

CHANGE NOTICE

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7. System Designation ISS		8. Related ECP No./Title SSCN 005008			9. Contract No. NAS15-10000	10. Contractual Activity SSCN 005008	
11. Document Title Space Station Electromagnetic Emission and Susceptibility Req				12. Effectivity All Units			
THIS NOTICE INFORMS RECIPIENTS THAT THE DOCUMENT IDENTIFIED BY THE NUMBER (AND REVISION LETTER) SHOWN IN BLOCK 4 HAS BEEN CHANGED. THE PAGES CHANGED BY THIS CDCN BEING THOSE FURNISHED HERE-WITH AND CARRYING THE SAME DATE AS THIS CDCN. THE PAGES OF THE PAGE NUMBERS AND DATES LISTED BELOW IN THE SUMMARY OF CHANGED PAGES COMBINED WITH NON-LISTED PAGES OF THE ORIGINAL ISSUE OF THE REVISION SHOWN IN BLOCK 4 CONSTITUTE THE CURRENT VERSION OF THIS DOCUMENT.							
13. CDCN No.	14. Pages Changed (Indicate Deletions)				S*	A*	15. Date
017	Revision and History page Pages 3-3 and 3-6 Page A-1.				X X X		06/15/01
017	Page A-1a Pages C-120 and C-121.					X X	
	Order of Incorporation: DCN 017						
16. Technical Concurrence (Contracting Agency)					Date		

* "S" indicates supersedes earlier page. "A" indicates added page.

REVISION AND HISTORY PAGE

REV.	DESCRIPTION	PUB. DATE
-	SDR Version	03-07-94
B	Revision B (Reference SSCBD 000008 R1, Eff. 6-03-94) Revised to Transition from Freedom to ISS. Changes include extensive simplification of requirements and scope.	09-30-94
C	Revision C (SSCD 000263, EFF. 09-04-97) Administrative Update	01-29-97
	DCN 001 incorporates ECP 263 (Supplemental Release)	06-06-97
	DCN 002 incorporates SSCN 000777	07-20-98
	DCN 003 incorporates SSCN 001035	07-20-98
D	Revision D incorporates SSCN 001102	07-21-98
	DCN 004 incorporates SSCN 001462	02-17-99
	DCN 005 incorporates SSCN 001594	02-22-99
	DCN 006 incorporates SSCN 001662	06-15-99
	DCN 007 incorporates SSCN 001920	08-25-99
	DCN 008 incorporates SSCN 002045	08-25-99
	DCN 009 incorporates SSCN 002107	08-30-99
E	Revision E incorporates SSCN 002345	10-25-99
	DCN 010 incorporates SSCN 002485	04-06-00
	DCN 011 incorporates SSCD 003213 Eff. 06-28-00	04-13-01
	DCN 013 incorporates SSCN 003690 Eff. 11-08-00	04-13-01
	DCN 014 incorporates SSCN 003746 Eff. 11-15-00	04-13-01
	The following DCNs have been cancelled. The content of these DCNs have been incorporated into Revision F.	
	DCN 015 incorporates SSCN 004676 Administrative Cancel	
	DCN 018 incorporates SSCN 000256 Administrative Cancel	
F	Revision F incorporates SSCNs 000256, 004676, and 004140.	07-24-01
	DCN 017 incorporates SSCD 005008	08-31-01

3.2.1.2.2 CE03 LIMITS

Electromagnetic emissions shall not appear on dc power leads in excess of the following values as shown below for narrowband emissions: The limit shown below is for equipment drawing one amp or less. For equipment drawing more than one amp, the limit as shown in Table 3.2.1.2.2-1 shall be raised by $20 \times \log I$, where I equals the total dc current used by the equipment under test. See appendix C for exception (EMECB TIA-0024, EMECB TIA-0025, EMECB TIA-0028, EMECB TIA-0039, EMECB TIA-0043, EMECB TIA-0053, EMECB TIA-0057, EMECB TIA-0064, EMECB TIA-0082, EMECB TIA-0095, EMECB TIA-0098, EMECB TIA-0101, EMECB TIA-0112, EMECB TIA-0114, EMECB TIA-0115, EMECB TIA-0118, EMECB TIA-0123, EMECB TIA-0131, EMECB TIA-0132, EMECB TIA-0134, EMECB TIA-0141, EMECB TIA-0147, EMECB TIA-0153, EMECB TIA-0167, EMECB TIA-0174, EMECB TIA-0176, EMECB TIA-0199, EMEP TIA-0203, EMEP TIA-0206, EMEP TIA-0226, EMEP TIA-0228, EMEP TIA-0244, EMEP TIA-0258, EMEP TIA-0276, and EMEP TIA-0283) to this paragraph.

