RE 505 & RE 506 AM/FM/FMX
Programmable Stereo Generator
Instruction Manual

SAFETY PRECAUTIONS FOR LINE-POWERED EQUIPMENT

All line-powered equipment can be dangerous. Therefore, certain basic rules and precautions must be observed to ensure the best possible safety for users, service personnel, as well as third parties. At RE TECHNOLOGY AS we have taken great care during the design and production of our equipment. However, safety may be impaired by incorrect installation, handling, or intervention.

WARNING

Ensure that the line cable, connectors, and power outlet all have the correct configuration, to establish a protective earth. Disconnecting the protective earth conductor, inside or outside the equipment, may potentially be hazardous to the operator. Removing the covers may expose parts carrying potentially dangerous voltages.

INSTALLATION

This is a Safety Class I unit which requires protective earthing via the IEC power inlet. Before switching on, the unit must be connected via the third wire in the power cable to a protective earth contact in the line socket. The protective action must not be negated by using an extension cord (power cable) without a protective conductor (protective earth). Grounding one conductor of a two-conductor outlet is not sufficient protection. Ensure that the line fuse has the correct value according to the voltage and power consumption. If the unit requires separate signal grounding, through external connections to the unit chassis, do not disconnect the protective earth.

SERVICE

Only trained service personnel should attempt to dismantle and repair the unit. Take great care during the installation and service of the unit, especially when adjusting or measuring an open unit under voltage. Before removing any covers, switch off the unit and remove the line cable from the power outlet.
Capacitors inside the unit may hold dangerous charges for a considerable time after the unit has been switched off. If it is necessary to replace components in the line connected partition or area, use only new parts of the correct and approved type. Take special care to maintain or re-establish the protective earthing. The conductivity must be measured after the service or repair is finished. Do not remove any warning labels. Replace any damaged or illegible labels with new labels.

BACK-UP BATTERIES

For units with lithium back-up batteries, ensure, when replacing them, that they are of the same type and are correctly installed before you switch the power on to the unit. Do not recharge the batteries or expose them to temperatures above 100 °C (212 °F). Dispose of used batteries responsibly, according to your national/local guidelines. The batteries contain chemicals which are harmful to the environment. When you dispose of the unit itself, first remove the batteries and dispose of them separately.

SAFETY SYMBOLS

Warning. The unit will be marked with this symbol when it is necessary for the user to refer to the manual.

Ground terminal (sometimes used in the manual to indicate circuit common connected to the chassis).

Attention. Observe precautions for handling Electrostatic Sensitive Devices.

Danger. Live voltage exceeding 1000 V.

Warning label for laser radiation. The product is marked with this symbol if it is necessary to protect against laser radiation which is invisible and can cause permanent damage to the eye.

Use of Product Names. The product names mentioned herein are used for identification purposes only, and may be trademarks and/or registered trademarks of their respective companies.

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1 INTRODUCTION

1.1 Introduction

The RE505 FM/FMX Programmable Stereo Generator and the RE506 AM/FM/FMX Programmable Stereo Generator both provide a time multiplexed composite signal conforming to the FCC and EBU standards for FM stereo broadcasting. In addition an FMX [1] stereo signal can be generated conforming to the specifications and recommendations set forth by Broadcast Technology Partners.

The FMX Stereo Broadcast System is a new technique for improving the received signal to noise ratio and resultant coverage of FM stereo broadcasts. The new method utilizes a second stereophonic subcarrier in quadrature at 38 kHz, modulated by a heavily compressed audio difference L-R signal. New generation receivers appropriately expand this diffference signal, resulting in noise free stereo reception to the geographical limits of equivalent monophonic reception. Still, compatibility with existing mono and stereo receivers is maintained.

The RE505 and RE506 offer the following features :

* All stereo functions : L&R, L=R, L=-R, L, R
* Independant control of stereo mode : M+S, S', M+S+S'
* 10 Hz FMX ID level settable between 0 and 1.9 % in steps of 0.1 %
* 19 kHz FM pilot level settable between 0 and 19 % in steps of 1 %
* 25 Hz AM pilot level settable between 0 and 19 % in steps of 1 %, RE506 only
* Modulation level settable between 0 and 99 % in steps of 1 %
* Crystal based synthesis of ID, Pilot, 38 kHz subcarrier and quadrature 38 kHz subcarrier

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1. FMX is a trademark of Broadcast Technology Partners

* Modulation by internal and external sources. A selector offers the choice of up to eight modulation sources in both the L and R channel. Each modulation source can either be a built-in low distortion LF oscillator with fixed frequency and accurate level or an external LF oscillator combined with a built-in AGC circuit to ensure a constant level. An out of range indication is provided, when the modulation source level is not correct.

* Full front panel control and choice of 3 interfaces for remote programmability of all functions. The following interfaces are available :

  - BCD Interface, direct access to a 4-bit data bus and a 4-bit address bus for controlling the front panel

  - RE Memory Bus Interface, storing of complete front panel setups that can be easily recalled using the RE901 Keyboard

  - IEEE488 Bus Interface, remote control of all functions by means of a computer

The RE505 FM/FMX Programmable Stereo Generator together with an RE108 Synthesized Signal Generator and an RE201 Dual Channel Audio Analyzer constitutes a complete audio and RF test system, which may be manually or remotely controlled.

With the RE506 AM/FM/FMX Programmable Stereo Generator together with an RE107 Synthesized Signal Generator instead of the above RE108/RE505 you get an RF test system capable of testing receivers with FM/FMX stereo as well as the Motorola C-QUAM AM stereo system.

2 INSTALLATION

This section contains general instructions for the installation and operation of the RE505 FM/FMX Programmable Stereo Generator and the RE506 AM/FM/FMX Programmable Stereo Generator.

2.1 Installation

When unpacking the instrument, the accessories and the packing material should be inspected for any damage. If the RE505/RE506 and/or the accessories should be damaged, please notify the carrier and your local RE INSTRUMENTS representative or the factory. The packing material should be retained for inspection by the carrier in case of complaint. Please refer to section 5 for a description of equipment and accessories.

Power requirements

The RE505/RE506 will operate on either 115 V or 220 V AC line supplies. The required line voltage is selected by a slide switch on the rear panel.

In order to change the line voltage, remove the locking-plate by unscrewing the two securing screws. Switch the slide switch to the required line voltage and replace the locking-plate. When changing the line voltage the line supply fuse must also be changed. The correct fuse rating is printed beside the fuse holder :

Nominal AC voltage	Line fuse
115 V	0.63 A slow blow
220 V	0.315 A slow blow

* * * CAUTION * * *

Always make sure that the line voltage selector is set to the correct position and that a fuse having the correct rating is installed in the fuse holder before connecting the RE505/RE506 to any AC source.

In accordance with international safety regulations the RE505/RE506 is supplied with a 3-wire line cord which, when connected to an appropriate AC power outlet, grounds the instrument cabinet. If the instrument is to be connected to an AC power outlet without a ground connection, the ground jack on the rear panel can be used to ground the instrument.

Environmental requirements

The RE505/RE506 will comply with the specifications given where the operating enviroment is within the following limitations :

Ambient temperature	5 C to 40 C
Relative humidity	20 % to 80 % non-condensing

The instrument should be stored in an environment with a temperature between -40 C and +70 C, and a relative humidity of less than 80 % non-condensing.

3 FRONT AND REAR PANELS

3.1 RE505 Front panel

The front panel of the RE505 has been divided into a number of distinct areas, as shown in figure 3.1 on the next page.

(1) MODULATION SOURCE R
Selects between the eight possible modulation sources to be used as modulation signal in the right channel.

(2) MODULATION SOURCE L
Selects between the eight possible modulation sources to be used ad modulation signal in the left channel.

(3) SOURCE and UNCAL
UNCAL indicates that the modulation level is uncalibrated because PRE-EMPHASIS (8) or FMX stereo (10,13) is on. When both UNCAL and SOURCE is on, it indicates that the level of the selected modulation source is out of range, i.e. 1 Vp +/- 1 %.

(4) R/L LEVEL
Indicates the level of the modulation signal.

(5) R/L LEVEL INCREASE-DECREASE
Steps the R/L level shown on (4) up and down in steps of 1 % or 10 %.

(6) REMOTE
Indicates that the instrument is remotely controlled, i.e. the front panel is disabled.

(7) FUNCTION
Selects between the five operating modes : L&R, L=R, L=-R, L, R and function OFF.

(8) PRE-EMPH.
Selects between four pre-emphasis modes : 25 µs, 50 µs, 75 µs and pre-emphasis OFF.

(9) PILOT LEVEL
Indicates the level of the 19 kHz FM pilot signal.

(10) FM PILOT, ON/OFF and INCREASE-DECREASE
ON/OFF switches the 19 kHz FM pilot on and off.
INCREASE-DECREASE steps the pilot level shown in (9) up and down in steps of 1 %.

