.07
NT7R51	Local Carrier Interface Card	2.40
NT7R52	Remote Carrier Interface Card	1.80
NT8D01BC NT8D01BD	Controller-4 Card SMT Controller-2 Card	1.86 1.86
NT8D02	Digital Line Card	.231
NT8D04	Superloop Network Card	2.32
NT8D09	Analog Message Waiting Line Card	5.80
NT8D14	Universal Trunk Card	3.40
NT8D15	E and M Trunk Card	3.70
NT8D16	Digitone Receiver Card	2.70
NT8D17	Conference/TDS Card	5.10
NTAG03	Central Office Trunk Card (Holland)	19.00
NTAG04	Central Office/Direct Inward Dial Trunk Card (Holland)	19.00
NTAG26	Extended Multi-frequency Receiver	5.500
NTAG54	DASS/DPNSS Card	0.969
NTAK02	SDI/DCH Circuit Card	2.90
NTAK09	1.5Mb DTI/PRI Card	2.60
NTAK10	2.0 Mb DTI	2.40
NTAK20	Clock Controller	0.54
NTAK79	2 MByte PRI card	< 7.80
NTAK93	D-Channel Handler Interface (DCHI) Daughterboard	1.60
NTBK22	MISP Circuit Card	7.66
NTBK50	2.0 Mb PRI	3.40

Order code	Description	Failure rate per 10^6 hrs
NTBK51	Downloadable D-Channel Handler (DDCH) Daughterboard	3.50
NTCG01	CIS Trunk Card	< 7.5
NTCG02	CIS Trunk Card	< 7.5
NTCK16	Generic Central Office Trunk Card	4.6
NTCK18	Central Office Trunk Card	< 4.5
NTCK22	Direct Inward Dial Trunk Card (Italy)	< 18
NTCK24	Central Office Trunk Card (Portugal)	< 4.5
NTDK16	48-port Digital Line Card	.693
NTDK23	10m Fiber Receiver Card	2.15
NTDK24	3km Fiber Daughterboard	2.19
NTDK25	3km FIber Receiver Card	2.15
NTDR68	Single Reach Line Card	3.900
NTDR69	Remote Gateway 9150	8.800
NTDR70	Reach Line Card (32-port)	6.100
NTDR71	Reach Line Card (32-port)	6.100
NTDU19	Expansion Kit	7.800
NTDU41	Voice Gateway Media Card	2.48
NTDW20AAE6	MG XPEC Card	1.36
NTDW53AAE6	CP DC single slot Card	N/A
NTDW54AAE6	CP DC double slot Card	N/A
NTDW56BAE6	CP MG 32 Card	N/A
NTDW59BAE6	CP MG 128 Card	N/A
NTDW60BAE5 NTDW98AAE5	MGC Card	1.36
NTDW61BAE5 NTDW99AAE5	CP PM Card (Call Server)	2.38
NTDW61BAE5 NTDW99AAE5	CP PM Card (Signaling Server)	4.96
NTDW62AAE5	DSP Daughterboard, 32-port	0.23
NTDW64AAE5	DSP Daughterboard, 96-port	0.23
NTDW78AAE5	DSP Daughterboard, 128-port	0.23

