

# **BRIAN**

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# **INSTRUMENTS**

## **BRIKON 723-4M/QT**

**WITH INTELLIGENT SERIES/CATEYE ALIGNMENT SUPPORT**

**CONFIGURATION WORKSHEET AND PROGRAMMING INSTRUCTIONS**

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## TEST TABLE LAYOUT

The **BRIKON 723-4M/QT** Tester/Analyzer provides the capability to test commercial configurations of 8", 5 1/4" and 3 1/2" FDD drive styles, including double speed/frequency drives used in **SOFTWARE DUPLICATION** environments. The **TEST TABLES** are preset for the most popular drive configurations along with pass/fail limits, test tracks, etc. as shown below.

**CONFIGURATION: SOFTWARE DUPLICATION - INTELLIGENT SERIES**  
**VERSION #: 4123 1122 2025 2026 1309**

TABLE	DRIVE TYPE						
	SIZE INCHES	SPEED RPM	DATA RATE KBS	TRACKS	HEADS	UNFORMATTED CAPACITY	GENERIC TERM
00	5 1/4	720	1000	80	2	1.6 MB	2XSDS1.2M
01	5 1/4	300	250	40	2	0.5 MB	XT360K
02	5 1/4	300	250	80	2	1.0 MB	XT720K
03	5 1/4	360	500	80	2	1.6 MB	AT1.2MEG
04	3 1/2	300	250	80	2	1.0 MB	XT720K
05	3 1/2	300	500	80	2	2.0 MB	1.4MEG
06	3 1/2	600	500	80	2	1.0 MB	HYPER720K
07	3 1/2	300	1000	80	2	4.0 MB	4MEG
08	5 1/4	180	500	80	2	3.2 MB	STD
09	3 1/2	720	1000	80	2	1.2 MB	2XSDS/1.2M
10	5 1/4	600	500	40	2	0.5 MB	2XSDS/360K
11	5 1/4	600	500	80	2	1.0 MB	2XSDS/720K
12	5 1/4	360	500	80	2	1.6 MB	1XSDS/1.2M
13	5 1/4	600	833	80	2	1.6 MB	1.7XSDS/1.2M
14	3 1/2	600	500	80	2	1.0 MB	2XSDS/720K
15	3 1/2	300	500	80	2	2.0 MB	1XSDS/1.4M
16	3 1/2	600	1000	80	2	2.0 MB	2XSDS/1.4M
17	3 1/2	300	1000	80	2	4.0 MB	1XSDS/2.8M
18	3 1/2	360	500	80	2	1.6 MB	AT/1.2MEG
19	3 1/2	300	1000	80	2	4.0 MB	4MEG SONY

For Configuration details, please refer to the attached **CONFIGURATION WORKSHEET AND PROGRAMMING INSTRUCTIONS** where all parameters for each **PARAMETER TABLE** are defined.

## PROGRAMMING INFORMATION

The **BRIKON 723-4M/QT** has 20 **TEST TABLES** that may be altered by the user. This is done by modifying **EPROM** memory locations as shown in the attached **DRIVE CONFIGURATION MAP**. All alterable locations are stored in the **EPROM (27256)** located on the **Z-80 Board**.

When making temporary changes, using the **RAM** function, the **RAM** location for the particular parameter to be modified is also included as part of the address information provided. The **DRIVE CONFIGURATION MAP** defines the **EPROM** and **RAM** locations of each modifiable parameter along with additional notes, if required.

**ALL LOCATIONS ARE IN HEXADECIMAL. ALL VALUES IN THESE LOCATIONS ARE PRESENTED AND ENTERED IN HEXADECIMAL. ALL TWO BYTE PARAMETERS ARE ENTERED LSB FIRST.**

BRIKON 723-4M/QT - TABLES 00-09

DRIVE CONFIGURATION MAP

PARAMETER	RANGE	RAM	TB00	TB01	TB02	TB03	TB04	TB05	TB06	TB07	TB08	TB09	NOTE
TEST TABLE NUMBER	00-19	N/A	7500	755D	75BA	7617	7674	76D1	772E	778B	77E8	7845	
NUMBER OF HEADS	1,2,4	F08D	7501	755E	75BB	7618	7675	76D2	772F	778C	77E9	7846	2
NUMBER OF TRACKS	1-255	F08E	7502	755F	75BC	7619	7676	76D3	7730	778D	77EA	7847	
DRIVE TYPE	00-FFH	F08F	7503	7560	75BD	761A	7677	76D4	7731	778E	77EB	7848	3
NOMINAL STEP RATE **	1-255	F091	7505	7562	75BF	761C	7679	76D6	7733	7790	77ED	784A	10
MAXIMUM STEP RATE **	1-255	F093	7507	7564	75C1	761E	767B	76D8	7735	7792	77EF	784C	10
MINIMUM STEP RATE **	1-255	F095	7509	7566	75C3	7620	767D	76DA	7737	7794	77F1	784E	10
DRIVE SELECT	0-FH	F097	750B	7568	75C5	7622	767F	76DC	7739	7796	77F3	7850	4
TEST CONTROL BYTE	00-FFH	F098	750C	7569	75C6	7623	7680	76DD	773A	7797	77F4	7851	5
POWER CONTROL	0-FH	F099	750D	756A	75C7	7624	7681	76DE	773B	7798	77F5	7852	6
MUX CONTROL	00-FFH	F09A	750E	756B	75C8	7625	7682	76DF	773C	7799	77F6	7853	7
PRINTER OUTPUT CONTROL	0-FH	F0A2	7516	7573	75D0	762D	768A	76E7	7744	77A1	77FE	785B	13
CONFIGURATION BYTE	00-FFH	F0E2	7556	75B3	7610	766D	76CA	7727	7784	77E1	783E	789B	8
ALIGN MODE	00-02	F0E3	7557	75B4	7611	766E	76CB	7728	7785	77E2	783F	789C	22