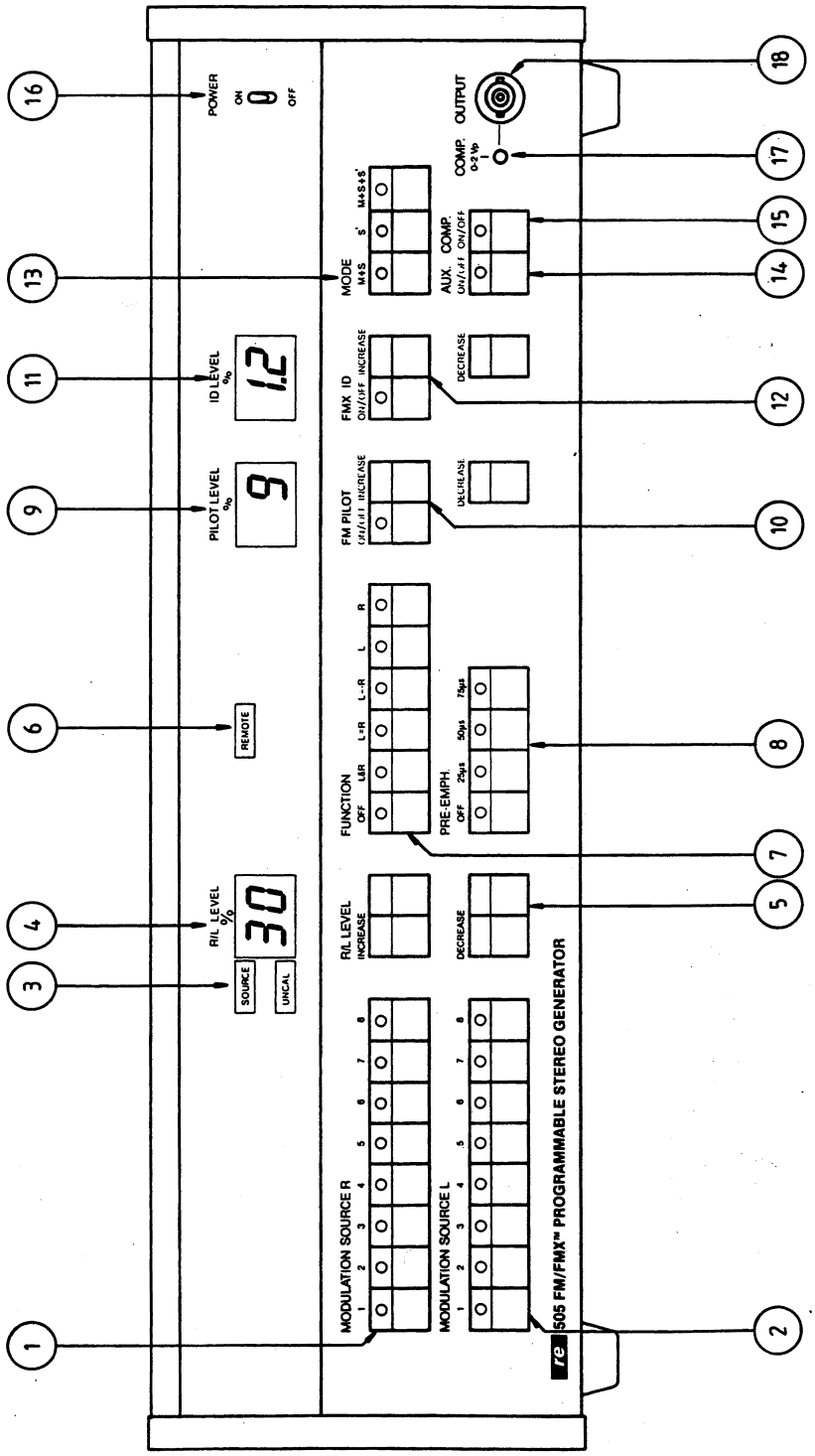


Figure 3.1 - Front Panel of RE505

(11) ID LEVEL
Indicates the level of the 10 Hz FMX ID signal.

(12) FMX ID, ON/OFF and INCREASE-DECREASE
ON/OFF switches the 10Hz FMX ID on and off.
INCREASE-DECREASE steps the ID level shown in (11) up and down in steps of 0.1 %

(13) MODE
Selects between the three stereo modes : M+S, S', M+S+S'

(14) AUX.
Switches the signal applied to the AUX. COMP. IN connector on and off, thus allowing signals such as ARI and SCA to be added to the composite signal.

(15) COMP.
Switches the composite signal on and off at all compsite output connectors.

(16) POWER
Switches the AC power to the RE505 power supply on and off

(17) COMP., 0-2 Vp
Potentiometer used for setting the level at the OUTPUT and COMP. OUT connectors, (18) and (25) respectively, to a level between 0 and 2 Vp at 100 % composite level.

(18) OUTPUT
Composite output at a variable level set by (17).

3.2 RE505 Rear panel

The rear panel of the RE505 is divided into three distinct areas - power supply, interface option and input/output. The rear panel is shown in figure 3.2 on the next page.

(19) LINE VOLTAGE SELECTOR
Selects either 115 V or 220 V AC line voltage.

(20) GROUND JACK
Used if grounding via the line cord is not possible.

(21) MAINS SOCKET
Provides AC line voltage and ground connection when appropriate line cord is used.

(22) LINE FUSE
0.315 A for 220 V and 0.63 A for 115 V operation.

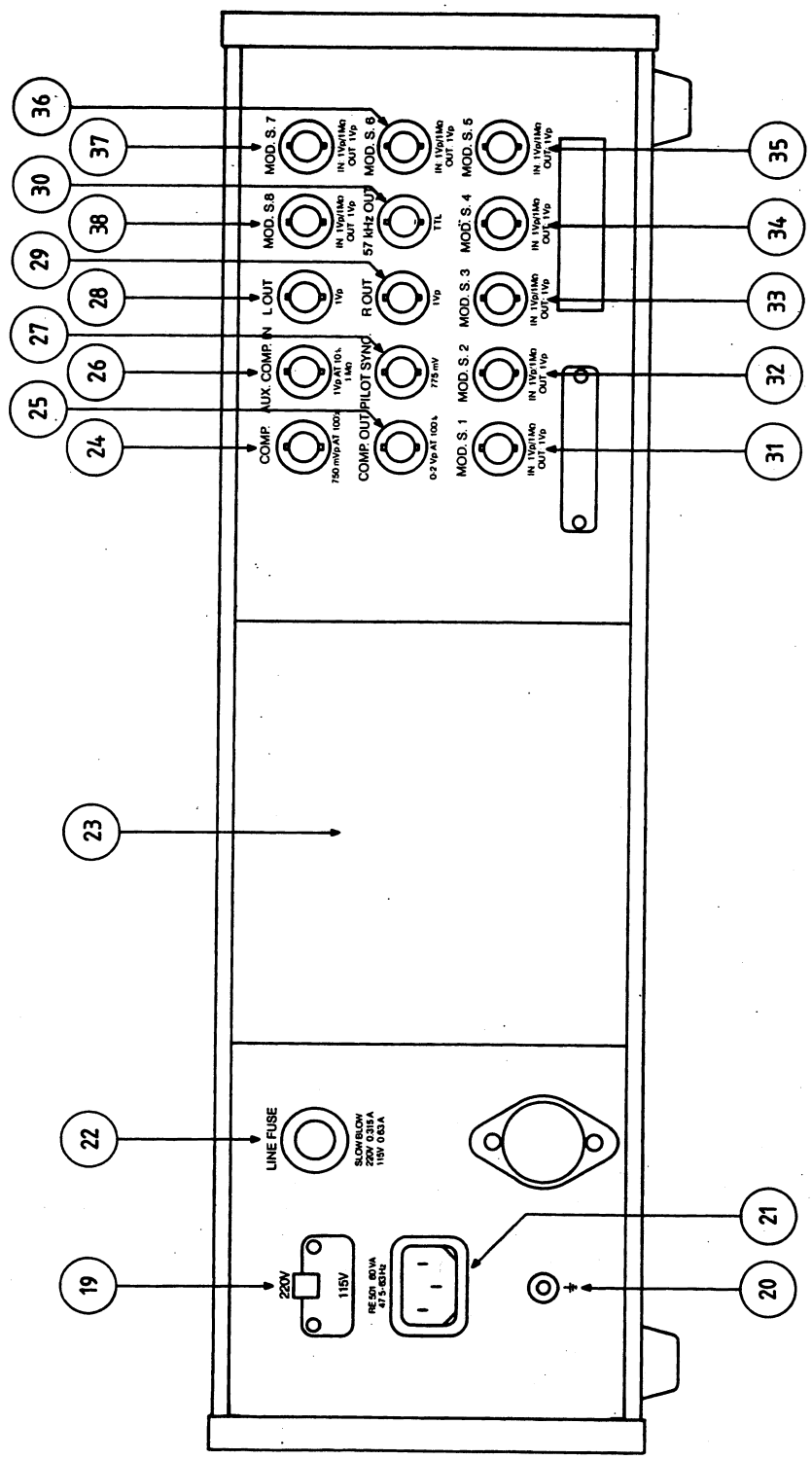


Figure 3.2 - Rear Panel of RE505

(23) INTERFACE OPTION
Location of the remote control interface, which can be either BCD Bus, Memory Bus or IEEE488 Bus.

(24) COMP.
BNC connector. The composite signal is available at this connector with a fixed level of 750 mVp at 100 % composite level for stereo modulation of an RE signal generator to full 75 kHz deviation.

(25) COMP. OUT
BNC connector. The composite signal is the same as at the OUTPUT connector (18) on the front panel.

(26) AUX. COMP. IN
BNC connector for connection of an ARI traffic coder or an SCA generator. A level of 1 Vp corresponds to a composite level of 10 %.

