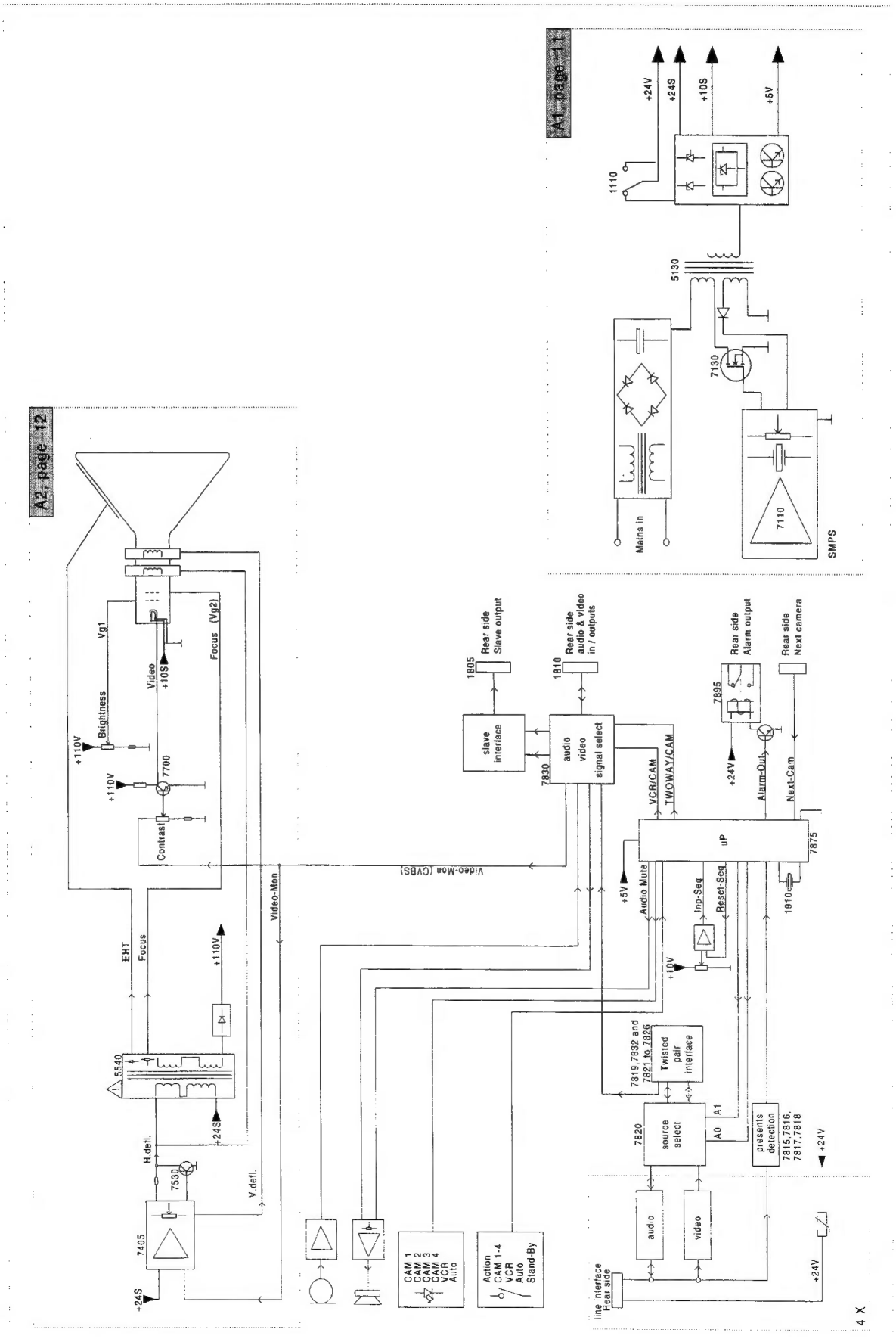
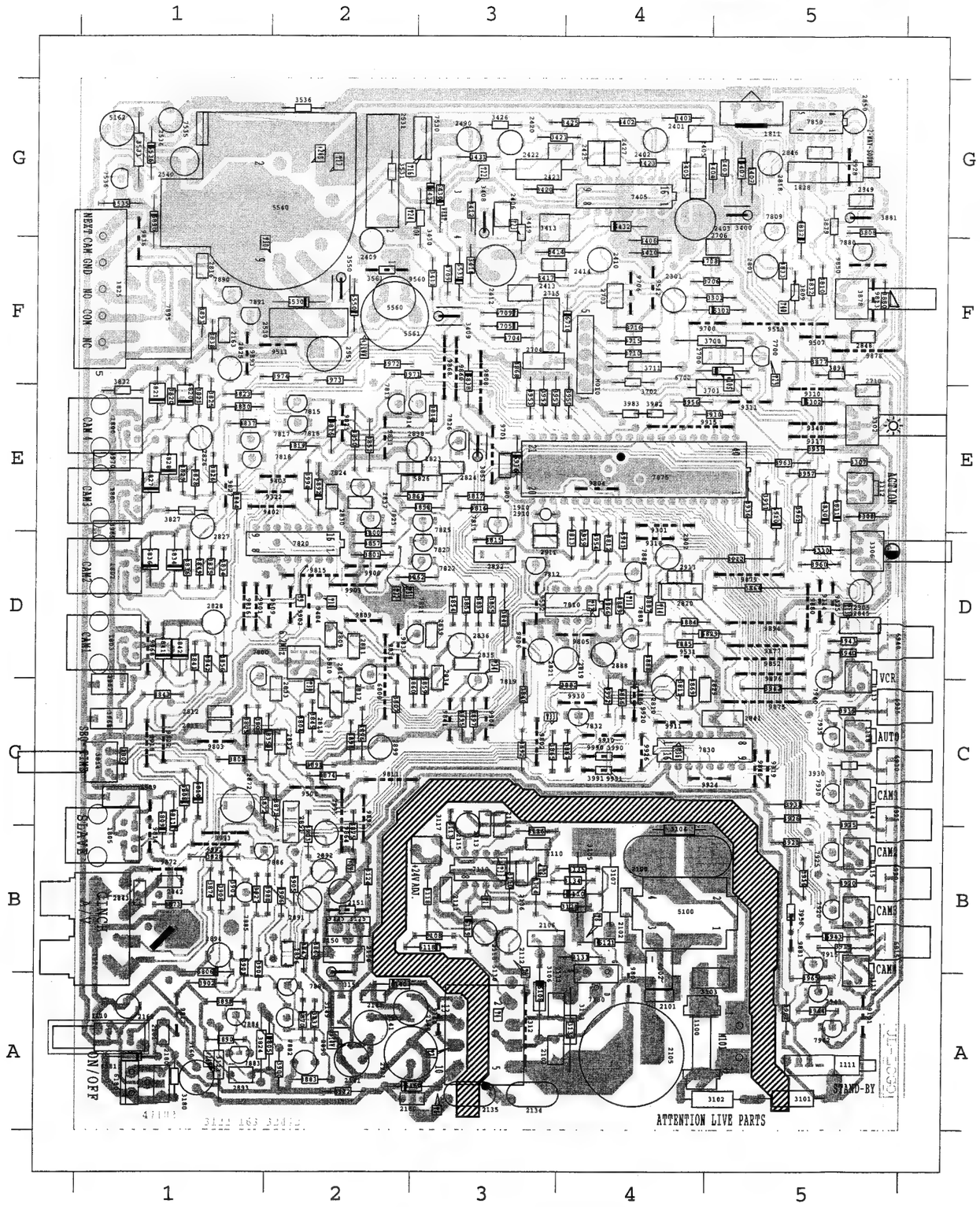
5. Block diagram