SYSTEM TEST MAP

PARAMETER	RANGE	RAM	TB00	TB01	TB02	TB03	TB04	TB05	TB06	TB07	TB08	TB09	NOTE
# OF INDEX TESTS	0-15	F0A4	7518	7575	75D2	762F	768C	76E9	7746	77A3	7800	785D	9
# OF WINDOW MARGIN TESTS	0-15	F0A5	7519	7576	75D3	7630	768D	76EA	7747	77A4	7801	785E	9
# OF ASYMMETRY TESTS	0-15	F0A6	751A	7577	75D4	7631	768E	76EB	7748	77A5	7802	785F	9
# OF WRITE/READ TESTS	0-15	F0A7	751B	7578	75D5	7632	768F	76EC	7749	77A6	7803	7860	9
# OF STEP TESTS	0-15	F0A8	751C	7579	75D6	7633	7690	76ED	774A	77A7	7804	7861	9
# OF READ TESTS	0-15	F0A9	751D	757A	75D7	7634	7691	76EE	774B	77A8	7805	7862	9
INDEX PERIOD LOW **	1-5000	F0B3	7527	7584	75E1	763E	769B	76F8	7755	77B2	780F	786C	10
INDEX PERIOD HIGH **	1-5000	F0B5	7529	7586	75E3	7640	769D	76FA	7757	77B4	7811	786E	10
INDEX PULSE WIDTH LOW	1-255	F0B7	752B	7588	75E5	7642	769F	76FC	7759	77B6	7813	7870	10
INDEX PULSE WIDTH HIGH	1-255	F0B8	752C	7589	75E6	7643	76A0	76FD	775A	77B7	7814	7871	10
DATA MARGIN LOW **	1-4000	F0B9	752D	758A	75E7	7644	76A1	76FE	775B	77B8	7815	7872	11
CLOCK MARGIN LOW **	1-4000	F0BB	752F	758C	75E9	7646	76A3	7700	775D	77BA	7817	7874	11
ASYMMETRY HIGH **	1-4000	F0BD	7531	758E	75EB	7648	76A5	7702	775F	77BC	7819	7876	11
W/R SUBTEST CONTROL	00-FFH	F0BF	7533	7590	75ED	764A	76A7	7704	7761	77BE	781B	7878	12
READ RETRIES + 1	0-FH	F0C0	7534	7591	75EE	764B	76A8	7705	7762	77BF	781C	7879	12

ANALOG MAP

PARAMETER	RANGE	RAM	TB00	TB01	TB02	TB03	TB04	TB05	TB06	TB07	TB08	TB09	NOTE
# OF ECCENTRICITY TESTS	0-15	F0AA	751E	757B	75D8	7635	7692	76EF	774C	77A9	7806	7863	14
# OF OPTALIGN HYSTERESIS TESTS	0-15	F0AB	751F	757C	75D9	7636	7693	76F0	774D	77AA	7807	7864	14
# OF INDEX TO DATA TESTS	0-15	F0AC	7520	757D	75DA	7637	7694	76F1	774E	77AB	7808	7865	14
# OF AZIMUTH TESTS	0-15	F0AD	7521	757E	75DB	7638	7695	76F2	774F	77AC	7809	7866	14
# OF RESOLUTION TESTS	0-15	F0AE	7522	757F	75DC	7639	7696	76F3	7750	77AD	780A	7867	14
# OF STEP SETTLE TIME TESTS	0-15	F0AF	7523	7580	75DD	763A	7697	76F4	7751	77AE	780B	7868	14
# OF HEAD LOAD SETTLE TESTS	0-15	F0B0	7524	7581	75DE	763B	7698	76F5	7752	77AF	780C	7869	14
# OF TRACK 00 SENSOR TESTS	0-15	F0B1	7525	7582	75DF	763C	7699	76F6	7753	77B0	780D	786A	14
# HEAD AMPLITUDE TESTS	0-15	F0B2	7526	7583	75E0	763D	769A	76F7	7754	77B1	780E	786B	14
ECCENTRICITY TRACK	0-255	F09B	750F	756C	75C9	7626	7683	76E0	773D	779A	77F7	7854	
ALIGNMENT TRACK	0-255	F09C	7510	756D	75CA	7627	7684	76E1	773E	779B	77F8	7855	
OPTALIGN OFFSET TRACKS	0-255	F09D	7511	756E	75CB	7628	7685	76E2	773F	779C	77F9	7856	
AZIMUTH TRACK	0-255	F09E	7512	756F	75CC	7629	7686	76E3	7740	779D	77FA	7857	
RESOLUTION TRACK FOR 1F	0-255	F09F	7513	7570	75CD	762A	7687	76E4	7741	779E	77FB	7858	
RESOLUTION TRACK FOR 2F	0-255	F0A0	7514	7571	75CE	762B	7688	76E5	7742	779F	77FC	7859	
HEAD SETTLE TRACK	0-255	F0A1	7515	7572	75CF	762C	7689	76E6	7743	77A0	77FD	785A	
INDEX TO DATA TRACK A	0-255	F0C4	7538	7595	75F2	764F	76AC	7709	7766	77C3	7820	787D	16
INDEX TO DATA TRACK B	0-255	F0C5	7539	7596	75F3	7650	76AD	770A	7767	77C4	7821	787E	16
INDEX TO DATA TRACK C	0-255	F0C6	753A	7597	75F4	7651	76AE	770B	7768	77C5	7822	787F	16
INDEX TO DATA HIGH **	0-999	F0C7	753B	7598	75F5	7652	76AF	770C	7769	77C6	7823	7880	
INDEX TO DATA LOW **	0-999	F0C9	753D	759A	75F7	7654	76B1	770E	776B	77C8	7825	7882	
AZIMUTH HIGH - INTELLIGENT	0-255	F0CB	753F	759C	75F9	7656	76B3	7710	776D	77CA	7827	7884	24
RESOLUTION LOW	0-99	F0CC	7540	759D	75FA	7657	76B4	7711	776E	77CB	7828	7885	
STEP SETTLE HIGH	0-255	F0CD	7541	759E	75FB	7658	76B5	7712	776F	77CC	7829	7886	
HEAD LOAD HIGH	0-255	F0CE	7542	759F	75FC	7659	76B6	7713	7770	77CD	782A	7887	
STEP SETTLE THRESHOLD	0-99	F0CF	7543	75A0	75FD	765A	76B7	7714	7771	77CE	782B	7888	17
AMPLITUDE LOW **	0-1800	F0D0	7544	75A1	75FE	765B	76B8	7715	7772	77CF	782C	7889	
MOTOR START HIGH **	0-999	F0D2	7546	75A3	7600	765D	76BA	7717	7774	77D1	782E	788B	
ECCENTRICITY HIGH	0-99	F0C1	7535	7592	75EF	764C	76A9	7706	7763	77C0	781D	787A	
COMPLIANCE HIGH	0-99	F0C2	7536	7593	75F0	764D	76AA	7707	7764	77C1	781E	787B	
ALIGNMENT HIGH - INTELLIGENT	0-255	F0C3	7537	7594	75F1	764E	76AB	7708	7765	77C2	781F	787C	24
TRK 00 FROM TRACK	0-15	F0D4	7548	75A5	7602	765F	76BC	7719	7776	77D3	7830	788D	15
TRK 00 SENSOR LOW LIMIT	0-99	F0D5	7549	75A6	7603	7660	76BD	771A	7777	77D4	7831	788E	18
TRK 00 SENSOR HIGH LIMIT	0-99	F0D6	754A	75A7	7604	7661	76BE	771B	7778	77D5	7832	788F	18
OPTALIGN HIGH - INTELLIGENT	0-255	F0D7	754B	75A8	7605	7662	76BF	771C	7779	77D6	7833	7890	24
ERASE LIMIT	0-99	F0D8	754C	75A9	7606	7663	76C0	771D	777A	77D7	7834	7891	
HEAD WIDTH/2	0-255	F0D9	754D	75AA	7607	7664	76C1	771E	777B	77D8	7835	7892	21
AZIMUTH HIGH CATEYE	0-255	F0E4	7558	75B5	7612	766F	76CC	7729	7786	77E3	7840	789D	24
ALIGNMENT HIGH CATEYE	0-99	F0E5	7559	75B6	7613	7670	76CD	772A	7787	77E4	7841	789E	24
OPTALIGN HIGH CATEYE	0-99	F0E6	755A	75B7	7614	7671	76CE	772B	7788	77E5	7842	789F	24
# MULTITRACK/CONTROL	0-99	F0E7	755B	75B8	7615	7672	76CF	772C	7789	77E6	7843	78A0	25
RESERVED 2		F0E8	755C	75B9	7616	7673	76D0	772D	778A	77E7	7844	78A1	