Order code	Description	Failure rate per 10^6 hrs
NTDW65AAE5	MC 32S Card	0.93
NTDW66BAE5	CP PM Card (Signaling Server)	4.96
NTMP50FD	Release 3.0 Branch Office PC Card	< 0.25
NTRA02	Extended Universal Trunk Card (China)	4.6
NTRA04	Flexible Message Waiting Line Card (China)	6.000
NTRA05	Flexible Analog Line Card (China)	6.000
NTRA06	Off-premises Station (OPS) Analog Line Card (China)	1.200
NTRA07	Pack Extended Conference & Tone & Digit Switch, XCT-C	0.526
NTRA10	Extended Universal Trunk Card (China)	< 4.6
NTRA11	Extended Digital Tone Receiver Card (China)	< 4.6
NTRB18	CP Mgate	2.700
NTRB21BA	TMDI Card	0.91
NTRB33	Fiber Junctor Interface (FIJI) Card	1.45
NTRB34	Core to Network Interface 3 Card (CNI-3)	0.53
NTRB37	Extended Universal Trunk Card (Hong Kong)	0.490
NTRB53	Downloadable Clock Controller Card	0.725
NTTK01	Single-port 100BaseF IP Expansion Daughterboard	7.800
NTTK02	Dual-port 100BaseF IP Expansion Daughterboard	7.800
NTTK25CA	Software Daughterboard	0.46
NTVQ01AA	ITGSA card	1.65
QPC43	Peripheral Signaling Card	1.73
QPC414	Network Card	3.00
QPC441	Three-Port Extender Card	2.00
NT6D65	Core to Network Interface Card	3
QPC417	Junctor Board	1.7
QPC709	Misc/Peripheral Signaling	2.9
QPC471	Clock Controller card (Vintage A-G)	2.44
	–Vintage H or later	1

Order code	Description	Failure rate per 10^6 hrs
NT6D63	I/O Processor Card	4.6

Chapter 8: Failure rates - terminal equipment

Contents

This section contains information on the following topics:

Overview

Failure rates are based on a circuit cardambient temperature of 40° C (104° F). This temperature is usually higher than the surrounding room temperature. Running the system at a lower temperature increases the life expectancy of components and improves overall system reliability.

Failure rates

Table 4: Failure rates - station equipment on page 31 gives the failure rates for terminal equipment. In this table, "N/A" indicates that the failure rate is not available at this time.

Table 4: Failure rates - station equipment

Order code	Description	Failure rate per 10^6 hrs
NE-DGQC-35	Line Cord	3.50
NE-G3AR-35	Handset	0.50
NE-G3DRN-3	Console Handset	0.50
NTAG58BB	PC Console Interface Unit (PCCIU)	0.472

Order code	Description	Failure rate per 10^6 hrs
NT7G10AA	Attendant Supervisory Module	0.041
NTEX00	IP Phone Key Expansion Module (KEM)	3.3
NT6G00	M2250 TDM Console	0.653
NTDU64AA	Fan/Alarm Module	0.01
NTDU65AA	Sparkle Power Supply	1.67
NTDU68AA	Blank	0.0
NTDU90	IP Phone 2001	5.760
NTDU92	IP Phone 2004	0.84
NTDU96	Avaya 2007 IP Deskphone	3.650
NTEX11	Avaya 2033 IP Conference Phone	5.260
NTMN31	M3901 Telephone	0.46
NTMN32	M3902 Telephone	0.57
NTMN33	M3903 Telephone	0.76
NTMN34	M3904 Telephone	1.23
NTMN35	M3905 Call Center Telephone	1.14
NTMN66	Key-based Expansion Unit	0.23
NTMN69	Meridian Communications Adapter	0.23
NTMN70	CTI Accessory (CTIA)	2.28
NTMN80	Power Supply for M3900-series Telephones	3.81
NTTQ4010	WLAN Handset 2210y only hav et	6.660
NTTQ4050	WLAN Handset 2210 Battery Pack	N/A
NTTQ4060	WLAN Handset 2210 Desktop Charger	6.660
NTTQ4101	WLAN Handset 2210/2211 Charger & WLAN Application Gateway 2246-64 Power Supply (North America)	6.660
NTTQ5010	WLAN Handset 2211	22.470
NTTQ5050	WLAN Handset 2211 Battery Pack	N/A
NTTQ5060	WLAN Handset 2211 Desktop Charger	22.470
NTTQ60	WLAN IP Telephony Manager 2245	3.750
NTZK06	M2006 Telephone	3.08
NTZK08	M2008 Telephone	3.10
NTZK16	M2616 Telephone	3.88

Order code	Description	Failure rate per 10^6 hrs
NTZK20	M2016S Telephone	5.87
NTZK22	M2216ACD-1 Telephone	4.68
NTZK23	M2216ACD-2 Telephone	5.37
	WLAN Handset 2212	5.5

Note:
The battery pack is a consumable and lasts typically for 500 charge cycles before needing to be replaced.