PWB



1100	A4	2827	E1	3535	G1	3882	C4	6160	A3	7925	B5		
1110	A1	2828	D1	3536	G2	3883	A2	6180	A1	7930	C5		
1111	A5	2829	C4	3550	F2	3884	D4	6181	A1	7935	C5		
1112	E5	2830	E2	3561	F2	3885	D4	6301	F5	7940	C5		
1113	D5	2832	C2	3700	F5	3886	C4	6302	E5	7942	A5		
1114	C5	2833	C2	3701	E5	3887	D4	6407	G5	7943	A5		
1115	B5	2834	D3	3702	F4	3888	D4	6430	G3	9101	A5		
1116	B5	2835	D3	3704	F3	3889	D4	6431	G3	9125	B2		
1117	B5	2836	D3	3706	F5	3890	A1	6432	G4	9140	A3		
1118	C5	2837	E2	3708	F4	3891	C2	6530	F2	9301	E4		
1800	E1	2838	E3	3709	F3	3892	C3	6531	F3	9310	E5		
1801	E1	2839	D3	3710	F4	3893	F1	6536	G1	9311	E5		
1802	D1	2841	C5	3711	F4	3894	F5	6550	F2	9312	A3		
1803	D1	2842	B1	3715	F4	3895	C3	6700	F5	9314	D5		
1805	B1	2843	B1	3716	F4	3896	C2	6705	F3	9317	E5		
1810	B1	2845	D5	3800	D2	3897	C3	6709	F3	9318	D4		
1811	G5	2846	G5	3801	D2	3898	C2	6710	F4	9319	C5		
1825	F1	2848	F5	3802	C1	3899	A1	6800	D2	9322	E2		
1828	G5	2849	G5	3803	C1	3900	A2	6805	A2	9325	D5		
1910	E3	2850	G5	3804	C2	3901	B1	6806	A1	9340	E5		
2100	B4	2851	C2	3805	C1	3902	A1	6808	C1	9402	E2		
2101	A4	2872	C1	3806	C1	3903	B2	6809	C1	9403	E2		
2102	B4	2888	D4	3807	C2	3904	B1	6810	C1	9404	D2		
2103	A3	2890	A2	3808	G5	3905	B2	6811	C1	9501	C2		
2105	A4	2891	B2	3809	F5	3906	B2	6815	E2	9507	F5		
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2110	B3	2893	A1	3811	C4	3908	B1	6821	E1	9511	F2		
2111	B3	2894	B1	3812	D4	3909	C1	6827	E1	9512	F4		
2112	B3	2895	B2	3813	D4	3910	E5	6828	E1	9513	F5		
2113	C3	2896	B2	3814	C1	3911	E5	6829	D5	9531	D4		
2114	C3	2899	C2	3815	D3	3912	D5	6830	E5	9532	D3		
2115	C3	2901	E3	3816	E3	3915	B5	6831	E5	9560	F2		
2118	B3	2902	D4	3817	E3	3916	B5	6832	G5	9700	F4		
2133	A3	2910	E3	3818	E3	3920	B5	6834	D1	9701	E3		
2134	A3	2911	D3	3819	E2	3921	B5	6835	C2	9706	F4		
2135	A3	2913	D4	3820	E1	3925	C5	6836	D1	9802	C3		
2136	B3	3101	A5	3821	E1	3926	C5	6838	F3	9803	C1		
2140	A3	3102	A5	3822	E1	3927	B1	6841	D1	9804	E4		
2141	A2	3103	A5	3823	E1	3928	B1	6842	D1	9805	D4		
2149	A2	3104	B4	3824	A1	3930	C5	6890	G1	9806	D3		
2150	B2	3105	B4	3825	E1	3931	C5	6892	E2	9807	A4		
2151	B2	3106	A3	3826	E1	3935	C5	6910	E5	9808	F3		
2160	A3	3107	B4	3827	E1	3936	E5	6915	B5	9809	D2		
2161	A3	3108	B3	3828	E1	3940	D5	6916	E3	9811	C2		
2162	A1	3110	B3	3829	E1	3941	D4	6920	B5	9813	F5		
2163	F1	3113	B3	3830	E1	3942	C5	6925	C5	9814	B1		
2180	A1	3114	B3	3831	A2	3943	D5	6930	C5	9815	D2		
2181	A1	3116	B3	3832	F5	3950	E4	6935	C5	9816	D1		