\*\* = TWO BYTE PARAMETERS

SINGLE FUNCTION PARAMETERS

PARAMETER	RANGE	RAM	EPROM	NOTE
TABLE AT POWER UP	01-14H	NA	7D83	1
ONE PASS MUX	0,1	F2CD	74EE	19
UART PRESET	00-FFH	F366	7D84	20
HUMIDITY PRESET	1-99	F367	7D85	
GRAPH OUT BY TOTAL SAMPLES	1-255	F369	7D86	23
GRAPH OUT BY INDIVIDUAL SAMPLE	1-255	F36A	7D87	23
GRAPH ON/OFF	0,1	F36B	7D88	23

BRIKON 723-4M/QT - TABLES 10-19

DRIVE CONFIGURATION MAP

PARAMETER	RANGE	RAM	TB10	TB11	TB12	TB13	TB14	TB15	TB16	TB17	TB18	TB19	NOTE
TEST TABLE NUMBER	0-19	F08C	78A2	78FF	795C	79B9	7A16	7A73	7AD0	7B2D	7B8A	7BE7	
NUMBER OF HEADS	1,2,4	F08D	78A3	7900	795D	79BA	7A17	7A74	7AD1	7B2E	7B8B	7BE8	2
NUMBER OF TRACKS	1-255	F08E	78A4	7901	795E	79BC	7A18	7A75	7AD2	7B2F	7B8C	7BE9	
DRIVE TYPE	00-FFH	F08F	78A5	7902	795F	79BC	7A19	7A76	7AD3	7B30	7B8D	7BEA	3
NOMINAL STEP RATE **	1-999	F091	78A7	7904	7961	79BE	7A1B	7A78	7AD5	7B32	7B8F	7BEC	10
MAXIMUM STEP RATE **	1-999	F093	78A9	7906	7963	79C0	7A1D	7A7A	7AD7	7B34	7B91	7BEE	10
MINIMUM STEP RATE **	1-999	F095	78AB	7908	7965	79C2	7A1F	7A7C	7AD9	7B36	7B93	7BF0	10
DRIVE SELECT	0-FH	F097	78AD	790A	7967	79C4	7A21	7A7E	7ADB	7B38	7B95	7BF2	4
TEST CONTROL BYTE	00-FFH	F098	78AE	790B	7968	79C5	7A22	7A7F	7ADC	7B39	7B96	7BF3	5
POWER CONTROL	0-FH	F099	78AF	790C	7969	79C6	7A23	7A80	7ADD	7B3A	7B97	7BF4	6
MUX CONTROL	00-FFH	F09A	78B0	790D	796A	79C7	7A24	7A81	7ADE	7B3B	7B98	7BF5	7
PRINTER OUTPUT CONTROL	0-FH	FOA2	78B8	7915	7972	79CF	7A2C	7A89	7AE6	7B43	7BA0	7BFD	13
CONFIGURATION BYTE	00-FFH	FOE2	78F8	7955	79B2	7A0F	7A6C	7AC9	7B26	7B83	7BE0	7C3D	8
ALIGN MODE	00-02	FOE3	78F9	7956	79B3	7A10	7A6D	7ACA	7B27	7B84	7BE1	7C3E	22