TABLE 3.2.1.2.2-1 CE03 EMISSION LIMITS

Frequency	Emissions
15 kHz-500 Hz	Decreasing log linearly with increasing frequency from 74 to 45 dB above 1 microampere
500 kHz-50 MHz	45 dB above 1 microampere

3.2.1.3 CE07, CONDUCTED EMISSIONS

Direct current power leads, spikes, time domain.

3.2.1.3.1 APPLICABILITY

CE07 is applicable for dc input power leads.

3.2.1.3.2 CE07 LIMITS

CE07 on and off and mode switching transients shall not exceed the envelope defined by the following values listed in Table 3.2.1.3.2-1. Repetitive on and off and mode switching transients shall not occur more frequently than every 100 milliseconds. See appendix C for exception (EMECB TIA-0014, EMECB TIA-0027, EMECB TIA-0049, EMECB TIA-0050, EMECB TIA-0055, EMECB TIA-0057, EMECB TIA-0072, EMECB TIA-0077, EMECB TIA-0079, EMECB TIA-0095, EMECB TIA-0104, EMECB TIA-0110, EMECB TIA-0111, EMECB TIA-0114, EMECB TIA-0116, EMECB TIA-0124, EMECB TIA-0143, EMECB TIA-0144, EMECB TIA-0155, EMECB TIA-0189, EMECB TIA-0198, EMEP TIA-0200, EMEP TIA-0202, EMEP TIA-0203, EMEP TIA-0228, EMEP TIA-0242, EMEP TIA-0282, EMEP TIA-0283, and EMEP TIA-0350) to this paragraph.

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3.2.2.3.2 CS06 LIMITS

The EUT shall not exhibit any malfunction, degradation of performance or deviation from specified indications beyond the tolerances indicated in the individual equipment or subsystem specification when the test spikes, each having the waveform shown on Figure 3.2.2.3.2-1, are applied sequentially to the dc power input leads. The values of E and t are given below. Each spike shall be superimposed on the powerline voltage waveform. See appendix C for exception (EMECB TIA-0088, EMECB TIA-0119, EMECB TIA-0124, EMECB TIA-0193, EMEP TIA-0204, and EMEP TIA-0242) to this paragraph.

3.2.3 RADIATED EMISSIONS

3.2.3.1 RE02, RADIATED EMISSIONS

Electric field, 14 kHz to 10 GHz (narrowband), 13.5 to 15.5 GHz.

3.2.3.1.1 APPLICABILITY

RE02 is applicable for radiated emissions from equipment and subsystems, cables (including control, pulse, intermediate frequency, power and antenna transmission lines) and interconnecting wiring of the test sample; for narrowband emissions, it applies at the fundamental frequencies and all spurious emissions including harmonics, but does not apply for radiation from antennas. This requirement is applicable for narrowband emissions from 14 kHz to 10 GHz and 13.5 to 15.5 GHz.

3.2.3.1.2 RE02 LIMITS

E-field emissions shall not be radiated in excess of those specified in the following paragraphs. Above 30 MHz, the limits shall be met for both horizontally and vertically polarized waves. Measurement shall be made in the peak detector mode. See appendix C for exception (EMECB TIA-0001, EMECB TIA-0044, EMECB TIA-0048, EMECB TIA-0052, EMECB TIA-0055, EMECB TIA-0057, EMECB TIA-0065, EMECB TIA-0073, EMECB TIA-0074, EMECB TIA-0075, EMECB TIA-0080, EMECB TIA-0095, EMECB TIA-0097, EMECB TIA-0102, EMECB TIA-0103, EMECB TIA-0105, EMECB TIA-0111, EMECB TIA-0133, EMECB TIA-0135, EMECB TIA-0137, EMECB TIA-0138, EMECB TIA-0142, EMECB TIA-0164, EMECB TIA-0165, EMECB TIA-0167, EMECB TIA-0170, EMECB TIA-0171, EMECB TIA-0183, EMECB TIA-0154, EMEP TIA-0160, EMECB TIA-0192, EMEP TIA-0203, EMEP TIA-0207, EMEP TIA-0208, EMEP TIA-0209, EMEP TIA-0212, EMEP TIA-0219, EMEP TIA-0220, EMEP TIA-0227, EMEP TIA-0237, EMEP TIA-0213, EMEP TIA-0229, EMEP TIA-0241, EMEP TIA-0252, EMEP TIA-0254, EMEP TIA-0256, EMEP TIA-0258, EMEP TIA-0261, EMEP TIA-0264, EMEP TIA-0269, EMEP TIA-0270, EMEP TIA-0276, EMEP TIA-0277, EMEP TIA-0283, EMEP TIA-0299, EMEP TIA-0307, EMEP TIA-0311, EMEP TIA-0314, EMEP TIA-0320, EMEP TIA-0332, EMEP TIA-0349) to this paragraph.

