

DESCRIPTION OF MODIFICATIONS

Model	Label Code	Manufacturer	Level	Description of Modification
CDU 1431	SA31	SALORA	-	<ul style="list-style-type: none"> - Capacitor C64, 10 uF 100 V electrolytic replaced by a 4.7 uF 63 V polyester type 1.50. Resistor R104 2,2 Ohm 1W 5% in metal oxide replaced by one of 2.2 Ohm 2.5 W 10% <p>This modification improves the monitor reliability. These modifications are not implemented in production, but only in field</p>
CDU 1431	MA41	MATSUSHITA		
CDU 1431	HA21	HANTAREX	-	Mother board modifications that do not change the level since the monitor has an HA22 code
CDU 1431/E	GS01	GOLDSTAR	-	This is replaced by GOLDSTAR GS02 monitor with a mask pitch of 0.28 mm
CDU 1431/E	GS02	GOLDSTAR	Rev. 01	- Resistors R907 and R909, 150 Ohm replaced by 75 Ohm resistors
			Rev. 02	- Printed circuit 01/04 replaced by printed circuit 02/05. These modifications (Rev. 01 and 02) solve the acoustic disturbance and picture vibration problems caused by high humidity.
			Rev. 03	- Capacitors C920 and C611, 220 uF 50 V, replaced by 1000 uF 35 V capacitors Capacitor C307, 40pF 50 V replaced by a 330pF 50 V capacitor. Eliminates: - Ripple problems due to too high 25 V with vertical scanning frequency at minimum or in self test - Excessive Q302 faults due to VBE too high
			Rev. 04	- Replacement of resistors: R741 47 KOhm with 180 KOhm R761 470 KOhm with 330 KOhm. This modification improves the focus. - New alternative suppliers for some components.
			Rev. 05	- The piggy board has been eliminated. - The main board has been replaced with the GS03 main board (low emission) - Modifications made to the video board.

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CDU 1431/E	GS03	GOLDSTAR	-	<p>Low Emission Monitor</p> <ul style="list-style-type: none"> - To avoid that this monitor does not work properly when connected to the M300-25 and M480-20 personal computers, remove the vertical synchronism wire from the signals cable. This is an on-field operation that must be carried out when requested only. The levels remain unaltered.
CDU 1431/N	HA22	HANTAREX	Rev. 01	<ul style="list-style-type: none"> - Resistor R190, 8.2 KOhm replaced by a 10 KOhm resistor - Polyester capacitors C172 and C173 , 100 nF replaced by polypropylene type. These modifications have been implemented on the mother board that changes to level 01. These modifications solve: <ul style="list-style-type: none"> - Problems of slight background disturbance in maximum brightness conditions - Vertical dimension increase after approx. 2000 hours of operation <p>Replaced by HANTAREX HA23 monitor with a mask pitch of 0.28 mm</p>
CDU 1431/N	HA23	HANTAREX	Rev. 01	<ul style="list-style-type: none"> - Replacement of resistors: <ul style="list-style-type: none"> RV102 , 220 KOhm with 100 KOhm RV103, 470 KOhm with 220 KOhm R137, 33 KOhm with 100 KOhm - Printed circuit TA05 replaced by TA 06. These two modifications solve the problem caused by too much vertical width variation and improve the assembly of some components.
			HA01	<ul style="list-style-type: none"> - Removal of the aluminium screen on the rear casing - Motherboard modification - Video pre-amplifier board modification. With these modifications model HA23 becomes model HA01.
CDU 1431/N	HA24	HANTAREX		Video Low Emission