SYSTEM TEST MAP

PARAMETER	RANGE	RAM	TB10	TB11	TB12	TB13	TB14	TB15	TB16	TB17	TB18	TB19	NOTE
# OF INDEX TESTS	0-15	FOA4	78BA	7917	7974	79D1	7A2E	7A8B	7AE8	7B45	7BA2	7BFF	9
# OF WINDOW MARGIN TESTS	0-15	FOA5	78BB	7918	7975	79D2	7A2F	7A8C	7AE9	7B46	7BA3	7C00	9
# OF ASYMMETRY TESTS	0-15	FOA6	78BC	7919	7976	79D3	7A30	7A8D	7AEA	7B47	7BA4	7C01	9
# OF WRITE/READ TESTS	0-15	FOA7	78BD	791A	7977	79D4	7A31	7A8E	7AEB	7B48	7BA5	7C02	9
# OF STEP TESTS	0-15	FOA8	78BE	791B	7978	79D5	7A32	7A8F	7AEC	7B49	7BA6	7C03	9
# OF READ TESTS	0-15	FOA9	78BF	791C	7979	79D6	7A33	7A90	7AED	7B4A	7BA7	7C04	9
INDEX PERIOD LOW **	1-5000	F0B3	78C9	7926	7983	79E0	7A3D	7A9A	7AF7	7B54	7BB7	7C0E	10
INDEX PERIOD HIGH **	1-5000	F0B5	78CB	7928	7985	79E2	7A3F	7A9C	7AF9	7B56	7BB3	7C10	10
INDEX PULSE WIDTH LOW	1-99	F0B7	78CD	792A	7987	79E4	7A41	7A9E	7AFB	7B58	7BB5	7C12	10
INDEX PULSE WIDTH HIGH	1-99	F0B8	78CE	792B	7988	79E5	7A42	7A9F	7AFC	7B59	7BB6	7C13	10
DATA MARGIN LOW **	1-4000	F0B9	78CF	792C	7989	79E6	7A43	7AA0	7AFD	7B5A	7BB7	7C14	11
CLOCK MARGIN LOW **	1-4000	F0BB	78D1	792E	798B	79E8	7A45	7AA2	7AFF	7B5C	7BB9	7C16	11
ASYMMETRY HIGH **	1-4000	F0BD	78D3	7930	798D	79EA	7A47	7AA4	7B01	7B5E	7BBB	7C18	11
W/R SUBTEST CONTROL	00-FFH	F0BF	78D5	7932	798F	79EC	7A49	7AA6	7B03	7B60	7BBD	7C1A	12
READ RETRIES + 1	0-FH	F0C0	78D6	7933	7990	79ED	7A4A	7AA7	7B04	7B61	7BBE	7C1B	12

ANALOG MAP

PARAMETER	RANGE	RAM	TB10	TB11	TB12	TB13	TB14	TB15	TB16	TB17	TB18	TB19	NOTE
# OF ECCENTRICITY TESTS	0-15	FOAA	78C0	791D	797A	79D7	7A34	7A91	7AEF	7B4B	7BA8	7C05	14
# OF OPTALIGN HYSTERESIS TESTS	0-15	FOAB	78C1	791E	797B	79D8	7A35	7A92	7AEF	7B4C	7BA9	7C06	14
# OF INDEX TO DATA TESTS	0-15	FOAC	78C2	791F	797C	79D9	7A36	7A93	7AF0	7B4D	7BA0	7C07	14
# OF AZIMUTH TESTS	0-15	FOAD	78C3	7920	797D	79DA	7A37	7A94	7AF1	7B4E	7BAB	7C08	14
# OF RESOLUTION TESTS	0-15	FOAE	78C4	7921	797E	79DB	7A38	7A95	7AF2	7B4F	7BAC	7C09	14
# OF STEP SETTLE TIME TESTS	0-15	FOAF	78C5	7922	797F	79DC	7A39	7A96	7AF3	7B50	7BAD	7C0A	14
# OF HEAD LOAD SETTLE TESTS	0-15	F0B0	78C6	7923	7980	79DD	7A3A	7A97	7AF4	7B51	7BAE	7C0B	14
# OF TRACK 00 SENSOR TESTS	0-15	F0B1	78C7	7924	7981	79DE	7A3B	7A98	7AF5	7B52	7BAF	7C0C	14
# HEAD AMPLITUDE TESTS	0-15	F0B2	78C8	7925	7982	79DF	7A3C	7A99	7AF6	7B53	7BB0	7C0D	14
ECCENTRICITY TRACK	0-255	F09B	78B1	790E	796B	79C8	7A25	7A82	7ADF	7B3C	7B99	7BF6	
ALIGNMENT TRACK	0-255	F09C	78B2	790F	796C	79C9	7A26	7A83	7AE0	7B3D	7B9A	7BF7	
OPTALIGN OFFSET TRACKS	0-255	F09D	78B3	7910	796D	79CA	7A27	7A84	7AE1	7B3E	7B9B	7BF8	
AZIMUTH TRACK	0-255	F09E	78B4	7911	796E	79CB	7A28	7A85	7AE2	7B3F	7B9C	7BF9	
RESOLUTION TRACK FOR 1F	0-255	F09F	78B5	7912	796F	79CC	7A29	7A86	7AE3	7B40	7B9D	7BFA	
RESOLUTION TRACK FOR 2F	0-255	FOA0	78B6	7913	7970	79CD	7A2A	7A87	7AE4	7B41	7B9E	7BFB	
HEAD SETTLE TRACK	0-255	FOA1	78B7	7914	7971	79CE	7A2B	7A88	7AE5	7B42	7B9F	7BFC	
INDEX TO DATA TRACK A	0-255	F0C4	78DA	7937	7994	79F1	7A4E	7AAB	7B08	7B65	7BC2	7C1F	16
INDEX TO DATA TRACK B	0-255	F0C5	78DB	7938	7995	79F2	7A4F	7AAC	7B09	7B66	7BC3	7C20	16
INDEX TO DATA TRACK C	0-255	F0C6	78DC	7939	7996	79F3	7A50	7AAD	7B0A	7B67	7BC4	7C21	16
INDEX TO DATA HIGH **	0-999	F0C7	78DD	793A	7997	79F4	7A51	7AAE	7B0B	7B68	7BC5	7C22	
INDEX TO DATA LOW **	0-999	F0C9	78DF	793C	7999	79F6	7A53	7AB0	7B0D	7B6A	7BC7	7C24	
AZIMUTH HIGH - INTELLIGENT	0-99	F0CB	78E1	793E	799B	79F8	7A55	7AB2	7B0F	7B6C	7BC9	7C26	24
RESOLUTION LOW	0-99	F0CC	78E2	793F	799C	79F9	7A56	7AB3	7B10	7B6D	7BCA	7C27	
STEP SETTLE HIGH	0-255	F0CD	78E3	7940	799D	79FA	7A57	7AB4	7B11	7B6E	7BCB	7C28	
HEAD LOAD HIGH	0-255	F0CE	78E4	7941	799E	79FB	7A58	7AB5	7B12	7B6F	7BCC	7C29	
STEP SETTLE THRESHOLD	0-99	F0CF	78E5	7942	799F	79FC	7A59	7AB6	7B13	7B70	7BCD	7C2A	17
AMPLITUDE LOW **	0-1800	F0D0	78E6	7943	79A0	79FD	7A5A	7AB7	7B14	7B71	7BCE	7C2B	
MOTOR START HIGH **	0-999	F0D2	78E8	7945	79A2	79FF	7A5C	7AB9	7B16	7B73	7BD0	7C2D	
ECCENTRICITY HIGH	0-99	F0C1	78D7	7934	7991	79EE	7A4B	7AA8	7B05	7B62	7BBF	7C1C	
COMPLIANCE HIGH	0-99	F0C2	78D8	7935	7992	79EF	7A4C	7AA9	7B06	7B63	7BC0	7C1D	
ALIGNMENT HIGH - INTELLIGENT	0-99	F0C3	78D9	7936	7993	79FO	7A4D	7AAA	7B07	7B64	7BC1	7C1E	
TRK 00 FROM TRACK	0-15	F0D4	78EA	7947	79A4	7A01	7A5E	7ABB	7B18	7B75	7BD2	7C2F	15
TRK 00 SENSOR LOW LIMIT	0-99	F0D5	78EB	7948	79A5	7A02	7A5F	7ABC	7B19	7B76	7BD3	7C30	18
TRK 00 SENSOR HIGH LIMIT	0-99	F0D6	78EC	7949	79A6	7A03	7A60	7ABD	7B1A	7B77	7BD4	7C31	18
OPTALIGN HIGH - INTELLIGENT	0-99	F0D7	78ED	794A	79A7	7A04	7A61	7ABE	7B1B	7B78	7BD5	7C32	
ERASE LIMIT	0-99	F0D8	78EE	794B	79A8	7A05	7A62	7ABF	7B1C	7B79	7BD6	7C33	
HEAD WIDTH/2	0-255	F0D9	78EF	794C	79A9	7A06	7A63	7AC0	7B1D	7B7A	7BD7	7C34	21
AZIMUTH HIGH CATEYE	0-255	FOE4	78FA	7957	79B4	7A11	7A6E	7ACB	7B28	7B85	7BE2	7C3F	24
ALIGNMENT HIGH CATEYE	0-99	FOE5	78FB	7958	79B5	7A12	7A6F	7ACC	7B29	7B86	7BE3	7C40	24
OPTALIGN HIGH CATEYE	0-99	FOE6	78FC	7959	79B6	7A13	7A70	7ACD	7B2A	7B87	7BE4	7C41	24
# MULTITRACK/CONTROL	0-99	FOE7	78FD	795A	79B7	7A14	7A71	7ACE	7B2B	7B88	7BE5	7C42	25
RESERVED 2		FOE8	78FE	795B	79B8	7A15	7A72	7ACF	7B2C	7B89	7BE6	7C43	

