

## SA-1 Voltage Tests

Voltage	Name	PCB Serial	Unlock success rate	ROM integrity checks	Current Usage	Notes
4.5	Super Mario RPG	SHVC-1L5B-02	100%	100%	45mA	
	Dragon Ball Z	SHVC-1L0N3S-20	100%	100%	46mA	
	Tengai Makyou Zero	SHVC-LDH3C-01	100%	92%	25mA	Low current usage
	Pachi-Slot Monogatari	SHVC-1L0B-01	100%	96%	60mA	
	Kakinoki Shougi	SHVC-1L8B-01	100%	100%	57mA	
	Super Bomber Man - Panic Bomber W	SHVC-1L0N3S-01	100%	100%	52mA	
	PGA European Tour (Europe)	SHVC-1L3B-20	100%	92%	52mA	
	Habu Meijin no Omoshiro Shougi	SHVC-1L5B-01	100%	100%	52mA	
	Hoshi no Kirby 3 (Japan)	SHVC-1L5B-20	100%	92%	54mA	
	Super Robot Taisen Gaiden - Masou Kishin	SHVC-1L5B-10	100%	100%		
4.6	Super Mario RPG	SHVC-1L5B-02	100%	90%	59mA	
	Dragon Ball Z	SHVC-1L0N3S-20	100%	96%	59mA	
	Tengai Makyou Zero	SHVC-LDH3C-01	100%	88%	38mA	
	Pachi-Slot Monogatari	SHVC-1L0B-01	100%	96%	68mA	
	Kakinoki Shougi	SHVC-1L8B-01	100%	100%	67mA	
	Super Bomber Man - Panic Bomber W	SHVC-1L0N3S-01	100%	96%	64mA	
	PGA European Tour (Europe)	SHVC-1L3B-20	100%	100%	62mA	
	Habu Meijin no Omoshiro Shougi	SHVC-1L5B-01	100%	96%	64mA	
	Hoshi no Kirby 3 (Japan)	SHVC-1L5B-20	100%	92%	66mA	
	Super Robot Taisen Gaiden - Masou Kishin	SHVC-1L5B-10	100%	100%	62mA	
4.7	Super Mario RPG	SHVC-1L5B-02	100%	76%	64mA	
	Dragon Ball Z	SHVC-1L0N3S-20	100%	100%	64mA	
	Tengai Makyou Zero	SHVC-LDH3C-01	100%	84%	42mA	
	Pachi-Slot Monogatari	SHVC-1L0B-01	100%	100%	71mA	
	Kakinoki Shougi	SHVC-1L8B-01	100%	100%	74mA	
	Super Bomber Man - Panic Bomber W	SHVC-1L0N3S-01	100%	100%	71mA	
	PGA European Tour (Europe)	SHVC-1L3B-20	100%	100%	71mA	
	Habu Meijin no Omoshiro Shougi	SHVC-1L5B-01	100%	100%	71mA	
	Hoshi no Kirby 3 (Japan)	SHVC-1L5B-20	100%	100%	71mA	
	Super Robot Taisen Gaiden - Masou Kishin	SHVC-1L5B-10	100%	100%	65mA	
4.8	Super Mario RPG	SHVC-1L5B-02	100%	100%	67mA	
	Dragon Ball Z	SHVC-1L0N3S-20	100%	100%	67mA	
	Tengai Makyou Zero	SHVC-LDH3C-01	100%	92%	44mA	
	Pachi-Slot Monogatari	SHVC-1L0B-01	100%	100%	74mA	
	Kakinoki Shougi	SHVC-1L8B-01	100%	100%	79mA	
	Super Bomber Man - Panic Bomber W	SHVC-1L0N3S-01	100%	92%	74mA	
	PGA European Tour (Europe)	SHVC-1L3B-20	100%	100%	72mA	
	Habu Meijin no Omoshiro Shougi	SHVC-1L5B-01	100%	100%	74mA	
	Hoshi no Kirby 3 (Japan)	SHVC-1L5B-20	100%	90%	74mA	
	Super Robot Taisen Gaiden - Masou Kishin	SHVC-1L5B-10	100%	95%	69mA	
4.9	Super Mario RPG	SHVC-1L5B-02	100%	100%	73mA	
	Dragon Ball Z	SHVC-1L0N3S-20	100%	92%	67mA	
	Tengai Makyou Zero	SHVC-LDH3C-01	100%	92%	46mA	
	Pachi-Slot Monogatari	SHVC-1L0B-01	100%	100%	77mA	
	Kakinoki Shougi	SHVC-1L8B-01	100%	100%	80mA	
	Super Bomber Man - Panic Bomber W	SHVC-1L0N3S-01	100%	100%	77mA	
	PGA European Tour (Europe)	SHVC-1L3B-20	100%	100%	76mA	
	Habu Meijin no Omoshiro Shougi	SHVC-1L5B-01	100%	100%	79mA	