(27) PILOT SYNC.
BNC connector. The 19 kHz FM pilot signal with a sinusoidal waveform is always available at this connector. The level is 775 mVRMS.

(28) L OUT
BNC connector. The modulation signal in the L channel chosen by means of the selector (2) is available at this connector. The level is 1 Vp, when the modulation signal is applied from a built-in LF oscillator or from an AGC backed-up external modulation source. In all other cases the level is the same as the level of the applied external modulation source.

(29) R OUT
BNC connector. As for (28), except that signal is the modulation signal in the R channel chosen by means of the selector (1).

(30) 57 kHz OUT
Synchronization signal for an RE ARI coder.

(31) to (38) MOD. SOURCE 1 to 8 IN/OUT
BNC connectors for connection of external modulation sources. When an AGC circuit is built-in, the level of the modulation source must be between 0.8 and 1.2 Vp. In all other cases the level must be 1 Vp for calibrated modulation level.
When the modulation source is a built-in LF oscillator, the modulation signal is available at this connector with a level of 1 Vp.

3.3 RE506 Front panel

The front panel of the RE506 has been divided into a number of distinct areas, as shown in figure 3.3 on the next page.

(1) MODULATION SOURCE R
Selects between the eight possible modulation sources to be used as modulation signal in the right channel.

(2) MODULATION SOURCE L
Selects between the eight possible modulation sources to be used ad modulation signal in the left channel.

(3) SOURCE and UNCAL
UNCAL indicates that the modulation level is uncalibrated because PRE-EMPHASIS (8) or FMX stereo (10,13) is on.
When both UNCAL and SOURCE is on, it indicates that the level of the selected modulation source is out of range, i.e. 1 Vp +/- 1 %.

(4) R/L LEVEL
Indicates the level of the modulation signal.

(5) R/L LEVEL INCREASE-DECREASE
Steps the R/L level shown on (4) up and down in steps of 1 % or 10 %.

(6) REMOTE
Indicates that the instrument is remotely controlled, i.e. the front panel is disabled.

(7) FUNCTION
Selects between the five operating modes : L&R, L=R, L=-R, L, R and function OFF.

(8) PRE-EMPH.
Selects between four pre-emphasis modes in FM/FMX stereo : 25 µs, 50 µs, 75 µs and pre-emphasis OFF.

(9) PILOT LEVEL
Indicates the level of the 19 kHz FM pilot and the 25 Hz AM pilot signals.

(10) AM/FM PILOT, ON/OFF and INCREASE-DECREASE
ON/OFF switches the 19 kHz FM pilot and the 25 Hz AM pilot on and off.
INCREASE-DECREASE steps the pilot level shown in (9) up and down in steps of 1 %.

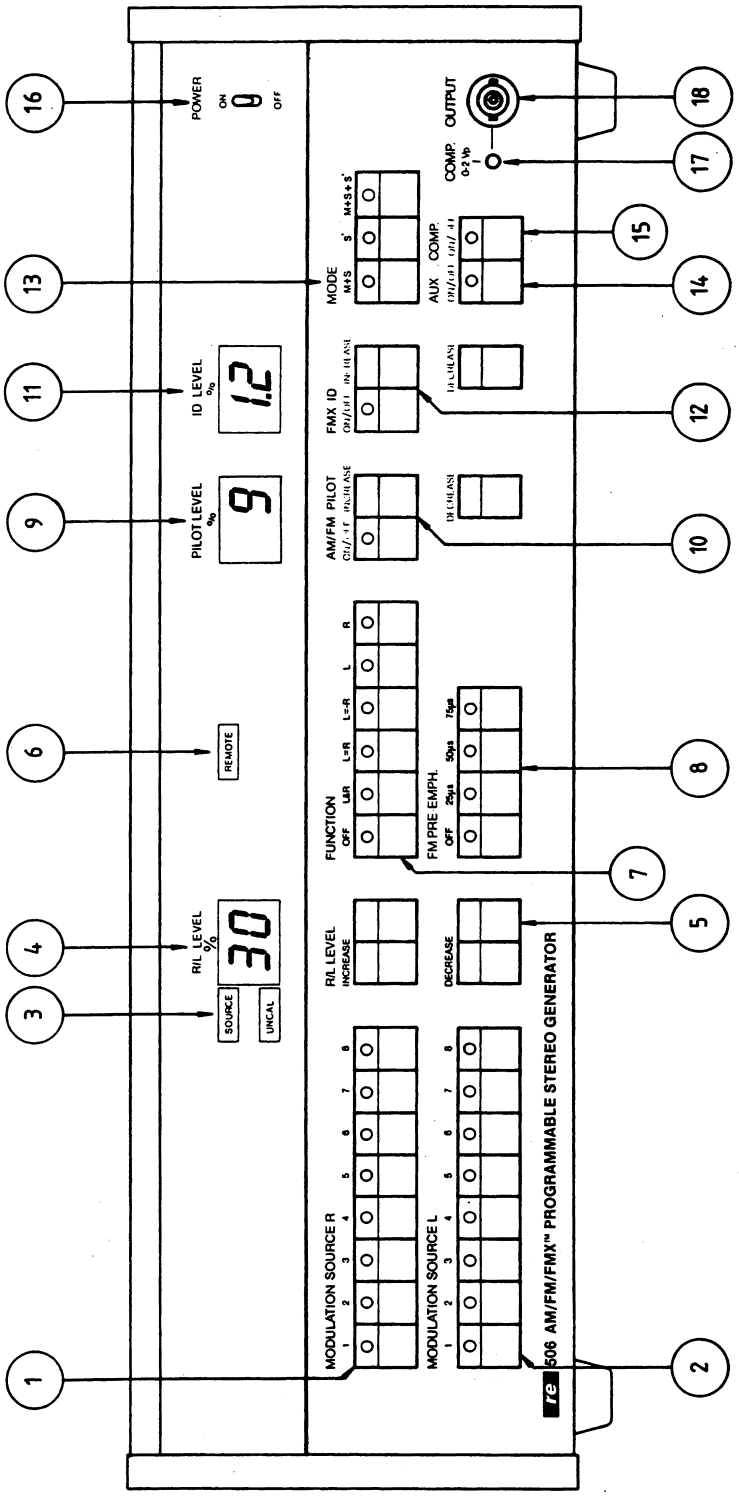


Figure 3.3 - Front Panel of RE506

(11) ID LEVEL
Indicates the level of the 10 Hz FMX ID signal.

(12) FMX ID, ON/OFF and INCREASE-DECREASE
ON/OFF switches the 10Hz FMX ID on and off.
INCREASE-DECREASE steps the ID level shown in (11) up and down in steps of 0.1 %

(13) MODE
Selects between the three stereo modes : M+S, S', M+S+S'

(14) AUX.
Switches the signal applied to the AUX. COMP. IN connector on and off, thus allowing signals such as ARI and SCA to be added to the FM/FMX composite signal.

(15) COMP.
Switches the FM/FMX composite signal on and off at all composite output connectors.

(16) POWER
Switches the AC power to the RE506 power supply on and off

(17) COMP., 0-2 Vp
Potentiometer used for setting the level at the OUTPUT and COMP. OUT connectors, (18) and (25) respectively, to a level between 0 and 2 Vp at 100 % composite level.

(18) OUTPUT
FM/FMX Composite output at a variable level set by (17).

3.4 RE506 Rear panel

The rear panel of the RE506 is divided into three distinct areas - power supply, interface option and input/output. The rear panel is shown in figure 3.4 on the next page.

(19) LINE VOLTAGE SELECTOR
Selects either 115 V or 220 V AC line voltage.

(20) GROUND JACK
Used if grounding via the line cord is not possible.

(21) MAINS SOCKET
Provides AC line voltage and ground connection when appropriate line cord is used.

(22) LINE FUSE
0.315 A for 220 V and 0.63 A for 115 V operation.