# PROGRAMMING NOTES

ALL LOCATIONS ARE IN HEXADECIMAL. ALL VALUES IN THESE LOCATIONS ARE PRESENTED AND ENTERED IN HEXADECIMAL. \*\* ARE TWO BYTE PARAMETERS. ALL TWO BYTE PARAMETERS ARE ENTERED LSB FIRST.

## NOTE 1

There are 20 TEST TABLES and are numbered 00H - 13H. The value in this location determines the TEST TABLE blinking in the Display when tester power is applied.

## NOTE 2

If 01H is specified only Head 0 is tested. If 02H is specified, Head 0 is tested first, followed by Head 1. If 04H is specified, only Head 1 is tested.

## NOTE 3

This parameter is used to establish both the combinations of RPM/DATA RATE and INTERFACE PROTOCOL/RPM, which are used by the tester for timing and control. The most significant half byte selects a sub-table based on the combination of RPM/DATA RATE as follows:

<u>HEX VALUE</u>	<u>RPM</u>	<u>BIT RATE</u>
0	360	500 KBS
1	600	500 KBS
2	300	250 KBS
3	300	500 KBS
4	300	1000 KBS
5	180	500 KBS
6	600	1000 KBS
7	600	833 KBS
8	720	1000 KBS
9-F	R E S E R V E D	

The least significant half byte selects a sub-table based on the combination of INTERFACE PROTOCOL/RPM as follows:

<u>HEX VALUE</u>	<u>DRIVE TYPE</u>	<u>RPM</u>
0	8", 5 1/4"	360
1	5 1/4"	300
2	5 1/4, 3 1/2"	600
3	3 1/2"	300
4	5 1/4"	180
5	5 1/4"	720
6	3 1/2"	720
7	3 1/2"	360
8-F	R E S E R V E D	



**PROGRAMMING NOTES (Cont'd)**

**NOTE 4**

This parameter is used to control the individual Select lines. When set to **0FH**, all Select lines are active. When set to **00H**, no Select lines are active. Use the following as a guide:

<u>BIT</u>	<u>DRIVE SELECT LINE</u>
0	DS 0
1	DS 1
2	DS 2
3	DS 3

**NOTE 5**

This single byte parameter is used to establish the preset condition of the upper eight functions in the **CONFIGURATION** Row as follows:

<u>BIT</u>	<u>FUNCTION</u>
7	If 1, <b>USER DATA 15 BYTES</b> is ON and used in place of Random Data in the <b>WRITE/READ TEST</b> , and in place of <b>DB,6D,B6</b> in <b>WINDOW MARGIN</b> . If 0, <b>USER DATA 15 BYTES</b> is OFF and not used.
6	If 1, <b>STOP AFTER ONE PASS</b> is ON. If 0, it is OFF.
5	If 1, <b>STOP ON ERROR</b> is ON. If 0, it is OFF.
4	If 1, <b>TEST ALL TRACKS</b> is ON. If 0, <b>TEST ONE TRACK</b> is ON.
3	If 1, <b>TEST ONE TRACK</b> is ON. If 0, <b>TEST ALL TRACKS</b> is ON.
2	R E S E R V E D
1	R E S E R V E D
0	R E S E R V E D

**NOTE 6**

This byte controls monitoring of the D.C. output voltages for the drive. If the Bit is 1 the voltage is monitored, otherwise it is not. The Bits are assigned as follows:

<u>BIT</u>	<u>VOLTAGE</u>
0	+12 VDC
1	+ 5 VDC
2	- 5 VDC
3	+24 VDC
4-7	R E S E R V E D

**NOTE 7**

Each of the eight bits of this byte control the corresponding Port of operation used with the **MULTI- PLEXER**. If the Bit is 1 the Port is active, if 0, it is inactive. Two examples follow.