	Hoshi no Kirby 3 (Japan)	SHVC-1L5B-20	100%	80%	77mA	
	Super Robot Taisen Gaiden - Masou Kishin	SHVC-1L5B-10	100%	95%	72mA	
5.0	Super Mario RPG	SHVC-1L5B-02	100%	100%	74mA	
	Dragon Ball Z	SHVC-1L0N3S-20	100%	96%	72mA	
	Tengai Makyou Zero	SHVC-LDH3C-01	100%	88%	47mA	
	Pachi-Slot Monogatari	SHVC-1L0B-01	100%	96%	80mA	
	Kakinoki Shougi	SHVC-1L8B-01	100%	100%	84mA	
	Super Bomber Man - Panic Bomber W	SHVC-1L0N3S-01	100%	96%	79mA	
	PGA European Tour (Europe)	SHVC-1L3B-20	100%	92%	79mA	
	Habu Meijin no Omoshiro Shougi	SHVC-1L5B-01	100%	100%	84mA	High current usage
	Hoshi no Kirby 3 (Japan)	SHVC-1L5B-20	100%	90%	79mA	
	Super Robot Taisen Gaiden - Masou Kishin	SHVC-1L5B-10	100%	90%	76mA	
5.1	Super Mario RPG	SHVC-1L5B-02	0%	0%	FAIL	
	Dragon Ball Z	SHVC-1L0N3S-20	100%	100%	75mA	
	Tengai Makyou Zero	SHVC-LDH3C-01	100%	88%	51mA	
	Pachi-Slot Monogatari	SHVC-1L0B-01	100%	96%	84mA	
	Kakinoki Shougi	SHVC-1L8B-01	100%	96%	87mA	
	Super Bomber Man - Panic Bomber W	SHVC-1L0N3S-01	100%	100%	82mA	
	PGA European Tour (Europe)	SHVC-1L3B-20	100%	96%	82mA	
	Habu Meijin no Omoshiro Shougi	SHVC-1L5B-01	0%	0%	—	
	Hoshi no Kirby 3 (Japan)	SHVC-1L5B-20	100%	100%	84mA	
	Super Robot Taisen Gaiden - Masou Kishin	SHVC-1L5B-10	100%	100%	80mA	
5.2	Super Mario RPG	SHVC-1L5B-02	0%	0%	—	
	Dragon Ball Z	SHVC-1L0N3S-20	100%	88%	77mA	
	Tengai Makyou Zero	SHVC-LDH3C-01	100%	88%	54mA	
	Pachi-Slot Monogatari	SHVC-1L0B-01	100%	100%	87mA	
	Kakinoki Shougi	SHVC-1L8B-01	0%	0%	—	
	Super Bomber Man - Panic Bomber W	SHVC-1L0N3S-01	0%	0%	—	
	PGA European Tour (Europe)	SHVC-1L3B-20	0%	0%	—	
	Habu Meijin no Omoshiro Shougi	SHVC-1L5B-01	0%	0%	—	
	Hoshi no Kirby 3 (Japan)	SHVC-1L5B-20	0%	0%	—	
	Super Robot Taisen Gaiden - Masou Kishin	SHVC-1L5B-10	0%	0%	—	
5.3	Super Mario RPG	SHVC-1L5B-02	0%	0%	—	
	Dragon Ball Z	SHVC-1L0N3S-20	0%	0%	—	
	Tengai Makyou Zero	SHVC-LDH3C-01	100%	88%	60mA	
	Pachi-Slot Monogatari	SHVC-1L0B-01	0%	0%	—	
	Kakinoki Shougi	SHVC-1L8B-01	0%	0%	—	
	Super Bomber Man - Panic Bomber W	SHVC-1L0N3S-01	0%	0%	—	
	PGA European Tour (Europe)	SHVC-1L3B-20	0%	0%	—	
	Habu Meijin no Omoshiro Shougi	SHVC-1L5B-01	0%	0%	—	
	Hoshi no Kirby 3 (Japan)	SHVC-1L5B-20	0%	0%	—	
	Super Robot Taisen Gaiden - Masou Kishin	SHVC-1L5B-10	0%	0%	—	

Current usage is measured at the power supply. No current is measured at the USB port.  
 Unlocks simply checks for SA-1 unlock and reading of header data and checksum validation.  
 Unlocks are performed over a sample size of 50 runs per test.

ROM integrity checks verify the entire game data section and checks its MD5 value.  
 ROM integrity checks are performed over a sample size of at least 25 iterations, with a maximum of 100 iterations.  
 Fails on ROM integrity checks might appear due to incorrect timings in reading or bank switching.