Chapter 9: Failure rates - cables

Contents

This section contains information on the following topics:

Overview

Failure rates are based on a circuit card ambient temperature of 40° C (104° F). This temperature is usually higher than the surrounding room temperature. Running the system at a lower temperature increases the life expectancy of components and improves overall system reliability.

Failure rates

There are many cables available from Avaya. The approximate failure rate for most cables, based on failures in time per billion hours (10^9), is 0.5. For a detailed listing of cables, see *Avaya Equipment Identification Reference (NN43001-254)*.

Chapter 10: Failure rates - miscellaneous components

Contents

This section contains information on the following topics:

Overview

Failure rates are based on a circuit card ambient temperature of 40° C (104° F). This temperature is usually higher than the surrounding room temperature. Running the system at a lower temperature increases the life expectancy of components and improves overall system reliability.

Failure rates

Table 5: Failure rates - miscellaneous equipment on page 37 gives the failure rates for miscellaneous equipment not included in other sections of this document. In this table, "N/A" indicates that the failure rate is not available at this time.

Table 5: Failure rates - miscellaneous equipment

Order code	Description	Failure rate per 10^6 hrs
NT5D52	Ethernet Adapter Card	< 7.5

Chapter 11: Converting NFT values to spares requirements

Table 6: Number of spares required on page 39 translates NFT values, calculated in Calculating spares requirements on page 14, to the number of spares required in stock.

Table 6: Number of spares required

NFT values		Spares required		NFT values		Spares required
From	To			From	To	
0	0.001	1		8.26	8.91	20
0.001	0.0452	2		8.91	9.57	21
0.0452	0.189	3		9.57	10.2	22
0.189	0.425	4		10.2	10.9	23
0.425	0.734	5		10.9	11.5	24
0.734	1.09	6		11.5	12.2	25
1.09	1.5	7		12.2	12.9	26
1.5	1.95	8		12.9	13.6	27
1.95	2.43	9		13.6	14.3	28
2.43	2.94	10		14.3	15	29
2.94	3.46	11		15	15.8	30
3.46	4.01	12		15.8	16.5	31
4.01	4.58	13		16.5	17.2	32
4.58	5.16	14		17.2	17.9	33
5.16	5.76	15		17.9	18.7	34
5.76	6.37	16		18.7	19.4	35
6.37	6.99	17		19.4	20.1	36
6.99	7.62	18		20.1	20.9	37
7.62	8.26	19		20.9	21.6	38
21.6	22.4	39		47.6	48.4	72
22.4	23.1	40		48.4	49.2	73

NFT values		Spares required		NFT values		Spares required
From	To			From	To	
23.1	23.9	41		49.2	50	74
23.9	24.6	42		50	50.9	75
24.6	25.4	43		50.9	51.7	76
25.4	26.2	44		51.7	52.5	77
26.2	26.9	45		52.5	53.3	78
26.9	27.7	46		53.3	54.2	79
27.7	28.5	47		54.2	55	80
28.5	29.2	48		55	55.8	81
29.2	30	49		55.8	56.6	82
30	30.8	50		56.6	57.5	83
30.8	31.6	51		57.5	58.3	84
31.6	32.4	52		58.3	59.1	85
32.4	33.2	53		59.1	60	86
33.2	33.9	54		60	60.8	87
33.9	34.7	55		60.8	61.6	88
34.7	35.5	56		61.6	62.5	89
35.5	36.3	57		62.5	63.3	90
36.3	37.1	58		63.3	64.1	91
37.1	37.9	59		64.1	65	92
37.9	38.7	60		65	65.8	93
38.7	39.5	61		65.8	66.6	94
39.5	40.3	62		66.6	67.5	95
40.3	41.1	63		67.5	68.3	96
41.1	41.9	64		68.3	69.2	97
41.9	42.7	65		69.2	70	98
42.7	43.5	66		70	70.9	99
43.5	44.3	67		70.9	71.7	100
44.3	45.2	68		71.7	72.5	101
45.2	46	69		72.5	73.4	102
46	46.8	70		73.4	74.2	103