- FF is Binary 1111 1111: All Ports are active.
- AA is Binary 1010 1010: Ports 1,3,5,7 are active; Ports 0,2,4,6 are inactive.

PROGRAMMING NOTES (Cont'd)

**NOTE 8**

The Bits of this byte control configuration parameters as follows.

Bits 7 6

0 0: Data Rate is **500KBS**

0 1: Data Rate is **1000KBS**

1 0: Data Rate is **250KBS**

1 1: Data Rate is **833KBS**

Bit 5: **R E S E R V E D**

Bit 4: If **0**, do normal **READ TEST**. If **1**, do every 4th track (abbreviated style)

Bit 3: If **1**, do Apple 5 1/4". Otherwise do not.

Bit 2: If **0**, do **MOTOR ON** at Pin 16 of 34 pin cable. If **1**, do **LO I** at Pin 2 of 50 pin cable.

Bit 1: If **0**, do head unload by turning Off pin 18 of the 50 pin cable; if **1** do head unload by turning **OFF** all Select lines.

Bit 0: If **1** do **INDEX TO DATA** for a single Index (5.25 and 3.5 inch drives). If **0** do **INDEX TO DATA** for 2 Indexes (8 inch drives).

**NOTE 9**

These parameter values are used to control how many passes of each Test are performed during the two Auto Tests provided by the Tester. The lower half byte controls the number performed during **AUTO SYSTEM TEST** and the upper half byte controls the number performed during **AUTO ALIGN TEST**. Each parameter may be set from **0-15**. If set to **0**, the Test will not be performed. Regardless of the setting, the individual Test is available via the Front Panel Keys.

**NOTE 10**

The functions **STEP TIME NOM./MAX./MIN.** and **INDEX PERIOD/PULSE WIDTH** are in *tenths of milliseconds*. A decimal value of 400 (0190 Hex) will result in a step time of 40.0 milliseconds. The two bytes are stored least significant byte first.

**NOTE 11**

Both clock and data margin limits may be specified. The data pattern normally used will not generate clock pulses in MFM. **FFFF** can be used in the clock margin locations to cause the tester to verify that there are no clocks; in this case if there are clocks, the test will fail.

**NOTE 12**

This byte defines which combination of sub-tests are performed by the **WRITE/READ** Test. If a Bit is **1**, the subtest is performed. If the Bit is **0**, it is not. The bits are defined as follows:

<u>BIT</u>	<u>SUBTEST</u>
7	MFM-2
6	MFM-1
5	RESERVED
4	RESERVED
3	RESERVED
2	RESERVED
1	RESERVED
0	RESERVED

## PROGRAMMING NOTES (Cont'd)

### NOTE 13

The Bits of this byte control printing as follows:

<u>BIT</u>	<u>FUNCTION</u>
0	If 1, test results are printed. If 0, they are not.
1	If 1, a P or F is printed at the front of all tests. If 0, the position is blank for Passing tests. An F is always printed for Failing tests.
2	If 0, exit both <b>AUTO SYSTEM</b> and <b>AUTO ALIGN</b> with <i>Form Feed</i> . If 1, exit with <i>3 Line Feeds</i> .
3	If 1, the test summary is printed. If 0, it is not.

### NOTE 14

These parameter values are used to control how many passes of each Test are performed during the two Auto Tests provided by the Tester. The lower half byte controls the number performed during **AUTO SYSTEM TEST** and the upper half byte controls the number performed during **AUTO ALIGN TEST**. Each parameter may be set from 0-15. If set to 0, the Test will not be performed. Regardless of the setting, the individual Test is available via the Front Panel Keys.

### NOTE 15

This track number is the higher of the two tracks between which the TRACK 00 SENSOR must change states. It is in the most significant half of the byte. The least significant half byte is the table number.

### NOTE 16

There are up to three tracks on which **INDEX TO DATA** may be measured. If less than three tracks are desired, then use **FFH** instead of a track number to skip that track.

### NOTE 17

In the **STEP SETTLE** and **HEAD LOAD SETTLE** Tests a track is written with a uniform pattern and the head is then stepped away, or is unloaded. Then at index the head is stepped back to the track, or is loaded. The amplitude of the head signal is sampled at intervals of 0.5 mS. and the values are saved. Then on a subsequent revolution samples are taken at the same times with respect to index. The two sets of samples are compared. The sample time at which all subsequent samples taken during settling differ from the corresponding samples taken after settling by no more than X percent is the Settling Time, and X is the value in this byte. The value used is generally a percentage difference of 5 to 20 percent.

### NOTE 18

These values are the allowable percentage difference of the time of changing of the Track 00 Sensor as compared to a time of change that is half way between the two tracks. Positive and negative values are allowed and are entered as 8-bit 2's-complement numbers. Negative numbers are calculated by subtracting the magnitude of the number from 256 and converting to hex. The range is +/- 99%.

### NOTE 19

This function is used in conjunction with the Multiplexer and controls whether the Multiplexer stops after a pass of all the activated ports or not. If set to **00H**, the Multiplexer will continuously advance to the next port (after the highest port is finished, the lowest port will start again). If set to **01H**, the Multiplexer will stop after the highest activated port is complete.



## PROGRAMMING NOTES (Cont'd)

### NOTE 20

This parameter is used to preset the UART controls for PARITY, NUMBER OF BITS, and BAUD RATE. The construction of the byte is as follows:

Bits	<u>7 6 5</u>	<u>FUNCTION</u>
	0 0 0	Even Parity.
	0 0 1	Odd Parity.
	0 1 0	Parity Bit = 0.
	0 1 1	Parity Bit = 1.
Bit 4		If 0, do 7 DATA BITS. If 1, do 8 DATA BITS.
Bits	<u>3 2 1 0</u>	
	0 1 0 0	300 BAUD
	0 1 1 0	1200 BAUD
	1 0 1 1	9600 BAUD
	1 1 0 0	19200 BAUD

### NOTE 21

This parameter is used to select the width of the target Head when using the INTELLIGENT SERIES Alignment Diskettes. Because the Tester presents the results in uM., it is necessary to know the target Head width to accurately present offtrack values. The value in this parameter is *one half* of the target Head width (plus/minus from center) in *micrometers*.

