



A 12-bit control word is built from the control bits of the last two memory words of a 2048-word image as follows:

Word No. (0-2047)	D15	D14	D13	D12	D11	D10
2046	n	n	n	n	n	n
2047	c1	c0	m	m	m	m

The high two bits (c1,c0) are a command, and the low ten bits (m,n) are a value used by the command.

c1 c0 Command

1	1	NOP (continue at next address for next image)
1	0	Repeat this image mmmmmnnnnnn (0-3FFh, 0-1023d) more times
0	1	Go to image mmmmmnnnnnn (0-1FFh, 0-511d) next
0	0	(Reserved)

RSS ignores the high six bits of words 0-2045 of each image. (I recommend setting these bits to 1, so that they will not be mistaken for commands, and because EPROM will usually program faster if unused bits are 1.)

Bits D15-D8 (the MS byte) are in PROM U5; bits D7-D0 (the LS byte) are in PROM U4.

#### READOUT TIMING

The first bit of the serial data stream from the RSS becomes valid 200-250 nanoseconds after the rising edge of the start pulse; the data then continues for 2087 microseconds (one image).

#### SPIN SYNCHRONIZATION

A rising edge on the SPIN SYNC IN connector (J3) will cause the RSS to start reading from memory address 00000h when the next start pulse arrives from the ADP.

#### CONNECTORS

J1 - Data (same as RAS & SAS)  
J2 - Power (same as RAS & SAS)  
J3 - Spin Sync In. BNC. Rising TTL edge causes readout to start from beginning of memory at next start pulse.

#### LEDs

+14.5V, +12V, +5VD, +5VA, -5V - On when corresponding power service is on at J2. Each draws about 9 milliamps.

TEST2, TEST1 - Blinks when test LED is activated.

SPIN SYNC - Blinks when rising edge arrives at SPIN SYNC IN connector.

START - Blinks at start of image readout (STRT from ADP).

RDOUT CLK - Blinks when RSS is clocking out readout data (CLK to ADP).

FSR - Blinks when RSS is clocking out readout data (FSR to ADP).

A, B - (spares).

MODE2, MODE1, MODE0 - Show state of M2, M1, M0 signals from ADP.

#### SWITCHES

RESET - Resets RSS logic as at power on. (In addition RSS has an internal R-C power-on reset lasting about 100 milliseconds.)

RUN/STOP - RUN = Normal operation; STOP = ignore start and sync signals (don't do readout).

SAS/RAS - (spare).

IMAGE - (spare).

E - (spare).

OPT2, OPT1, OPT0 - Same as jumpers on SAS.

#### POWER CONSUMPTION

Load resistors in the RSS cause it to draw the following approximate power supply currents

	<u>RAS</u>	<u>SAS</u>
+14.5V:	16 mA	12 mA
+12V:	50 mA	14 mA
+5VD:	134 mA	134 mA
+5VA:	44 mA	40 mA

#### PROMs

Two 27C080 OTP EPROM, 120 ns or faster, PLCC-32 package, Atmel AT27C080-12JC or equivalent.

#### REVISIONS

B 1999-07-30

C 2000-09-21 Delete IMAGE switch; double EPROM; add load resistors.