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CDU 1431/E	HA01	HANTAREX		This model is the low cost version of monitor HANTAREX HA23.
			Rev. 01	- Modifications made to improve the calibration of the current limiter.
			Rev. 02	- The values of the capacitors resistances and diodes have been changed to meet factory requirements.
			Rev. 04	- The printed circuit of the video board has been modified with the addition of capacitor C5. This avoids possible damage to the LM 1203 component during Flash Over tests on grid G2 of the cathode ray tube.
			R06	- Due to possible knocking out of line of picture tube and front frame during transport, remove 4 support lugs and insert 4 plates for the tube. - To improve the production process and standardize components, remove and add some resistors, add 3 jumpers in place of R4, R20 and R34.
MDU 1441	P	PHILIPS (version 220 V)	Rev. 01	- Capacitor C300 removed. A 4.7 pF ceramic capacitor has been mounted between transistor TR302 and ground. This modification solves the radiodisturbance problem out of VDE 0871B limits to a frequency of 270 MHz.
			Rev. 02	- Replacement of resistor R3131 10 Ohm, with one of 15 Ohm. Solves the problem of brightness decay.
			Rev. 03	- The 510 KOhm R539 resistance has been changed to 270 KOhm. This improves brightness control during cut-off.
			Rev. 04	- The clamps that secure the main board to the monitor frame have been modified so the printed circuit on the main board is not damaged.
			Rev. 05	- The main board printed circuit has been modified on the components side to accomodate capacitor C316.

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MDU 1441	P/Y	PHILIPS (version N. Europe Canada N. America)	Rev. 01	- Capacitor C300 removed. Installation of a 4.7 pF ceramic capacitor between the base of transistor TR302 and ground. This modification solves the radiodisturbance problems out of VDE 0871B limits to a frequency of 270 MHz.
			Rev. 02	- The 10 Ohm R3131 resistance has been changed to 15 Ohm. Solves the problem of brightness decay.
			Rev. 03	- The 510 KOhm R539 resistance has been changed to 270 KOhm. This improves brightness control during cut-off.
			Rev. 04	- The clamps that secure the main board to the monitor frame have been modified so that the printed circuit on the main board is not damaged.
			Rev. 05	- The printed circuit on the main board has been modified on the components side to accommodate capacitor C316. - To increase the FCC-B margins, fit a toroid on the cable connecting the motherboard to the video final board: for the TEN200 version only.
CDU 1548	HA01 HA02	HANTAREX	Rev. 01	- Replacement of resistor R347 , 4.7 Ohm 1 W with a 4.7 Ohm 0.5 W resistor on the mother board (changes to level 01) - 1 KOhm 0.25 W resistor added in position R12 on the interface board (changes to level 01) - Inductance L209 replaced by a jumper on power unit (changes to 01). These modifications solve: - Geometric distortion problems - Power supply problems
MDU 1441/LE	-	PHILIPS	Rev. 01	- The problem concerning missing margins for factory calibrations has been solved.
CDU 1448/LE	-	PANASONIC	Rev. 01	- Voltage variant : 110 V / 220 V

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CDU 1438	HA51	HANTAREX	Rev. 01*	- The printed circuit of the video board has been changed to accommodate capacitor C5. Avoids possible damage to the LM 1203 component during Flash Over test on grid G2 of the cathode ray tube.
			Rev. 03	- Due to possible knocking out of line of picture tube and front frame during transport, remove 4 support lugs and insert 4 plates for the tube. - Alternative components: insert a BYV26 on the current BA159.
			Rev. 04	- Beam current limiter calibration improved. - Producibility with automatic equipment improved. - R217 working temperature reduced. - Track interrupted between terminal RV118 and ground. - 4K7 resistor placed between terminal RV118 and ground. - P133 replaced by a 4K7 1/4W 5% resistor. - Change to the 10K trimmer RV118. - 3K3 resistor R138 changed to 6K8 1/4W. - 3K3 resistor R217 changed to 4K7 1/2W.
			Rev. 05	- For improved producibility on automated assembly lines, use printed circuit TA11/E in place of TA09.
			Rev. 01	- The securing of the EAT transformer to the main board has been improved. - Components have been recovered from both soldered and components sides. - The calibration field has been optimized and the RESET signal has been improved. - The Start Up has been improved with a 90 V mains supply. - The visual output has been improved. - Improved fastening of power supply board SMM040. Changed securing screw and washer.
CDU 1764	SA01	SALORA	Rev. 02	- To obtain the IMQ and FCC-B seals, include the seal on the brands plate.