### NOTE 22

This function is used to preset the style of alignment to be used. A choice of three styles are available. When set to 1, the INTELLIGENT SERIES is active, requiring the INTELLIGENT SERIES diskettes to be used for STATIC TRACK ALIGN, OPTALIGN, and AZIMUTH measurements. When set to 0, the *cateye* measuring method is active, requiring a *traditional cateye* type diskette. When set to 2, the *SONY ED cateye* is active, requiring the Sony Model RZW 406D alignment diskette. Some Tests in the AUTO ALIGN sequence, such as WINDOW MARGIN, ASYMMETRY, and AMPLITUDE do not produce meaningful results when in either of the *cateye* modes and must be considered. The background CONVERT - KEY C is used to correlate between diskette styles as follows.

**INTELLIGENT SERIES** - Begin in this mode and CONVERT to *traditional cateye* mode.

**TRADITIONAL CATEYE** - Begin in this mode and CONVERT to INTELLIGENT SERIES mode.

**SONY ED CATEYE** - Begin in this mode and CONVERT to INTELLIGENT SERIES mode.

## PROGRAMMING NOTES (Cont'd)

### NOTE 23

These functions are used to control the conditions of the graphics output when performing **WINDOW MARGIN** or **ASYMMETRY** Tests. The graphic output provides measurement distribution for each Head.

The Parameter **GRAPH OUT BY TOTAL SAMPLES** is used to cause the graph to output after a certain number of total samples have accrued. The range of setting is from **1-255**. If set to **1**, the graph outputs after each **WINDOW MARGIN** or **ASYMMETRY** Test. If set to **255**, the graph outputs after 255 Tests have been performed.

The Parameter **GRAPH OUT BY INDIVIDUAL SAMPLE** is used to cause the graph to output after a certain number repeating measurement values have accrued. The range of setting is from **1-255**. If set to **1**, the graph outputs after each **WINDOW MARGIN** or **ASYMMETRY** Test. If set to **255**, the graph outputs after 255 of the same value has accrued or the Parameter **GRAPH OUT BY TOTAL SAMPLES** is reached, whichever occurs first.

The Parameter **GRAPH ON/OFF** controls whether the graph is printed. If set to **0**, the graph is **OFF**. If set to **1**, the graph is **ON**. If it is desired to produce the graph without the individual sample values, set the **GRAPH ON/OFF** parameter to **1** and use the **PRINT ON/OFF** function (Key **B**) to turn the printer Off during the measurements. In this manner, the individual measurements are not printed while outputting the graph after each accumulation.

If the Parameters **GRAPH OUT BY TOTAL SAMPLES** and **GRAPH OUT BY INDIVIDUAL SAMPLE** are set to **0**, the graph is output after **256** Tests have been performed.

This capability is invoked only when the Parameter **STOP AFTER ONE PASS** is **OFF**.

### NOTE 24

There are individual pass/fail limits for **ALIGNMENT**, **OPTALIGN**, and **AZIMUTH** measurements for both *cateye* and **INTELLIGENT SERIES** diskettes. Because they present measurement information in different terms, caution must be exercised when setting these limits.

**ALIGNMENT HIGH/OPTALIGN HIGH** - When in the **INTELLIGENT SERIES** Mode, alignment error information is in *micrometers*. When in the *cateye* Mode, alignment error information is in *percentage*.

**AZIMUTH** - When in the **INTELLIGENT SERIES** Mode, Azimuth error information is presented in *minutes*. When in the *cateye* Mode, the information is presented in *burst ratio*. When in the *Sony RZW406D* Mode, Azimuth error information is presented in *minutes*.

The Tester selects the pass/fail limit based on the current Mode of the Tester. This includes the **ALIGN MODE** Parameter and the state of the **CHANGE ALIGN TYPE** function in the **AUXILIARY** Row.

PROGRAMMING NOTES (Cont'd)

NOTE 25

This byte controls both the number of times it may be performed during **AUTO ALIGN** and the method of **MULTITRACK** Testing.

The upper half byte is used to control the number of times performed during **AUTO ALIGN**. The range of setting is **0-15**. Caution should be observed to consider the Parameter **NUMBER OF OPTALIGN/HYSTERESIS TESTS**. These are mutually exclusive Tests and each will independently decrement the meter. For inspection environments, it is usually only required to perform **MULTITRACK ALIGN** or **OPTALIGN/HYSTERESIS**, but not both. Multitrack Testing provides more information. Single Track Testing uses a less expensive diskette.

<u>HEX VALUE</u>	<u>FUNCTION</u>
0-F	If 0, skip the Test. Any other value is the number of times.

The lower half byte is constructed to provide control of the method of testing as follows.

<u>HEX VALUE</u>	<u>FUNCTION</u>
0	Perform in BOTH directions
1	Perform FROM IN direction only
2	Perform FROM OUT direction only
3	Perform in BOTH directions
4-F	R E S E R V E D

PARAMETER	--DRIVE CONFIGURATION--									
	TB00	TB01	TB02	TB03	TB04	TB05	TB06	TB07	TB08	TB09
NUMBER OF HEADS	2	2	2	2	2	2	2	2	2	2
NUMBER OF TRACKS	80	40	80	80	80	80	80	80	80	80
DRIVE TYPE	85H	21H	21H	00H	23H	33H	12H	43H	54H	86H
NOMINAL STEP RATE	3.0	6.0	3.0	3.0	3.0	3.0	6.0	3.0	3.0	3.0
MAXIMUM STEP RATE	4.0	7.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
MINIMUM STEP RATE	3.0	6.0	3.0	3.0	3.0	3.0	6.0	3.0	3.0	3.0
DRIVE SELECT	03H	03H	03H	03H	03H	03H	03H	03H	03H	03H
TEST CONTROL BYTE	50H	50H	50H	50H	50H	50H	50H	50H	50H	50H
POWER CONTROL	03H	03H	03H	03H	03H	03H	03H	03H	03H	03H
MUX CONTROL	00H	00H	00H	00H	00H	00H	00H	00H	00H	00H
PRINTER OUTPUT CONTROL	0FH	0FH	0FH	0FH	0FH	0FH	0FH	0FH	0FH	0FH
CONFIGURATION BYTE	43H	83H	83H	03H	83H	03H	23H	43H	03H	43H
ALIGN MODE	01H	01H	01H	01H	01H	01H	01H	01H	00H	00H
MEDIA MODEL	00/CAT	01/CAT	02/CAT	03/CAT	04/CAT	05/CAT	14/CAT	07/CAT	CAT	CAT