2301	F4	3117	B3	3833	F5	3951	E3	6940	D5	9817	A1		
2305	D5	3118	B3	3834	D1	3952	E3	6943	B5	9825	E2		
2401	G4	3121	B4	3835	D1	3953	E3	7110	B3	9827	E1		
2402	G4	3122	A2	3836	D1	3954	D4	7130	A4	9831	E2		
2403	G4	3123	A1	3837	E1	3955	E5	7150	B2	9833	D2		
2405	G4	3124	B2	3838	F1	3956	E4	7405	G4	9834	D2		
2406	G3	3125	B2	3839	D3	3957	E5	7530	G3	9836	F1		
2409	F2	3131	B4	3840	C3	3958	B5	7535	G1	9841	C3		
2410	F4	3132	A4	3841	D1	3959	D4	7536	G1	9848	C5		
2412	F3	3133	A4	3842	D1	3960	D5	7700	F5	9850	F5		
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2414	F3	3135	B4	3844	E1	3962	A5	7809	G5	9860	F3		
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2422	G3	3150	B2	3847	B2	3964	A5	7811	E3	9868	F3		
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2425	G4	3301	F5	3849	D1	3966	D4	7813	E2	9875	C5		
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2490	G3	3306	D5	3851	D3	3968	C1	7815	E2	9877	D5		
2530	F2	3307	E5	3852	E2	3969	D1	7816	E2	9878	F5		
2531	G2	3308	E5	3853	E3	3970	E1	7817	E1	9879	D5		
2536	G1	3310	D5	3854	D3	3971	F2	7818	E1	9880	D5		
2540	G1	3400	G5	3855	D3	3972	F2	7819	C3	9881	B5		
2551	F2	3401	G4	3856	D1	3973	F2	7820	D2	9893	F1		
2700	F5	3402	G4	3857	D2	3974	F2	7821	D3	9894	D5		
2703	F4	3403	G5	3858	E3	3980	B2	7822	D3	9896	C2		
2704	F3	3404	G5	3859	C3	3982	E4	7823	E2	9900	D2		
2706	F5	3405	G4	3860	C3	3983	E4	7824	E2	9901	D1		
2710	E5	3406	F4	3861	E3	3990	C4	7825	E3	9902	D2		
2715	F3	3407	G5	3862	D3	3991	C4	7826	E3	9903	D2		
2801	F5	3408	G3	3863	B2	3992	C4	7827	D3	9904	C3		
2809	D2	3409	F3	3864	D5	3994	E2	7830	C4	9910	C4		
2810	C4	3410	F4	3865	C3	5100	B4	7832	C4	9911	C4		
2811	D2	3411	F3	3866	C4	5130	A3	7850	G5	9915	E4		
2812	C1	3412	G3	3867	C4	5141	A2	7875	E4	9918	C1		
2813	C2	3413	G3	3868	F3	5160	A1	7880	F5	9920	C4		
2814	C2	3414	F3	3869	C4	5162	G1	7881	A2	9922	C1		
2815	C1	3417	F3	3870	A2	5540	G2	7882	A2	9924	C5		
2816	F1	3418	F3	3871	C2	5560	F2	7883	A1	9926	C4		
2817	C2	3419	G3	3872	C1	5561	F2	7884	A1	9928	G5		
2818	G5	3420	G3	3873	B1	5810	D2	7885	B1	9930	C4		
2819	D4	3421	G3	3874	C2	5826	E3	7886	B1	9968	D1		
2820	D4	3423	G4	3875	B2	6102	B4	7888	D4	9990	C4		
2821	D3	3425	G4	3876	B1	6108	A3	7889	D4	9991	C4		
2822	D3	3426	G3	3877	F5	6110	B4	7890	F1	9992	B1		
2823	E2	3430	G3	3878	F5	6118	B3	7891	F1	9993	B1		
2824	E3	3431	G3	3879	G5	6119	B3	7895	F1	M010	F4		
2825	F1	3531	G2	3880	F5	6121	B4	7915	B5				
2826	E1	3533	G1	3881	G5	6140	A2	7920	B5				