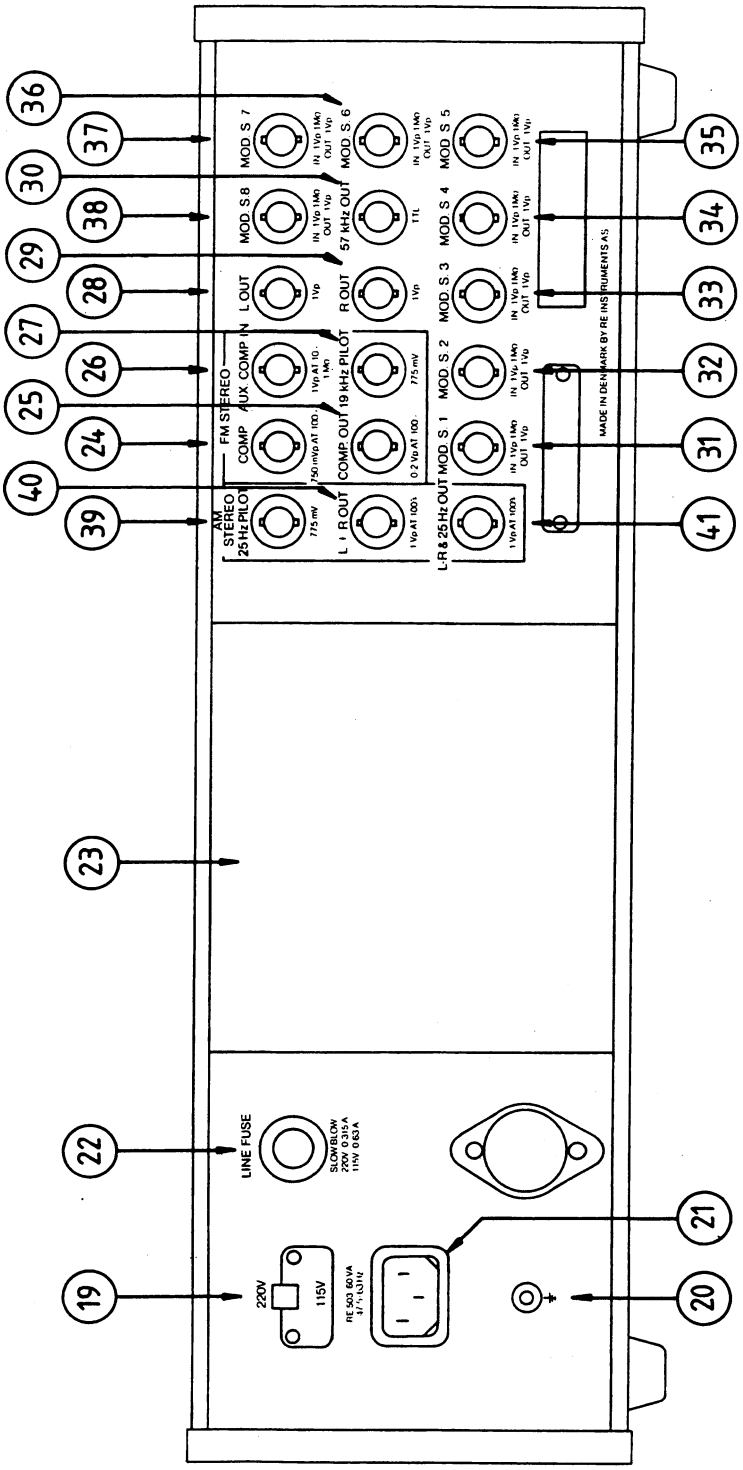


Figure 3.4 - Rear Panel of RE506

(23) INTERFACE OPTION
Location of the remote control interface, which can be either BCD Bus, Memory Bus or IEEE488 Bus.

(24) COMP.
BNC connector. The FM/FMX composite signal is available at this connector with a fixed level of 750 mVp at 100 % composite level for stereo modulation of an RE signal generator to full 75 kHz deviation.

(25) COMP. OUT
BNC connector. The FM/FMX composite signal is the same as at the OUTPUT connector (18) on the front panel.

(26) AUX. COMP. IN
BNC connector for connection of an ARI traffic coder or an SCA generator. A level of 1 Vp corresponds to a composite level of 10 %.

(27) 19 kHz PILOT
BNC connector. The 19 kHz FM pilot signal with a sinusoidal waveform is always available at this connector. The level is 775 mVRMS.

(28) L OUT
BNC connector. The modulation signal in the L channel chosen by means of the selector (2) is available at this connector. The level is 1 Vp, when the modulation signal is applied from a built-in LF oscillator or from an AGC backed-up external modulation source. In all other cases the level is the same as the level of the applied external modulation source.

(29) R OUT
BNC connector. As for (28), except that signal is the modulation signal in the R channel chosen by means of the selector (1).

(30) 57 kHz OUT
Synchronization signal for an RE ARI coder.

(31) to (38) MOD. SOURCE 1 to 8 IN/OUT
BNC connectors for connection of external modulation sources. When an AGC circuit is built-in, the level of the modulation source must be between 0.8 and 1.2 Vp. In all other cases the level must be 1 Vp for calibrated modulation level.
When the modulation source is a built-in LF oscillator, the modulation signal is available at this connector with a level of 1 Vp.

(39) 25 Hz PILOT
BNC connector. The 25 Hz AM pilot signal with a sinusoidal waveform is always available at this connector. The level is 775 mV RMS.

(40) AM STEREO L+R OUT
BNC connector. The monophonic channel signal L+R is available at this connector. When FUNCTION (7) is set to L&R and the R/L LEVEL (4) shows 50 % the output level is 1 Vp. The L+R signal is connected to the L+R connector on the RE107. 1 Vp corresponds to 100 % AM.

(41) AM STEREO L-R & 25 Hz OUT
BNC connector. The stereophonic subchannel L-R and the 25 Hz AM pilot signals are available at this connector. When FUNCTION (7) is set to L&R and R/L LEVEL (4) shows 50 % the level of the L-R signal is 1 Vp. When AM/FM PILOT (10) is set to ON and PILOT LEVEL (9) shows 4 % the level of the 25 Hz signal is 40 mVp. The L-R & 25 Hz signal is connected to the L-R connector on the RE107. 1Vp corresponds to $\pi/4$ radian PM, when L+R is zero.

4 OPERATION

4.1 Defining an FMX stereo signal

FMX ID

In order to set the FMX ID signal you must first switch the signal on by pressing the FMX ID ON/OFF key. Both the ID LEVEL display and the LED in the ON/OFF key are now on.

The ID level is set by pressing the INCREASE-DECREASE keys. The currently recommended level from Broadcast Technology Partners is 1.0 %. Note that when you switch the signal on and off, the ID level is not changed from the value you have just set.

Please note that according to the specifications of the FMX stereo broadcast system the 10 Hz ID signal is modulated with the 38 kHz quadrature subcarrier.

MODE

The RE505/RE506 gives you full flexibility in the control of the stereo mode. You may select between M+S, S' and M+S+S'. In the M+S mode normal FM stereo generated i.e. the composite signal consists of both the monophonic channel and the stereophonic subchannel.

In the S' mode the composite signal only consists of the quadrature stereophonic subchannel, i.e. it it possible to test the operation of the FMX decoder in the receiver separately.

In the M+S+S' mode a complete FMX stereo signal is generated i.e. the composite signal consists of the monophonic channel and the normal and the quadrature stereophonic subchannels.

4.2 Defining AM and FM stereo signals

Please refer the the manuals for the RE501 Programmable Stereo Generator and the RE503 AM/FM Programmable Stereo Generator, section BIII - Operating Instructions.

5 EQUIPMENT AND ACCESSORIES

The following equipment and accessories should be found when unpacking the RE505 FM/FMX Programmable Stereo Generator or the RE506 AM/FM/FMX Stereo Generator:

Code	Type	Description
391-035	RE505	FM/FMX Programmable Stereo Generator
391-036	RE506	AM/FM/FMX Programmable Stereo Generator
615-303		220 V Line Cord
615-403		110 V Line Cord
		0.315 A Fuse, slow blow
		0.63 A Fuse, slow blow
983-303		Instruction Manual

Option equipment and accessories for the RE505/RE506 :

Code	Type	Description
617-025		BNC Cable, length 0.35 m
617-042		BNC Cable, length 1 m
617-043		BNC Cable, length 2 m
617-761		Multicable for interconnecting Memory Bus Interface Units with RE901 or RE201, length 2.5 m
617-762		Multicable for interconnecting Memory Bus Interface Units, length 0.35 m
617-763		Multicable for interconnecting Memory Bus Interface Units, length 0.7 m
617-781		Multicable for interconnecting Memory Bus Interface Units with RE901 or RE201, length 1.5 m
617-899		IEEE488 Cable, length 1 m
617-900		IEEE488 Cable, length 2 m
900-997		Memory Bus Interface Unit

901-013		BCD Interface Unit
901-039		AGC circuit plug-in
901-686		IEEE488 Bus Interface Unit
901-040		Mod. oscillator plug-in, various standard frequencies available
906-003	RE901	Keyboard to control the RE505 via the RE Memory Bus, including cable
906-004		19" Rack Mounting Kit
983-303		Instruction Manual for the RE505/RE506

6 PARTS LISTS AND SCHEMATIC DIAGRAMS

6.1 Parts Lists

All electronic components are included in the parts lists. Parts marked with an * are manufactured by RE INSTRUMENTS AS.

When ordering spare parts, it is important that you give the following information:

* Code No. and description of the part.
* Circuit reference from the schematic diagram.
* Complete type designation of RE product.

Main Parts List

The parts lists as well as the schematic diagrams are arranged according to code No.