NFT values		Spares required		NFT values		Spares required
From	To			From	To	
46.8	47.6	71		74.2	75.1	104
75.1	75.9	105		103.4	104.3	138
75.9	76.8	106		104.3	105.1	139
76.8	77.6	107		105.1	106	140
77.6	78.5	108		106	106.9	141
78.5	79.3	109		106.9	107.7	142
79.3	80.2	110		107.7	108.6	143
80.2	81	111		108.6	109.5	144
81	81.9	112		109.5	110.3	145
81.9	82.7	113		110.3	111.2	146
82.7	83.6	114		111.2	112.1	147
83.6	84.4	115		112.1	113	148
84.4	85.3	116		113	113.8	149
85.3	86.2	117		113.8	114.7	150
86.2	87	118		114.7	115.6	151
87	87.9	119		115.6	116.4	152
87.9	88.7	120		116.4	117.3	153
88.7	89.6	121		117.3	118.2	154
89.6	90.4	122		118.2	119.1	155
90.4	91.3	123		119.1	119.9	156
91.3	92.2	124		119.9	120.8	157
92.2	93	125		120.8	121.7	158
93	93.9	126		121.7	122.6	159
93.9	94.7	127		122.6	123.5	160
94.7	95.6	128		123.5	124.3	161
95.6	96.5	129		124.3	125.2	162
96.5	97.3	130		125.2	126.1	163
97.3	98.2	131		126.1	127	164
98.2	99.1	132		127	127.8	165
99.1	99.9	133		127.8	128.7	166

NFT values		Spares required		NFT values		Spares required
From	To			From	To	
99.9	100.8	134		128.7	129.6	167
100.8	101.7	135		129.6	130.5	168
101.7	102.5	136		130.5	131.4	169
102.5	103.4	137		131.4	132.2	170
132.2	133.1	171		161.5	162.4	204
133.1	134	172		162.4	163.3	205
134	134.9	173		163.3	164.1	206
134.9	135.8	174		164.1	165	207
135.8	136.6	175		165	165.9	208
136.6	137.5	176		165.9	166.8	209
137.5	138.4	177		166.8	167.7	210
138.4	139.3	178		167.7	168.6	211
139.3	140.2	179		168.6	169.5	212
140.2	141.1	180		169.5	170.4	213
141.1	141.9	181		170.4	171.3	214
141.9	142.8	182		171.3	172.2	215
142.8	143.7	183		172.2	173.1	216
143.7	144.6	184		173.1	174	217
144.6	145.5	185		174	174.9	218
145.5	146.4	186		174.9	175.8	219
146.4	147.3	187		175.8	176.7	220
147.3	148.1	188		176.7	177.5	221
148.1	149	189		177.5	178.4	222
149	149.9	190		178.4	179.3	223
149.9	150.8	191		179.3	180.2	224
150.8	151.7	192		180.2	181.1	225
151.7	152.6	193		181.1	182	226
152.6	153.5	194		182	182.9	227
153.5	154.4	195		182.9	183.8	228
154.4	155.2	196		183.8	184.7	229

NFT values		Spares required		NFT values		Spares required
From	To			From	To	
155.2	156.1	197		184.7	185.6	230
156.1	157	198		185.6	186.5	231
157	157.9	199		186.5	187.4	232
157.9	158.8	200		187.4	188.3	233
158.8	159.7	201		188.3	189.2	234
159.7	160.6	202		189.2	190.1	235
160.6	161.5	203		190.1	191	236
191	191.9	237		200	200.9	247
191.9	192.8	238		200.9	201.8	248
192.8	193.7	239		201.8	202.7	249
193.7	194.6	240		202.7	203.6	250
194.6	195.5	241		203.6	204.5	251
195.5	196.4	242		204.5	205.4	252
196.4	197.3	243		205.4	206.3	253
197.3	198.2	244		206.3	207.2	254
198.2	199.1	245		207.2	208.1	255
199.1	200	246		208.1	209	256

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