Guide to the IEEE Radiation Effects Data Workshop (Draft)

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***Abstract*—Workshop Records from 1992-2005 have been reviewed and tables prepared which facilitate the search for radiation response data by part number, type, or effect.**

***Keywords*—radiation effects data workshop; index; response data**

I. Introduction

In this paper a Guide to the Radiation Effects Data Workshop (REDW) is provide. The Workshop Record (WR) published each year is a permanent archive of the REDW. It serves as a key source of radiation response data for the radiation effects community (REC). It also provides descriptions of radiation effects test facilities, standards, and environments. Although the record provides a cumulative index that can be used to locate papers based on author and title it is difficult to search for response data on a particular part number, type, or radiation effect. To simplify this search activity a table has been prepared for each WR from 1992-2005. In these tables the following information is provided for each paper:

- Cumulative Index Number
- Page number in Workshop Record
- Name of first author
- Part Number(s)
- Part Type(s)
- Manufacture(s)
- Terrestrial or Flight Data
- Radiation Effect(s) Evaluated
  - Total Ionizing Dose and Ionizing Source
  - Single Event Effects
  - Displacement Damage
- Facilities
- Standard
- Environment

II. Response Data Search

This paper contains the Table for REDW 2005, Table I. All of the tables are available on the NSREC website www.nsrec.com. The tables are provided in Portable Document Format (pdf) and a search can simply be performed using capabilities built into the Adobe Acrobat software. Once the paper(s) with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability of the response data.

III. Future Work

The tables contain approximately 4000 entries making it impossible to ensure 100% accuracy. It is planned over time to review each table for accuracy. The REDW 2005 Table provides a suffix highlighting the particle type used for single event effects testing. During the review for accuracy it is planned to add this detail to the other tables. Also, tables will be prepared for future Workshop Records.

IV. Conclusions

The Guide to the IEEE Radiation Effects Data Workshop (Draft) provides an efficient way to search for response data on a particular part number, type, or radiation effect.

V. Acknowledgment

The author gratefully acknowledges the financial support of MDA to attend NSREC.

VI. References

[1] Radiation Effects Data Workshop Records 1992-2005.

Manuscript received TBD.