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APPENDIX A ABBREVIATIONS AND ACRONYMS

A	Ampere	
ABIT	Active BIT	
ac	alternating current	
AM	amplitude modulation	
amp	Ampere	
ARS	Atmosphere Revitalization System	
ASD	Area Smoke Detector	
ATC	Air Traffic Control	
ATU	Audio Terminal Unit	
AVIU	Advanced Video Interface Unit	DCN 017 ■
BCA	Battery Charger Assy	
BCDU	Battery Charge/Discharge Unit	
BIT	Built-in-Test	
BSA	Battery Stowage Assembly	
C	Conducted	
CBCS	Centerline Berthing Camera System	
CBPD	Continuous Blood Pressure Device	
CCPI	Camcorder/Compact Portable Light	DCN 017 ■
CDRA	Carbon Dioxide Removal Assembly	
CETA	Crew and Equipment Translation Aid	
CI	Configuration Item	
CMG	Control Moment Gyro	
COTS	Commercial-Off-the-Shelf	
CSA-CP	Compound Specific Analyzer-Combustion Products	

CWAI Caution & Warning Associated Indicator

CWR Collapsible Water Reservoir

EMEP TIA-0349 **DCN 017**

C.3.2.3.1.2 RE02 LIMITS **DCN 017**

Exception: The Advanced Video Interface Unit (AVIU) powered video recording system (AVIU PN SED33111493-302, V10 PN SEZ16103294-301, and V10 with Editor PN SEZ16103294-307), is allowed to exceed the SSP 30237, RE02 requirement of 56 dBuV/m by 1.3 dBuV/m at 0.02363 MHz, 4.3 dBuV/m at 0.5586 MHz, and 8.9 dBuV/m at 0.05628 MHz.

DCN 017

The Camcorder/Compact Portable Light (CCPI) powered video recording system (CCPI PN SED33111490-303, V10 PN SEZ16103294-301), is allowed to exceed the SSP 30237, RE02 requirement of 56 dBuV/m by 1.5 dBuV/m at 0.02363 MHz.

DCN 017

Rationale: These outages are insignificant and should cause no EME concerns. There are no ISS receivers at these frequencies.

DCN 017

EMEP TIA-0350 **DCN 017**

C.3.2.1.3.2 CE07 LIMITS **DCN 017**

Exception: The Advanced Video Interface Unit powered camcorder system (AVIU PN SED33111493-302, PD100A PN SEZ16103293-301, or the V10 with Editor PN SEZ16103294-307), is allowed to exceed the SSP 30237, CE07 requirements of +/-5.6 volts by 1.3 volts at approximately 106 microseconds, 6 volts at approximately 113 microseconds and 223 microseconds, +5.7 volts by 4.9 volts at approximately 146 microseconds, +5.8 volts by 3 volts at 206 microseconds, +6 volts by 6.8 volts at 766 microseconds, and +/-1.68 volts by 6.02 volts at 1.263 milliseconds.

DCN 017

The AVIU powered video recording system (AVIU PN SED33111493-302, V10 PN SEZ16103294-301, and V10 with Editor PN SEZ16103294-307), is allowed to exceed the SSP 30237, CE07 requirements of +11.0 volts by 0.8 volts at 20 microseconds, +5.6 volts by 0.3 volts at 51 microseconds, 7 volts at 170 microseconds, +5.7 volts by 2.7 volts at 171 microseconds, +5.8 volts by 6.4 volts at 211 microseconds, 6.7 volts at 226 microseconds, 3.6 volts at 258 microseconds, 5.4 volts at 282 microseconds, +5.9 volts by 6 volts at 271 microseconds, 1.4 volts at 280 microseconds, 1 volt at 341 microseconds, 8.5 volts at 496 microseconds, +6 volts by 4.6 volts at 408 microseconds, 4.9 volts at 531 microseconds, 0.2 volts at 711 microseconds, and 6.2 volts at 881 microseconds.

DCN 017

The Camcorder/Compact Portable Light powered camcorder system (CCPI PN SED33111490-303, PD100A PN SEZ16103293-301), is allowed to exceed the SSP 30237, CE07 requirements of +14 volts by 10.7 volts at 10 microseconds, +6 volts by 2.7 volts at 550 microseconds, and 3.1 volts at 780 microseconds.

DCN 017

The CCPI powered video recording system (CCPI PN SED33111490-303, V10 PN SEZ16103294-301), is allowed to exceed the SSP 30237, CE07 requirements of +1.68 volts by 3.62 volts at approximately 1.11 millisecond.

DCN 017

Rationale: The CE07 test is for use on a 120 volts system. The US segments are powered by 120 volts. The CE07 emissions are on tertiary power and will not affect the 120 Vdc secondary power bus. The video systems are criticality 3 items which do not cause loss of life, loss of the station, or loss of the mission.

DCN 017