FYX Extender Board (901-772)

CAPACITORS

Designation	Description	Code no.
C 1	C Electrolytic 100u -10+50% 25V	261-073
C 2	C Ceramic 100n 20% 50V	213-401
C 3	C Solid alu 10u 20% 25V	265-010
C 4	C Ceramic 100n 20% 50V	213-401
C 5	C Ceramic 27p 2% 100V NP0	213-118
C 6	C Solid alu 10u 20% 25V	265-010
C 7	C Ceramic 100n 20% 50V	213-401
C 8	C Electrolytic 100u -10+50% 25V	261-073
C 9	C Ceramic 100n 20% 50V	213-401
C 10	C Ceramic 100n 20% 50V	213-401
C 13	C Solid alu 22u 20% 6.3V	265-009
C 14	C Ceramic 100n 20% 50V	213-401
C 15	C Ceramic 100n 20% 50V	213-401
C 16	C Bipolar 10u 40V	261-302
C 17	C Solid alu 10u 20% 25V	265-010
C 18	C Ceramic 100n 20% 50V	213-401
C 19		213-xxx
C 20	C Ceramic 100n 20% 50V	213-401
C 21	C Ceramic 100n 20% 50V	213-401
C 22	C Ceramic 100n 20% 50V	213-401
C 25	C Ceramic 100n 20% 50V	213-401
C 29	C Solid alu 10u 20% 25V	265-010
C 30	C Ceramic 100n 20% 50V	213-401
C 31	C Solid alu 10u 20% 25V	265-010
C 32	C Ceramic 100n 20% 50V	213-401
C 33	C Polypropylen 51n1 1% 63V 150PPM	242-301
C 35	C Polyester L22 10% 63V	241-032
C 36	C Polyester MKT 1u 10% 50V	241-064
C 37	C Polystyrene 12n1 1% 63V	243-307
C 38	C Ceramic 100n 20% 50V	213-401
C 39	C Ceramic 100n 20% 50V	213-401
C 40	C Ceramic 100n 20% 50V	213-401
C 41	C Solid alu 10u 20% 25V	265-010
C 42	C Ceramic 100n 20% 50V	213-401
C 43	C Ceramic 100n 20% 50V	213-401
C 44	C Ceramic 100n 20% 50V	213-401
C 45	C Solid alu 33u 20% 10V	265-005
C 48	C Solid alu 10u 20% 16V	265-008
C 49	C Solid alu 10u 20% 16V	265-008
C 50	C Solid alu 10u 20% 16V	265-008
C 51	C Solid alu 10u 20% 16V	265-008
C 59	C Polystyrene 806p 1% 63V	243-335
C 60	C Ceramic 120p 2% 100V NP0	213-230
C 62	C Ceramic 22p 2% 100V NP0	213-206

FMX Extender Board (901-772)

C 63	C Ceramic 22p 2% 100V NPO	213-206

DIODES

Desisnation	Description	Code no.
CR 1	Diode Zener 1N825-0.4W DO7	350-637
CR 2	Diode BAV20 SI 150V 200mA DO35	350-023
CR 3	Diode 1N4148 SI 75V 10mA DO35	350-018
CR 4	Diode 1N4148 SI 75V 10mA DO35	350-018
CR 5	Diode 1N4148 SI 75V 10mA DO35	350-018
CR 6	Diode 1N4148 SI 75V 10mA DO35	350-018
CR 7	Diode Zener C4V3 0.4W DO-35	350-639
CR 8	Diode 1N4148 SI 75V 10mA DO35	350-018
CR 9	Diode 1N4148 SI 75V 10mA DO35	350-018
CR 10	Diode Zener 1N825-0.4W DO7	350-637
CR 11	Diode BAV20 SI 150V 200mA DO35	350-023
CR 12	Diode BAV20 SI 150V 200mA DO35	350-023

TRANSISTORS

Desisnation	Description	Code no.
Q 1	Transistor 2N3904 SI NPN 40V 200mA 625mW TO92	360-064
Q 2	Transistor 2N3904 SI NPN 40V 200mA 625mW TO92	360-064
Q 3	Transistor 2N3904 SI NPN 40V 200mA 625mW TO92	360-064
Q 4	Transistor 2N3904 SI NPN 40V 200mA 625mW TO92	360-064
Q 5	Transistor 2N3904 SI NPN 40V 200mA 625mW TO92	360-064

INTEGRATED ANALOG CIRCUITS

Desisnation	Description	Code no.
QA 1	IC 2151 Voltage Controlled AMP.	364-782
QA 2	IC NE5534A OP-Amp low noise	364-639
QA 3	IC NE5532A Dual OP-Amp low noise	364-640
QA 4	IC AD712K Dual OP.AMP.	364-791
QA 5	IC AD712K Dual OP.AMP.	364-791
QA 6	IC NE5532A Dual OP-Amp low noise	364-640
QA 7	IC NE5532A Dual OP-Amp low noise	364-640
QA 8	IC AD712K Dual OP.AMP.	364-791
QA 9	IC TL082CP Dual JFET OP-Amp	364-619
QA 10	IC NE5532A Dual OP-Amp low noise	364-640
QA 11	IC NE5534A OP-Amp low noise	364-639

FMX Extender Board (901-772)

INTEGRATED DIGITAL CIRCUITS

Desisnation	Description	Code no.
CD 1	IC CD4066EC Quad bilateral switches	364-432
CD 2	IC CD4066BC Quad bilateral switches	364-432

RESISTORS

Desisnation	Description	Code no.
R 1	R Metal Film 20K 1% 0.5W TC50	140-630
R 2	R Metal Film 56E 5% 0.4W TC250	107-256
R 3	R Cermet Trimpot 50K 10% 0.5W	182-416
R 4	R Metal Film 100K 5% 0.4W TC250	107-610
R 5	R Metal Film 56E 5% 0.4W TC250	107-256
R 6	R Metal Film 3K9 5% 0.4W TC250	107-439
R 7	R Metal Film 10K 5% 0.4W TC250	107-510
R 8	R Metal Film 20K 1% 0.5W TC50	140-630
R 9	R Metal Film 39E 5% 0.4W TC250	107-239
R 10	R Metal Film 39E 5% 0.4W TC250	107-239
R 11	R Metal Film 11K8 1% 0.5W TC100	141-011
R 12	R Metal Film 2K49 0.5% 0.4W TC50	141-174
R 13	R Metal Film 13K7 1% 0.5W TC50	140-629
R 14	R Metal Film 8K25 1% 0.5W TC50	140-609
R 15	R Cermet Trimpot 10K 10% 0.5W TC100	182-407
R 16	R Metal Film 10K7 0.5% 0.4W TC50	140-640
R 17	R Metal Film 1K91 1% 0.5W TC50	140-624
R 19	R Metal Film 10K 5% 0.4W TC250	107-510
R 20	R Metal Film 3K92 1% 0.5W TC50	140-631
R 21	R Metal Film 10K 1% 0.5W TC50	140-625
R 22	R Metal Film 10K 1% 0.5W TC50	140-625
R 23	R Metal Film 10K 1% 0.5W TC50	140-625
R 24	R Metal Film 39E 5% 0.4W TC250	107-239
R 25	R Metal Film 39E 5% 0.4W TC250	107-239
R 26	R Cermet Trimpot 2K2 10% 0.5W TC70	182-313
R 27	R Metal Film 20K 1% 0.5W TC50	140-630
R 28	R Metal Film 8K87 1% 0.5W TC50	140-623
R 29	R Metal Film 20K 1% 0.5W TC50	140-630
R 30	R Metal Film 200K 1% 0.5W TC50	140-675
R 31	R Metal Film 3K3 5% 0.4W TC250	107-433
R 32	R Metal Film 33K 5% 0.4W TC250	107-533
R 33	R Carbon Film 2K2 5% 0.2W	106-722
R 34	R Metal Film 330K 5% 0.4W TC250	107-633
R 35	R Metal Film 1K1 1% 0.5W TC50	140-612
R 36	R Cermet Trimpot 2K2 10% 0.5W TC70	182-313
R 37	R Metal Film 33K 5% 0.4W TC250	107-533
R 38	R Metal Film 39E 5% 0.4W TC250	107-239

FMX Extender Board (901-772)

R 39	R Metal Film 39E 5% 0.4W TC250	107-239
R 40	R Cermet Trimpot 2K 10% 0.5W TC100	182-412
R 41	R Metal Film 7K32 1% 0.4W TC100	140-945
R 42	R Metal Film 10K 0.1% 0.1W TC25	141-010
R 43	R Metal Film 10K 0.1% 0.1W TC25	141-010
R 44	R Metal Film 3K09 1% 0.5W TC50	141-024
R 45	R Metal Film 1K05 1% 0.5W TC50	141-106
R 46	R Cermet Trimpot 2K2 10% 0.5W TC70	182-313
R 48	R Metal Film 10K 0.1% 0.1W TC25	141-010
R 49	R Metal Film 10K 0.1% 0.1W TC25	141-010
R 50	R Metal Film 3K07 1% 0.5W TC50	141-024
R 51	R Metal Film 499K 0.5% 0.6W TC50	141-142
R 52	R Cermet Trimpot 470E 20% 0.5W TC70	182-302
R 53	***** Unknown text *****	140-001
R 55	R Metal Film 900K 0.1% 0.1W TC15	141-060
R 56	R Metal Film 10KE 5% 0.4W TC250	107-310
R 57	R Metal Film 14K 1% 0.5W TC50	140-574
R 58	R Metal Film 9K31 1% 0.5W TC50	140-678
R 59	R Cermet Trimpot 2K2 10% 0.5W TC70	182-313
R 63	R Metal Film 102K 1% 0.5W TC50	141-061
R 64	R Metal Film 102K 1% 0.5W TC50	141-061
R 65	R Metal Film 39E 5% 0.4W TC250	107-239
R 66	R Metal Film 39E 5% 0.4W TC250	107-239
R 67	R Metal Film 102K 1% 0.5W TC50	141-061
R 68	R Metal Film 499K 0.5% 0.4W TC50	141-062
R 69	R Metal Film 249K 1% 0.5W TC50	140-645
R 70	R Metal Film 124K 0.5% 0.4W TC50	141-066
R 71	R Metal Film 61K9 1% 0.5W TC50	140-490
R 72	R Metal Film 49K9 1% 0.5W TC50	140-145
R 73	R Metal Film 1K 1% 0.5W TC50	140-687
R 74	R Metal Film 1K 1% 0.5W TC50	140-687
R 75	R Metal Film 9K53 1% 0.5W TC50	141-019
R 76	R Cermet Trimpot 2K2 10% 0.5W TC70	182-313
R 77	R Metal Film 1M 5% 0.4W TC250	107-710
R 78	R Cermet Trimpot 100K 20% 0.5W TC70	182-311
R 79	R Metal Film 1K 5% 0.4W TC250	107-410
R 80	R Metal Film 39E 5% 0.4W TC250	107-239
R 81	R Metal Film 39E 5% 0.4W TC250	107-239
R 82	R Metal Film 1K1 1% 0.5W TC50	140-562
R 83	R Metal Film 2K2 5% 0.4W TC250	107-422
R 84	R Cermet Trimpot 2K2 10% 0.5W TC70	182-313
R 85	R Metal Film 12K 5% 0.4W TC250	107-512
R 86	R Metal Film 1K 1% 0.5W TC50	140-687
R 87	R Metal Film 100E 5% 0.4W TC250	107-310
R 88	R Metal Film 4K99 0.5% 0.4W TC50	140-734
R 89	R Metal Film 4K99 0.5% 0.4W TC50	140-734
R 90	R Metal Film 100E 5% 0.4W TC250	107-310
R 91	R Thick Film 8K47K 5% 0.1W	146-075
R 92	R Thick Film 8K10K 5% 0.1W	146-003