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TABLE I
REDW 2005

REDW2005

Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects, H-heavy ion, P-proton, L-laser							Displacement Damage		Facilities	Standard	Environment
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
1, pp. 1-7	T. Page	K6R4008C1C	512K x 8 SRAM	Samsung	√						√H			√H								
		K6R4016C1C	256K x 16 SRAM	Samsung	√						√H			√H								
		K6R4008C1D	512K x 8 SRAM	Samsung	√									√H,N								
		CY7C1049B	512K x 8 SRAM	Cypress Semiconductor	√									√H								
		CY7C1021CV33	64K x 16 SRAM	Cypress Semiconductor	√									√H								
		BS616LV1015AI	64K x 16 SRAM	Brilliance	√									√H								
		IDT71V416L15	256K x 16 SRAM	Integrated Device Technology	√									√H								
2, pp. 8-12	J. George	OP113F	Operational Amplifier	Analog Devices	√							√H										
		OP484F	Operational Amplifier	Analog Devices	√							√H		√H								
		OP270	Operational Amplifier	Analog Devices	√							√H										
		OP400	Operational Amplifier	Analog Devices	√							√H				√H						
		OP467	Operational Amplifier	Analog Devices	√							√H										
		RH1014MW	Operational Amplifier	Linear Technology	√							√H										
		RH108AH	Operational Amplifier	Linear Technology	√							√H										
		RH118H	Operational Amplifier	Linear Technology	√							√H										
		LM124AJ	Operational Amplifier	National Semiconductor	√							√H										
3, pp. 13-19	J. Wert	WS57C49C	EPROM	Waferscale Integration	√									√H								
		AT27C1024	EPROM One Time Programmable	Atmel	√							√H										
		87C196	Microprocessor	Intel	√						√H			√H								
		80860	Microprocessor	Intel	√						√H			√H								
		OFM-1024	Optical Time Domain Reflectometer	Opto-Electronics Inc.	√						√P		√P									
		AD9850	Direct Digital Synthesis	Analog Devices	√						√H			√H								
4, pp. 20-25	J. Wert		LET Adjustment for Die Overlayers																		√	
5, pp. 26-35	M. O'Bryan	Culprit 8051	Microprocessor	IAµE	√						√H		√H	√H								
		P80C3224	Microprocessor	Intel	√						√H,P		√H,P	√H								
		DS80C320	Microprocessor	Dallas Semiconductor	√						√H,P		√H,P	√H								
		OPA128	Operational Amplifier	Burr-Brown	√							√H		√H								
		IFN423	FET	InterFet Corporation	√							√H		√H								
		SG1526	Pulse Width Modulator	Microsemi	√							√H		√H								
		LXA0387	G12 Process	LSI Logic	√						√H			√H								
		LXA0381	G12 Process	LSI Logic	√						√H			√H								
		Test structure	4Mb Flash Si Nano Crystal	Freescale	√						√H					√H						
		LS2805S	DC-DC Converter	International Rectifier	√							√H		√H	√H							
		RP21002	Solid State Power Controller	Data Devices Corporation	√							√H		√H	√H							
		RP21005	Solid State Power Controller	Data Devices Corporation	√							√H		√H	√H							
		RP210010	Solid State Power Controller	Data Devices Corporation	√							√H		√H	√H							
		53278	Solid State Power Controller	Micpac	√							√H		√H								
		LTC1419	14 bit ADC	Linear Technology	√						√H			√H								
		7872	14 bit ADC	Maxwell	√						√H			√H								
		MAX529	8 bit DAC	Maxim	√							√H		√H								
		XC2VP7	FPGA	Xilinx	√						√H		√H	√H								
		54ACTQ16245	Transceiver	National Semiconductor	√							√H		√H								
		EP1S25	FPGA	Altera	√						√H			√H								
		UT54LVDS031	Transmitter	Aeroflex	√							√H										
		UT54LVDS032	Receiver	Aeroflex	√							√H										
		28C010	EEPROM	Maxwell	√						√H			√H								
		HN58V1001	EEPROM	Renesas	√						√H			√H								
		Test structure	256M SDRAM	Maxwell	√									√H								
6, pp. 36-41	F. Irom	LTC1604	16 bit ADC	Linear Technology	√									√H								
		LTC1609	16 bit ADC	Linear Technology	√									√H								
		LTC1595	16 bit DAC	Linear Technology	√									√H								
		LTC1864	16 bit ADC	Linear Technology	√									√H								
		TC4423	Power MOSFET Driver	Microchip Technology	√									√H								
		DG412	Analog Switch	Maxim	√									√H								
		DG413	Analog Switch	Maxim	√									√H								
		AD9858	Direct Digital Synthesis	Analog Devices	√									√H								
		CY23FS08	Buffer	Cypress Semiconductor	√									√H								
		VPC1	Crystal Oscillator	VITE	√									√H								
7, pp. 42-45	D. Hiemstra	SMJ320C6701	Digital Signal Processor	Texas Instruments	√				√		√P											
8, pp. 46-50	D. Hiemstra	XC2V1000	FPGA	Xilinx	√						√P		√P									
9, pp. 51-56	F. Chayab	XC2VP4	FPGA	Xilinx	√						√P		√P									
10, pp. 57-64	R. Koga	A54SX32A(MEC)	FPGA	Actel	√						√H,P	√H,P										
		A54SX32A(UMC)	FPGA	Actel	√						√H,P	√H,P		√H								
		A54SX72A(MEC)	FPGA	Actel	√						√H,P	√H,P	√H									
		A54SX72A(UMC)	FPGA	Actel	√				√		√H,P	√H,P										
		A1460A	FPGA	Actel	√						√H											
		A500K130	FPGA	Actel	√								√H									
11, pp. 65-69	H. Rufenacht	TSP603r	Microprocessor	Atmel	√						√P											