9. Circuit Description

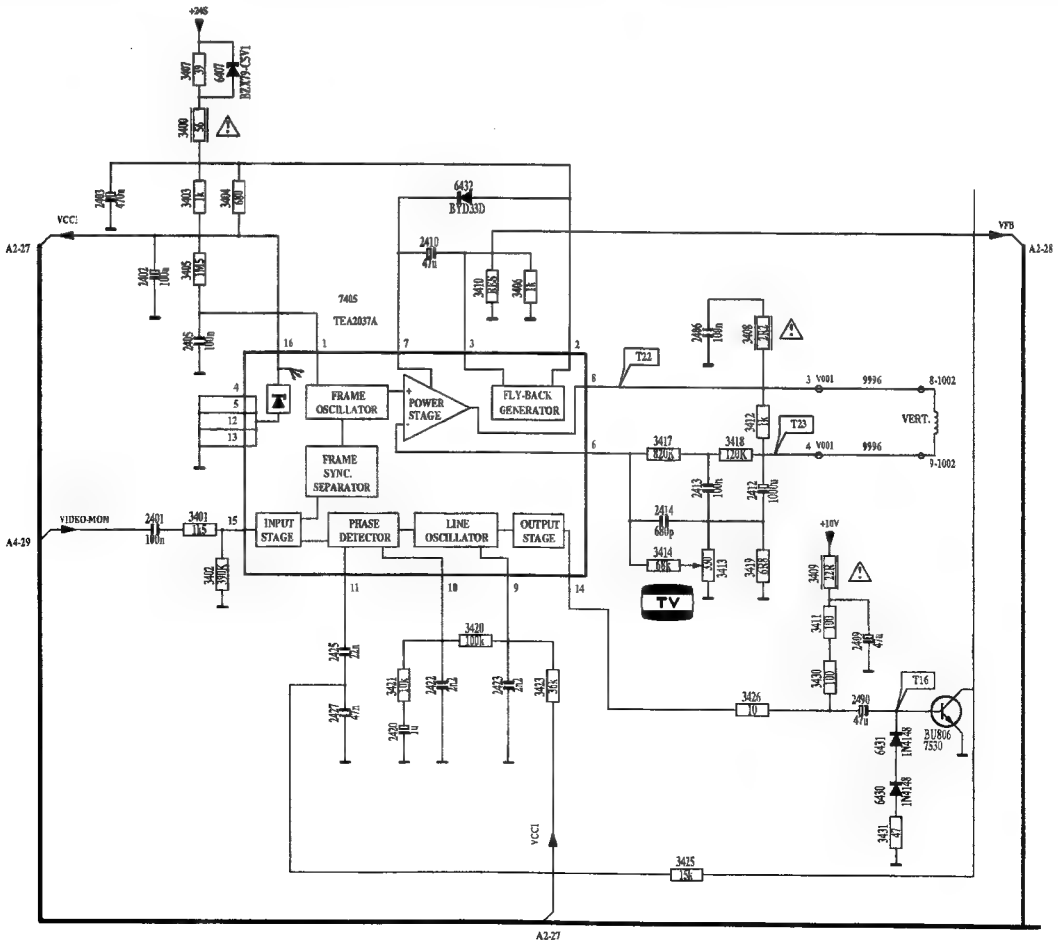
Differences with the VM8 system : In respect to the field calls of the VM8 system (See Training Manual VM8 service code 4822 727 20401), the VM6 system is improved on several points like:

- The use of other components in the camera interface and the deflection part
- An other transformer in the power supply
- Several software improvements
- For the POS monitor an extra Slave twisted pair interface
- The Slave monitor has a Twisted pair input
- The EHT is increased to improve picture quality
- A system on/off switch at the back of the monitor.

The deflection part differs (electronically) of that of the VM8 system. A new deflection control IC is introduced (TEA 2037A) which generates not only the horizontal and vertical drive but also the Vertical feedback pulses (VFB).

The DC level of the input stage (pin 15, 7405) is determined by 3402. The value of 3402 is chosen in such a way that only the synchronisation pulses of the video signal is fed into the input stage of 7405. After the input stage these pulses are fed in the phase detector and the frame sync. separator. The line oscillator (which is free running at approx. 14,6 kHz) will lock itself (PLL) to the line pulses originating from the incoming video. The line output stage is capable of driving the line output transistor 7530 directly. Via 3425 the phase of the line output stage is monitored. When the line output is getting out of phase, the phase detector will adjust its output, so the line output will get in phase again. As the VCC1 voltage (9,8 Volt) used for the horizontal and vertical oscillators as a reference, (is precise and stable) (using 2423 and 3423 as 1% components) it is not necessary to have a line oscillator adjustment. The line output stage of 7405 has an open collector therefore 3440, 3411 and 3409 are added. 3431, 6430 and 6431 are used to discharge 2490 during the down going flank of pin 14 of 7405.

The frame oscillator is locked to the vertical pulses. These pulses are fed into the vertical power stage, which is capable to drive the vertical deflection coil directly. Via feedback 3414, 3417 and 3413 the amplitude of the vertical drive is obtained. To prevent seeing vertical fly-back lines, the VFB is generated to suppress the video output when fly-back lines are present. Therefor VFB is no feedback but an outgoing signal !! The fly-back generator is essentially a switch which is closed when a Vertical Feed-Back pulse (VFB) is needed.

- During the scan the fly-back generator switch is open so 2410 is charged to approx. +14V via 6432.
- During the fly-back the fly-back generator switch is closed so pin 3 of 7406 is +14V. As 2410 is still charged to +14V, pin 7 of 7406 becomes approx. +28V at the beginning of the fly-back.
- During the fly-back the current through the deflection coil must quickly come to "0". Due to the inductive reaction of the deflection coil more energy is needed (therefor the +28V is used)

Power save circuitry (schematic A1): In the POS and Retail the STAND-BY button is a pulse switch. This pulse is used by the µP to switch off the +10S and +24S using 10S-ENABLE (pin 15, 7875). In this way the line output stage the deflection part and the filament voltage are switched off. In the Slave monitor however no µP is used, therefor 9804 and 9881are added and a make switch is used for the STAND-BY. In stand-by the switch is open and via 9881 and 7943 the +10S and +24S are switched off. When the Slave is turned off (rear side) the +24V and +24S are switched off. As the +24V is switched off, the +10S is switched off too via 6916 and 9804