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CDU 1448	HA61	HANTAREX	Rev. 01	<ul style="list-style-type: none"> - The values of the capacitors resistances and diodes have been changed to meet factory requirements. (This modification is only implemented on ENEL models identified with HA31). - To adapt the monitor to automated line production, values of some resistors and capacitors have been changed.
			Rev. 02	<ul style="list-style-type: none"> - The printed circuit on the video board has been changed to accommodate capacitor C5. This avoids damage to the LM 1203 component during Flash Over tests on grid G2 of the cathode ray tube. (This modification is only implemented on ENEL models identified with HA31.) - For improved driving of transistor T123, include a resistor between the base of T123 and ground on the board copper side. - Due to possible knocking out of line of picture tube and front frame during transport, remove 4 support lugs and insert 4 plates for the tube.
			Rev. 03	<ul style="list-style-type: none"> - Due to difficulties in finding the Toshiba CRT, the Hitachi CRT is used. For the Hitachi CRT, R128 is changed from 0.75 Ω to 0.51 Ω 1 W. Size of transformer TH101 is also changed.
CDU 1435	ENEL HA31 Version	HANTAREX	Rev. 01	<ul style="list-style-type: none"> - Due to possible knocking out of line of picture tube and front frame during transport, remove 4 support lugs and insert 4 plates for the tube. - Alternative components: insert the BYV26 in the current BA159. - For improved producibility on automated assembly lines, use printed circuit TA11/E in place of TA09.

Model	Label Code	Manufacturer	Level	Description of Modification
CDU 2082	-	FIMI	Rev. 02	<ul style="list-style-type: none"> - Improved focussing: 330 K resistor included between pins 2 and 4 of dynamic focus transformer T803. - For connection of several monitors, 3 interrupted tracks have been absorbed and 3 cuts made on the VIDEO AMPLIFIER board. - Mylar sheet inserted between dissipator of transistor V819 and the high voltage generator box to avoid short circuiting. - To avoid possible alteration of the characteristics of capacitor C839, use a HEAVY DUTY capacitor. - To resolve video setting problems during the production process: Resistors and capacitors changed and added, two wirings made, degauss coil and connectors on degauss board changed. Rating of two capacitors on the video amplifier board changed. On horizontal deflection board, C261 removed and 10 K 10 R230 changed. - Due to power supply board switching-on difficulties with the 110 V/60 Hz mains with the voltage on the 90 V margin, resistor rating changed, jumper Z616 removed and 47K trimmer R610 inserted. - For improved EMI margins: on the LOGIC board, a 15x14 toroid is included on the cable between filter and fuse, rating of some resistors and capacitors has been changed, a new EPROM release (from R. 1.8 to R. 1.81) has been fitted.
			Rev. 03	<ul style="list-style-type: none"> - To obtain the DEMKO seal; fuse changed, fuse-holder changed, and seal included on the brands plate. - Due to excessive heat dissipation of transistor U807 under extreme working conditions, rating of a resistor and a capacitor on the vertical deflection board has been changed.
			Rev. 04	<ul style="list-style-type: none"> - Due to picture synchronization difficulties at power-on with the M300-30 and M700-10 PC's, firmware release has been changed from 1.82 to 1.83.

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Model	Label Code	Manufacturer	Level	Description of Modification
CDU 439	GS02	GOLDSTAR	Rev. 01	Replaces CDU 439 GS01 which was not certified for the Northern European markets. <ul style="list-style-type: none"> - Improved focussing and moir effect: CRT gun changed from BU-M to BU-H SUN type. - Goldstar deflection yoke introduced as an alternative. - New anti-implosion band included on CRT. - Transport optimization, containers now hold 504 units instead of 480. Sizes of box and polystyrene shells have been changed.
			Rev. 02	<ul style="list-style-type: none"> - DEMKO standards extended to all of Europe. High Breaking fuse T2 5A 250 V now used, marking added to the printed circuit.