12, pp. 70-78	R. Joshi	SMV320C6701	Digital Signal Processor	Texas Instruments	√						√H											
13, pp. 79-84	J. Ampe	ADS7816	12 bit ADC	Burr-Brown	√									√H								
		MAX189	12 bit ADC	Maxim	√									√H								
		MAX194	14 bit ADC	Maxim	√									√H								
		MAX145	12 bit ADC	Maxim	√		√				√H			√H								
		MAX1241	12 bit ADC	Maxim	√									√H								
		AD7475	12 bit ADC	Analog Devices	√									√L								
		MAX5121	12 bit DAC	Maxim	√		√				√H,L			√H,L								
		MAX5131	13 bit DAC	Maxim	√						√L			√L								
		MAX5133	13 bit DAC	Maxim	√						√L			√L								
		TLV5636	12 bit DAC	Texas Instruments	√						√L			√L								
		LT1453	12 bit DAC	Linear Technology	√						√L			√L								
		LT1659	12 bit DAC	Linear Technology	√						√L			√L								
		AD5320	12 bit DAC	Analog Devices	√						√L			√L								
14, pp. 85-92	J. Howard	Culprit 8051	Microprocessor	IAµE							√H		√H	√H								
		8052 MCS-51	Microprocessor	Dallas Semicinductor							√H		√H	√H								
		8052	Microprocessor	Intel							√H		√H	√H								
15, pp.93-97	C. Hafer	RadClock	Clock Generator	Aeroflex	√		√					√H		√H								
16, pp. 98-101	M. Hartwell	ASIC Library Element	LVDS Receiver											√H								
		ASIC Library Element	LVDS Driver											√H								
		ASIC Library Element	Phase Lock Loop									√H		√H								
17, pp. 102-109	J. Lauenstein		Radiation Belt Model																			√
18, pp. 110-116	S. Kotntz	ISS MDM	DRAM			√					√											√
19, pp. 117-121	B. Haugerud	Test structure	0.12 and 0.24 µm nFET of SiGe 8HP	IBM	√				√													
20, pp. 122-126	V. Re	Test structure	0.13 µm CMOS HCNQS9	STMicroelectronics	√		√															
21, pp. 127-131	T. Miyahira	LP2953	Low Dropout Voltage Regulator		√			√	√													
22. pp. 132-137	Y. Zong	ADM692	Microprocessor Supervisor	Analog Devices	√		√												√			
		MAX690	Microprocessor Supervisor	Maxim	√		√												√			
		MAX1232	Microprocessor Supervisor	Maxim	√		√												√			
		MAX6304	Microprocessor Supervisor	Maxim	√		√												√			
23, pp. 138-143	F. Franco	REF02	Voltage Reference	Analog Devices	√														√			
		REF02	Voltage Reference	Maxim	√														√			
		REF102	Voltage Reference	Texas Instruments	√														√			
		ADR291	Voltage Reference	Analog Devices	√														√			
		ADR420	Voltage Reference	Analog Devices	√														√			
		ADR430	Voltage Reference	Analog Devices	√														√			
24. pp. 144-148	R. Chavez	LP2951	Voltage Regulator	National Semiconductor	√			√														
		LM2941	Voltage Regulator	National Semiconductor	√			√														
		OP97	Operational Amplifier	Analog Devices	√			√														
		DAC8413	12 bit DAC	Analog Devices	√			√														
		HYSE117RH	Voltage Regulator	Intersil	√			√														
		RH137	Voltage Regulator	Linear Technology	√			√														
25. pp. 149-155	D. Cochran	MAX529	8 bit DAC	Maxim	√		√															
		AD574	12 bit DAC	Analog Devices	√		√															
		AD7545	12 bit ADC	Analog Devices	√		√															
		AD7846SQ	16 bit ADC	Analog Devices	√		√															
		OP27	Operational Amplifier	Analog Devices	√			√														
		OP27A	Operational Amplifier	Analog Devices	√			√														
		OP200	Operational Amplifier	Analog Devices	√			√														
		OP42AZ	Operational Amplifier	Analog Devices	√			√														
		OP400	Operational Amplifier	Analog Devices	√			√														
		OP77	Operational Amplifier	Analog Devices	√			√														
		AD822	Operational Amplifier	Analog Devices	√			√														
		AD744	Operational Amplifier	Analog Devices	√			√														
		AFL2903R3S	DC-DC Converter	Advanced Analog	√		√															
		MAX724ECK	Switchmode Regulator	Maxim	√		√															
		54ACTQ16245	Transceiver	National Semiconductor	√		√															
		HN58C1001T15	EEPROM	Renesas	√		√															
		AD584	Voltage Reference	Analog Devices	√			√														
		LXA0387	ASIC 512K SRAM	LSI Logic	√		√															
		C-2 LED Custom	LED InGaN blue	Micropac	√													√				
		TCM405 Custom	LED GaN UV	Micropac	√													√				
		62087-301	LED	Micropac	√													√				
		61055-305	PT Encoder	Micropac	√													√				
26, pp. 156-162	P. Layton	KM29N3200	32M Flash	Samsung	√						√H		√H									
		48SD1616	256M SDRAM	Maxwell	√		√							√H								
		9240LP	14 bit ADC	Maxwell	√		√															
		8143	12 bit DAC	Maxwell	√		√															
		Si9435	MOSFET	Fairchild	√		√															
		7545A	12 bit DAC	Maxwell	√		√															
		7809LP	16 bit DAC	Maxwell	√		√															
		28C010T	1M EEPROM	Maxwell	√		√															
27, pp. 163-169	P. Lee	KAI-2000M	Charge Coupled Device	Kodak	√		√											√				
28, pp. 170-174	R. Lowell	H-1RG	PIN Diode Array	Rockwell Scientific Company	√		√											√				
29, pp. 175-178	E. Cascio		NPTC proton beam properties																	√		