	--SYSTEM TESTS--									
# OF INDEX TESTS	13H	13H	13H	13H	13H	13H	13H	13H	13H	13H
# OF WINDOW MARGIN TESTS	33H	33H	33H	33H	33H	33H	33H	33H	03H	03H
# OF ASYMMETRY TESTS	33H	33H	33H	33H	33H	33H	33H	33H	03H	03H
# OF WRITE/READ TESTS	01H	01H	01H	01H	01H	01H	01H	01H	01H	01H
# OF STEP TESTS	01H	01H	01H	01H	01H	01H	01H	01H	01H	01H
# OF READ TESTS	01H	01H	01H	01H	01H	01H	01H	01H	01H	01H
INDEX PERIOD LOW	82.5	195.0	195.0	162.5	195.0	195.0	97.5	195.0	328.3	82.5
INDEX PERIOD HIGH	84.5	205.0	205.0	170.9	205.0	205.0	102.5	205.0	338.1	84.5
INDEX PULSE WIDTH LOW	0.1	1.0	1.0	1.0	0.1	0.1	0.1	0.1	0.1	0.1
INDEX PULSE WIDTH HIGH	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	15.0	8.0
DATA MARGIN LOW	300	500	500	250	500	250	250	200	250	300
CLOCK MARGIN LOW	FFFFH	FFFFH	FFFFH	FFFFH	FFFFH	FFFFH	FFFFH	FFFFH	FFFFH	FFFFH
ASYMMETRY HIGH	120	600	600	300	600	300	300	200	250	120
W/R SUBTEST CONTROL	C0H	C0H	C0H	C0H	C0H	C0H	C0H	C0H	C0H	C0H
READ RETRIES + 1	2	2	2	2	2	2	2	2	2	2

	--ALIGNMENT TESTS--									
# OF ECCENTRICITY TESTS	10H	10H	10H	10H	10H	10H	10H	10H	00H	00H
# OF OPTALIGN HYSTERESIS TESTS	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H
# OF INDEX TO DATA TESTS	20H	20H	20H	20H	20H	20H	20H	20H	20H	20H
# OF AZIMUTH TESTS	10H	10H	10H	10H	10H	10H	10H	10H	10H	10H
# OF RESOLUTION TESTS	10H	10H	10H	10H	10H	10H	10H	10H	00H	00H
# OF STEP SETTLE TIME TESTS	10H	10H	10H	10H	10H	10H	10H	10H	10H	10H
# OF HEAD LOAD SETTLE TESTS	00H	00H	00H	00H	00H	00H	00H	00H	00H	00H
# OF TRACK 00 SENSOR TESTS	00H	00H	00H	00H	00H	00H	00H	00H	00H	00H
# HEAD AMPLITUDE TESTS	10H	10H	10H	10H	10H	10H	10H	10H	00H	00H
ECCENTRICITY TRACK	10	10	10	10	10	10	10	10	10	10
ALIGNMENT TRACK	32	16	32	32	40	40	40	40	32	40
OPTALIGN OFFSET TRACKS	5	5	5	5	5	5	5	5	5	5
AZIMUTH TRACK	68	34	68	68	40	40	40	40	68	40
RESOLUTION TRACK FOR 1F	64	32	64	64	75	75	75	75	64	75
RESOLUTION TRACK FOR 2F	64	32	64	64	75	75	75	75	64	75
HEAD SETTLE TRACK	64	32	64	64	75	75	75	75	64	75
INDEX TO DATA TRACK A	2	1	2	2	2	2	2	2	2	2
INDEX TO DATA TRACK B	32	16	32	32	40	40	40	40	FFH	40
INDEX TO DATA TRACK C	68	34	68	68	69	69	69	69	68	69
INDEX TO DATA HIGH	300	300	300	300	900	900	900	900	600	300
INDEX TO DATA LOW	100	100	100	100	50	50	50	50	200	50
AZIMUTH HIGH - INTELLIGENT	9	12	18	18	30	21	30	9	18	9
RESOLUTION LOW	60	60	60	60	60	60	60	55	55	60
STEP SETTLE HIGH	20	20	20	20	20	20	20	20	20	18
HEAD LOAD HIGH	60	40	40	40	60	60	60	60	60	60
STEP SETTLE THRESHOLD	20	20	20	20	20	20	20	20	20	20
AMPLITUDE LOW	100	150	150	150	150	100	100	100	150	100
MOTOR START HIGH	750	500	500	500	500	500	500	500	500	750
ECCENTRICITY HIGH	20	20	20	20	20	20	20	20	20	20
COMPLIANCE HIGH	20	20	20	20	20	20	20	20	20	20
ALIGNMENT HIGH - INTELLIGENT	11	42	21	21	17	17	17	17	21	09
TRK 00 FROM TRACK	3	2	2	2	1	1	1	1	2	1
TRK 00 SENSOR LOW LIMIT	-85	-50	-50	-50	-50	-50	-50	-50	-50	-50
TRK 00 SENSOR HIGH LIMIT	+85	+50	+50	+50	+50	+50	+50	+50	+50	+50
OPTALIGN HIGH - INTELLIGENT	11	42	21	21	17	17	17	17	21	09
ERASE LIMIT	5	5	5	5	5	5	5	5	5	5
HEAD WIDTH/2	84	168	84	84	69	69	69	69	84	69
AZIMUTH HIGH CATEYE	100	100	100	100	100	100	100	100	100	100
ALIGNMENT HIGH CATEYE	10	25	25	25	25	25	25	25	25	10
OPTALIGN HIGH CATEYE	10	25	25	25	25	25	25	25	25	10
# MULTITRACK/CONTROL	02H	00H	00H	00H	00H	00H	00H	00H	00H	00H
RESERVED.2	0	0	0	0	0	0	0	0	0	0