FMX Extender Board (901-772)

R 93	R Metal Film 33K 5% 0.4W TC250	107-532
R 94	R Metal Film 33K 5% 0.4W TC250	107-532
R 95	R Metal Film 33K 5% 0.4W TC250	107-532
R 96	R Metal Film 33K 5% 0.4W TC250	107-532
R 97	R Metal Film 33K 5% 0.4W TC250	107-532
R 104	R Metal Film 2K15 1% 0.5W TC50	140-774
R 105	R Cermet Trimpot 2K2 10% 0.5W TC70	182-313
R 106	R Cermet Trimpot 470E 20% 0.5W TC70	182-302
R 107	R Cermet Trimpot 2K2 10% 0.5W TC70	182-313

TEST POINTS

Designation	Description	Code no.
TPA	Terminal Strip 4-Pol. Vinkel MOD II	805-650

TEST POINTS

Designation	Description	Code no.
TPB	Terminal strip 6-pol vinkel MOD II	805-651

Disital PCB (901-773)

CAPACITORS

Desisnation	Description	Code no.
C 1	C Ceramic 10n -20+80% 63V	213-020
C 2	C Ceramic Trim 10-60PF Vertical	286-006
C 3	C Ceramic 120P 2% 100V NPO	213-230
C 4	C Ceramic 18P 2% 100V NPO	213-222
C 5	C Ceramic 56P 2% 100V NPO	213-210
C 6	C Ceramic 56P 2% 100V NPO	213-210
C 7	C Ceramic 100n 20% 50V	213-401
C 8	C Ceramic 100n 20% 50V	213-401
C 9	C Ceramic 100n 20% 50V	213-401
C 10	C Ceramic 100n 20% 50V	213-401
C 12	C Ceramic 100n 20% 50V	213-401
C 13	C Ceramic 100n 20% 50V	213-401
C 14	C Ceramic 100n 20% 50V	213-401
C 15	C Ceramic 100n 20% 50V	213-401
C 16	C Ceramic 100n 20% 50V	213-401
C 17	C Ceramic 100n 20% 50V	213-401
C 18	C Ceramic 100n 20% 50V	213-401
C 19	C Ceramic 100n 20% 50V	213-401
C 20	C Ceramic 100n 20% 50V	213-401
C 21	C Solid alu 10u 20% 16V	265-008
C 22	C Ceramic 100n 20% 50V	213-401
C 23	C Ceramic 100n 20% 50V	213-401
C 24	C Solid alu 10u 20% 16V	265-008
C 25	C Solid alu 33u 20% 10V	265-005
C 32	C Solid alu 33u 20% 10V	265-005
C 33	C Ceramic 100n 20% 50V	213-401
C 34	C Ceramic 100n 20% 50V	213-401
C 35	C Ceramic 100n 20% 50V	213-401
C 36	C Ceramic 100n 20% 50V	213-401
C 37	C Ceramic 100n 20% 50V	213-401
C 38	C Ceramic 100n 20% 50V	213-401
C 39	C Ceramic 100n 20% 50V	213-401
C 40	C Ceramic 100n 20% 50V	213-401
C 41	C Ceramic 100n 20% 50V	213-401
C 42	C Ceramic 100n 20% 50V	213-401

CONNECTORS

Desisnation	Description	Code no.
J 3	Terminal 12-Pol. Vinkel MCD II	805-878

SECTION 6 _____ PARTS LIST

Disital PCB (901-773)

CHOKES

Desisnation	Description	Code no.
L 1	Choke HF Mini 47U 5% 450mA 1.1 Ohm	703-008

INTEGRATED DIGITAL CIRCUITS

Desisnation	Description	Code no.
QD 1	IC 74HC04 HEX INV	364-757
QD 2	IC 74HC74 Dual D-FF	364-755
QD 3	IC 74HC4017 Johnson DEC.Counter	364-753
QD 4	IC 74HC74 Dual D-FF	364-755
QD 5	IC 74HC74 Dual D-FF	364-755
QD 6	IC 74HC74 Dual D-FF	364-755
QD 7	IC 74HC4017 Johnson DEC.Counter	364-753
QD 8	IC 74HC4017 Johnson DEC.Counter	364-753
QD 9	IC 74HC32 Quad 2-Input OR Gate	364-756
QD 10	IC 74HC74 Dual D-FF	364-755
QD 11	IC 74HC4520 Dual Bin Counter	364-752
QD 12	IC 74HC4017 Johnson DEC.Counter	364-753
QD 13	IC 74HC4017 Johnson DEC.Counter	364-753
QD 14	IC 74HC4017 Johnson DEC.Counter	364-753
QD 15	IC 74HC4017 Johnson DEC.Counter	364-753
QD 16	IC 74AC374 OCT D-FF 3-State	364-754
QD 17	IC 74AC374 OCT D-FF 3-State	364-754
QD 18	IC 74HC74 Dual D-FF	364-755
QD 19	IC 74HC32 Quad 2-Input OR Gate	364-756
QD 20	IC 74HC04 HEX INV	364-757
QD 21	IC 74AC374 OCT D-FF 3-State	364-754
QD 22	IC 74HC04 HEX INV	364-757

RESISTORS

Desisnation	Description	Code no.
R 1	R Metal Film 1M 5% 0.4W TC250	107-710
R 2	R Metal Film 1K 5% 0.4W TC250	107-410
R 3	R Metal Film 2K2 5% 0.4W TC250	107-422
R 7	R Metal Film 2K2 5% 0.4W TC250	107-422
R 8	R Thick Film 4*10K 5% 0.1W	144-017
R 9	R Thick Film 4*10K 5% 0.1W	144-017
R 10	R Thick Film 4*10K 5% 0.1W	144-017
R 13	R Metal Film 34K8 1% 0.5W TC50	140-486
R 14	R Metal Film 100K 0.5% 0.4W TC50	140-553
R 15	R Metal Film 174K 1% 0.5W TC50	140-664
R 24	R Metal Film 4K42 1% 0.5W TC50	140-775

RES05/RES06/6908

Disital PCB (901-773)

MISCELLANEOUS

Desisnation	Description	Code no.
Y 1	Crystal 4.56 MHz	910-105

FMX Modulator and Switch (901-774)

CAPACITORS

Desisnation	Description	Code no.
C 1	C Solid alu 10u 20% 25V	265-010
C 2	C Solid alu 10u 20% 25V	265-010
C 3	C Ceramic 100n 20% 50V	213-401
C 4	C Ceramic 100n 20% 50V	213-401
C 5	C Solid alu 10u 20% 25V	265-010
C 6	C Ceramic 18p 2% 100V NPO	213-222
C 11	C Solid alu 10u 20% 25V	265-010
C 14	C Solid alu 10u 20% 25V	265-010
C 15	C Solid alu 10u 20% 25V	265-010
C 16	C Ceramic 100n 20% 50V	213-401
C 17	C Ceramic 100n 20% 50V	213-401
C 18	C Solid alu 10u 20% 25V	265-010
C 19	C Solid alu 10u 20% 25V	265-010
C 20	C Ceramic 10p 2% 100V NPO	213-205
C 23	C Electrolytic 220u -10+50% 16V	261-075
C 24	C Electrolytic 220u -10+50% 16V	261-075
C 25	C Solid alu 10u 20% 25V	265-010
C 26	C Solid alu 10u 20% 25V	265-010
C 27	C Ceramic 100n 20% 50V	213-401
C 28	C Ceramic 100n 20% 50V	213-401
C 29	C Ceramic 100n 20% 50V	213-401
C 30	C Ceramic 100n 20% 50V	213-401
C 32	C Solid alu 10u 20% 25V	265-010
C 33	C Solid alu 10u 20% 25V	265-010
C 40	C Ceramic 10p 2% 100V NPO	213-205
C 42	C Electrolytic 220u -10+50% 16V	261-075
C 43	C Electrolytic 220u -10+50% 16V	261-075
C 45		213-xxx
C 46		213-xxx
C 47	C Ceramic 10p 2% 100V NPO	213-205
C 48	C Ceramic 10p 2% 100V NPO	213-205
C 49	C Ceramic 68p 2% 100V NPO	213-215

DIODES

Desisnation	Description	Code no.
CR 2	Diode BAV20 SI 150V 200mA DO35	350-023
CR 3	Diode BAV20 SI 150V 200mA DO35	350-023
CR 4	Diode BAV20 SI 150V 200mA DO35	350-023
CR 5	Diode BAV20 SI 150V 200mA DO35	350-023
CR 6	Diode zener BZX79-C6V2 0.4W DO-35	350-604
CR 7	Diode zener BZX79-C6V2 0.4W DO-35	350-604
CR 8	Diode Zener C7V5-0.4W DO-35	350-621

RES05/RES06/SP08

FMX Modulator and Switch (90i-774)

CR 9	Diode Zener C7V5-0.4W DO-35	350-621
CR 10	Diode BAV20 SI 150V 200mA DO35	350-023
CR 11	Diode BAV20 SI 150V 200mA DO35	350-023
CR 12	Diode BAV20 SI 150V 200mA DO35	350-023
CR 13	Diode BAV20 SI 150V 200mA DO35	350-023
CR 14	Diode BAV20 SI 150V 200mA DO35	350-023
CR 15	Diode BAV20 SI 150V 200mA DO35	350-023
CR 16	Diode BAV20 SI 150V 200mA DO35	350-023
CR 17	Diode BAV20 SI 150V 200mA DO35	350-023

CONNECTORS

Desisnation	Description	Code no.
J 2		617-xxx
J 3	Terminal Strip 4-Pol. Vinkel MOD II	805-650

TRANSISTORS

Desisnation	Description	Code no.
Q 1	Transistor FET J175-18 P 30V 350mW TO-92	360-252
Q 2	Transistor J109-18 N-JFET N 25V	360-188
Q 3	Transistor J109-18 N-JFET N 25V	360-188
Q 4	Transistor J109-18 N-JFET N 25V	360-188
Q 5	Transistor J109-18 N-JFET N 25V	360-188
Q 6	Transistor BC557B SI PNP 45V 100mA 500mW	360-160
Q 7	Transistor BC557B SI PNP 45V 100mA 500mW	360-160
Q 8	Transistor BC547 SI NPN 45V 100mA 500mW	360-159
Q 9	Transistor BC557B SI PNP 45V 100mA 500mW	360-160
Q 10	Transistor J109-18 N-JFET N 25V	360-188
Q 11	Transistor FET J175-18 P 30V 350mW TO-92	360-252
Q 12	Transistor J109-18 N-JFET N 25V	360-188
Q 13	Transistor J109-18 N-JFET N 25V	360-188
Q 14	Transistor J109-18 N-JFET N 25V	360-188
Q 15	Transistor FET J175-18 P 30V 350mW TO-92	360-252
Q 16	Transistor FET J175-18 P 30V 350mW TO-92	360-252
Q 17	Transistor FET J175-18 P 30V 350mW TO-92	360-252

INTEGRATED ANALOG CIRCUITS

Desisnation	Description	Code no.
QA 1	IC LM324N Quad OP-Amp	364-176
QA 2	IC AD712K Dual OP.AMP.	364-791
QA 3	IC AD711K OP.AMP	364-792
QA 4	IC CA3054 Dual Differential Amplifier	364-070
QA 5	IC CA3054 Dual Differential Amplifier	364-070
QA 6	IC LM318N OP-Amp	364-635

FMX Modulator and Switch (901-774)

QA 7	IC AD712K Dual OP.AMP.	364-791
QA 9	IC LM318N OP-Amp	364-635
QA 10	IC LM324N Quad OP-Amp	364-176
QA 11	IC LM318N OP-Amp	364-635

INTEGRATED DIGITAL CIRCUITS

Desisnation	Description	Code no.
QD 3	RE505/6 Modulator 901-774 QD3 626147	368-373

RESISTORS

Desisnation	Description	Code no.
R 1	Diode BAV20 SI 150V 200mA DO35	350-023
R 1	R Metal Film 100K 5% 0.4W TC250	107-610
R 2	R Metal Film 100K 5% 0.4W TC250	107-610
R 3	R Metal Film 100K 5% 0.4W TC250	107-610
R 4	R Metal Film 100K 5% 0.4W TC250	107-610
R 5	R Metal Film 100K 5% 0.4W TC250	107-610
R 6	R Metal Film 1K 1% 0.5W TC50	140-687
R 7	R Metal Film 1K 1% 0.5W TC50	140-687
R 8	R Metal Film 1K 1% 0.5W TC50	140-687
R 9	R Metal Film 1K 1% 0.5W TC50	140-687
R 10	R Cermet Trimpot 100E 20% 0.5W TC70	182-317
R 11	R Metal Film 39E 5% 0.4W TC250	107-239
R 12	R Metal Film 39E 5% 0.4W TC250	107-239
R 13	R Metal Film 4K7 5% 0.4W TC250	107-447
R 14	R Metal Film 4K7 5% 0.4W TC250	107-447
R 16	R Metal Film 1K21 1% 0.5W TC50	140-557
R 17	R Metal Film 2K55 1% 0.5W TC50	141-080
R 18	R Metal Film 2K55 1% 0.5W TC50	141-080
R 19	R Metal Film 1K05 1% 0.5W TC50	141-106
R 20	R Cermet Trimpot 470E 20% 0.5W TC70	182-302
R 21	R Metal Film 953E 1% 0.5W TC50	140-531
R 22	R Metal Film 3K48 1% 0.5W TC50	140-571
R 23	R Metal Film 3K48 1% 0.5W TC50	140-571
R 24	R Metal Film 953E 1% 0.5W TC50	140-531
R 25	R Cermet Trimpot 100E 20% 0.5W TC70	182-317
R 28	R Metal Film 10K 0,1% 1/8W TC5PPM	141-234
R 29	R Metal Film 10K 0,1% 1/8W TC5PPM	141-234
R 30	R Metal Film 2K2 5% 0.4W TC250	107-422
R 31	R Metal Film 560E 5% 0.4W TC250	107-356
R 32	R Metal Film 6K8 5% 0.4W TC250	107-468
R 33	R Carbon Film 15M 10% 1/8W 140PPM	109-016
R 34	R Metal Film 1M 5% 0.4W TC250	107-710
R 35	R Cermet Trimpot 100K 20% 0.5W TC70	182-311
R 36	R Cermet Trimpot 100K 20% 0.5W TC70	182-311

FMX Modulator and Switch (901-774)

R 37	R Metal Film 150E 5% 0.4W TC250	107-315
R 38	R Metal Film 150E 5% 0.4W TC250	107-315
R 39	R Metal Film 100E 5% 0.4W TC250	107-310
R 40	R Metal Film 1K2 5% 0.4W TC250	107-412
R 41	R Metal Film 1K2 5% 0.4W TC250	107-412
R 42	R Metal Film 680E 5% 0.4W TC250	107-368
R 43	R Metal Film 1K8 5% 0.4W TC250	107-418
R 44	R Metal Film 2K2 5% 0.4W TC250	107-422
R 45	R Metal Film 3K3 5% 0.4W TC250	107-433
R 46	R Metal Film 1K8 5% 0.4W TC250	107-418
R 47	R Metal Film 2K1 1% 0.5W TC50	140-688
R 48	R Metal Film 1K2 5% 0.4W TC250	107-412
R 49	R Metal Film 1K2 5% 0.4W TC250	107-412
R 50	R Metal Film 150E 5% 0.4W TC250	107-315
R 51	R Metal Film 150E 5% 0.4W TC250	107-315
R 52	R Metal Film 150E 5% 0.4W TC250	107-315
R 53	R Metal Film 60K4 1% 0.5W TC50	140-649
R 54	R Metal Film 10K7 1% 0.5W TC50	140-427
R 55	R Cermet Trimpot 47K 20% 0.5W TC70	182-314
R 56	R Metal Film 215K 1% 0.5W TC50	140-666
R 57	R Metal Film 680K 5% 0.4W TC250	107-668
R 58	R Metal Film 10K 0.1% 1/8W TC5PPM	141-234
R 59	R Cermet Trimpot 100K 20% 0.5W TC70	182-311
R 60	R Metal Film 1K 1% 0.5W TC50	140-387
R 61	R Cermet Trimpot 10K 20% 0.5W TC70	182-301
R 62	R Metal Film 1K5 5% 0.4W TC250	107-415
R 63	R Metal Film 1K5 5% 0.4W TC250	107-415
R 64	R Metal Film 3K74 1% 0.5W TC50	140-572
R 65	R Metal Film 39E 5% 0.4W TC250	107-239
R 66	R Metal Film 39E 5% 0.4W TC250	107-239
R 67	R Metal Film 4K7 5% 0.4W TC250	107-447
R 68	R Metal Film 100K 5% 0.4W TC250	107-610
R 69	R Metal Film 100K 5% 0.4W TC250	107-610
R 70	R Metal Film 2K49 0.5% 0.4W TC50	141-174
R 71	R Metal Film 2K49 0.5% 0.4W TC50	141-174
R 72	R Metal Film 2K49 1% 0.5W TC50	140-464
R 73	R Metal Film 14K3 1% 0.5W TC50	141-030
R 74	R Metal Film 14K9 1% 0.5W TC50	140-668
R 75	R Metal Film 2K49 1% 0.5W TC50	140-464
R 76	R Cermet Trimpot 1K 10% 0.5W TC70	182-310
R 77	R Metal Film 4K53 1% 0.5W TC50	140-617
R 83	R Metal Film 39E 5% 0.4W TC250	107-239
R 84	R Metal Film 39E 5% 0.4W TC250	107-239
R 85	R Metal Film 3K74 1% 0.5W TC50	140-572
R 86	R Metal Film 7K68 1% 0.5W TC50	140-621
R 87	R Metal Film 6K34 1% 0.5W TC50	140-776
R 88	R Metal Film 100K 5% 0.4W TC250	107-610
R 89	R Metal Film 100K 5% 0.4W TC250	107-610
R 90	R Metal Film 100K 5% 0.4W TC250	107-610

FMX Modulator and Switch (901-774)

R 93	R Metal Film 24K9 1% 0.5W TC50	140-635
R 94	R Metal Film 3K74 1% 0.5W TC50	140-572
R 95	R Metal Film 39E 5% 0.4W TC250	107-239
R 96	R Metal Film 39E 5% 0.4W TC250	107-239
R 97	R Metal Film 1K 1% 0.5W TC50	140-887
R 98	R Metal Film 1K 1% 0.5W TC50	140-887
R 99	R Metal Film 1K 1% 0.5W TC50	140-887
R 100	R Thick Film 8*47K 5% 0.1W	146-005
R 109	R Metal Film 100K 5% 0.4W TC250	107-610
R 110	R Metal Film 100K 5% 0.4W TC250	107-610
R 111	R Metal Film 100K 5% 0.4W TC250	107-610
R 112	R Metal Film 4K7 5% 0.4W TC250	107-447
R 133	R Metal Film 6K8 5% 0.4W TC250	107-468

CABLES

Desisnation	Description	Code no.
W 1		617-xxx
W 5	16 Pin Dil Socket	816-133

CABLES

Desisnation	Description	Code no.
Wa		603-xxx

CABLES

Desisnation	Description	Code no.
Wb		603-xxx

CABLES

Desisnation	Description	Code no.
Wc		603-xxx

FMX Keyboard (901-822)

CAPACITORS

Desisnation	Description	Code no.
C 1	C Ceramic 100n 20% 50V	213-401
C 2	C Ceramic 100n 20% 50V	213-401
C 5	C Ceramic 100n 20% 50V	213-401
C 6	C Ceramic 100n 20% 50V	213-401
C 10	C Ceramic 100n 20% 50V	213-401

INTEGRATED DIGITAL CIRCUITS

Desisnation	Description	Code no.
QD 4	IC HEF4532BP 8-input priority encoder	364-354
QD 9	IC HEF4532BP 8-input priority encoder	364-354
QD 14	IC HEF40106HEX Invertins Schmitt trisser	364-390
QD 19	IC HEF4532BP 8-input priority encoder	364-354
QD 24	IC HEF4013BP Dual D-type Flip-Flop	364-222
QD 31	IC HEF4013BP Dual D-type Flip-Flop	364-222
QD 43	IC 74HC08 Quad 2-Input And Gate	364-808

RESISTORS

Desisnation	Description	Code no.
R 3	R Thick Film 8*47K 5% 0.1W	146-005
R 5	R Thick Film 8*10K 5% 0.1W	146-003
R 6	R Metal Film 390E 5% 0.4W TC250	107-339
R 7	R Metal Film 390E 5% 0.4W TC250	107-339
R 8	R Metal Film 390E 5% 0.4W TC250	107-339
R 9	R Metal Film 390E 5% 0.4W TC250	107-339
R 10	R Thick Film 4*100K 5% 0.1W	146-014
R 12	R Metal Film 390E 5% 0.4W TC250	107-339
R 13	R Metal Film 390E 5% 0.4W TC250	107-339
R 14	R Metal Film 390E 5% 0.4W TC250	107-339
R 15	R Metal Film 10K 5% 0.4W TC250	107-510
R 16	R Metal Film 10K 5% 0.4W TC250	107-510
R 17	R Metal Film 10K 5% 0.4W TC250	107-510
R 18	R Metal Film 10K 5% 0.4W TC250	107-510
R 20	R Metal Film 10K 5% 0.4W TC250	107-510
R 21	R Metal Film 10K 5% 0.4W TC250	107-510
R 22	R Metal Film 10K 5% 0.4W TC250	107-510
R 23	R Metal Film 10K 5% 0.4W TC250	107-510
R 37	R Thick Film 8x390E 2% 0.2W	146-020
R 38	R Metal Film 390E 5% 0.4W TC250	107-339
R 39	R Metal Film 390E 5% 0.4W TC250	107-339
R 40	R Metal Film 390E 5% 0.4W TC250	107-339

FMX Keyboard (901-622)

R 41	R Metal Film 390E 5% 0.4W TC250	107-339
R 42	R Thick Film 4*10K 5% 0.1W	146-017

SWITCHES

Designation	Description	Code no.
S 1	Keyboard Switch With Red Led	551-163
S 2	Keyboard Switch With Red Led	551-163
S 3	Keyboard Switch With Red Led	551-163
S 4	Keyboard Switch With Red Led	551-163
S 5	Keyboard Switch With Red Led	551-163
S 6	Keyboard Switch With Red Led	551-163
S 7	Keyboard Switch With Red Led	551-163
S 8	Keyboard Switch With Red Led	551-163
S 9	Keyboard Switch With Red Led	551-163
S 10	Keyboard Switch With Red Led	551-163
S 11	Keyboard Switch With Red Led	551-163
S 12	Keyboard Switch	551-141
S 13	Keyboard Switch	551-141
S 14	Keyboard Switch With Red Led	551-163
S 15	Keyboard Switch	551-141
S 16	Keyboard Switch	551-141
S 17	Keyboard Switch With Red Led	551-163
S 18	Keyboard Switch With Red Led	551-163
S 19	Keyboard Switch With Red Led	551-163
S 20	Keyboard Switch With Red Led	551-163
S 21	Keyboard Switch With Red Led	551-163

SECTION 6 PARTS LIST

FMX Display (901-623)

CAPACITORS

Desisnation	Description	Code no.
C 7	C Solid alu 4u7 20% 25V	265-000
C 10	C Ceramic 100p 2% 100V NP0	213-211

LAMPS

Desisnation	Description	Code no.
I 1	Lamp 5V 0..06A	401-002

TRANSISTORS

Desisnation	Description	Code no.
Q 1	Transistor BC547 SI NPN 45V 100mA 500mW	360-159

INTEGRATED DIGITAL CIRCUITS

Desisnation	Description	Code no.
QD 27	IC SN74LS47N BCD-TO-Seven-Segment Decoders	364-163
QD 30	IC 74HC10 Triple 3-Input Nand Gate	364-603
QD 33	IC SN74LS47N BCD-TO-Seven-Segment Decoders	364-163
QD 42	IC 74HC00 Quad 2-Input Nand Gate	364-607
QD 44	IC 74HC132 Quad 2-InP Nand Schmitt Tisser	364-625
QD 47	IC SN74LS38N Quad 2-input Nand buffer	364-366
QD 48	IC 5082-7650 Display 7 Segment	364-231
QD 49	IC 5082-7650 Display 7 Segment	364-231
QD 50	IC 5082-7650 Display 7 Segment	364-231
QD 51	IC 5082-7650 Display 7 Segment	364-231

RESISTORS

Desisnation	Description	Code no.
R 27	R Metal Film 10K 5% 0.4W TC250	107-510
R 28	R Metal Film 100K 5% 0.4W TC250	107-610
R 29	R Metal Film 1K 5% 0.4W TC250	107-410
R 33	R Metal Film 390E 5% 0.4W TC250	107-339
R 34	R Metal Film 390E 5% 0.4W TC250	107-339
R 35	R Thick Film 8x390E 2% 0.2W	146-020
R 36	R Thick Film 8x390E 2% 0.2W	146-020
R 50	R Thick Film 8x390E 2% 0.2W	146-020

FMX Front Panel Logic (901-824)

CAPACITORS

Desisnation	Description	Code no.
C 1	C Ceramic 100n 20% 50V	213-401
C 2	C Ceramic 100n 20% 50V	213-401
C 3	C Ceramic 100n 20% 50V	213-401
C 4	C Ceramic 100n 20% 50V	213-401
C 5	C Ceramic 100n 20% 50V	213-401
C 6	C Ceramic 100n 20% 50V	213-401
C 6	C Ceramic 100n 20% 50V	213-401
C 7	C Ceramic 100n 20% 50V	213-401
C 8	C Solid alu 4u7 20% 25V	265-000
C 9	C Ceramic 100p 2% 100V NPO	213-211
C 10	C Ceramic 100n 20% 50V	213-401
C 11	C Ceramic 100n 20% 50V	213-401
C 12	C Ceramic 100n 20% 50V	213-401
C 13	C Ceramic 100n 20% 50V	213-401
C 14	C Ceramic 100n 20% 50V	213-401
C 15	C Ceramic 100n 20% 50V	213-401

INTEGRATED DIGITAL CIRCUITS

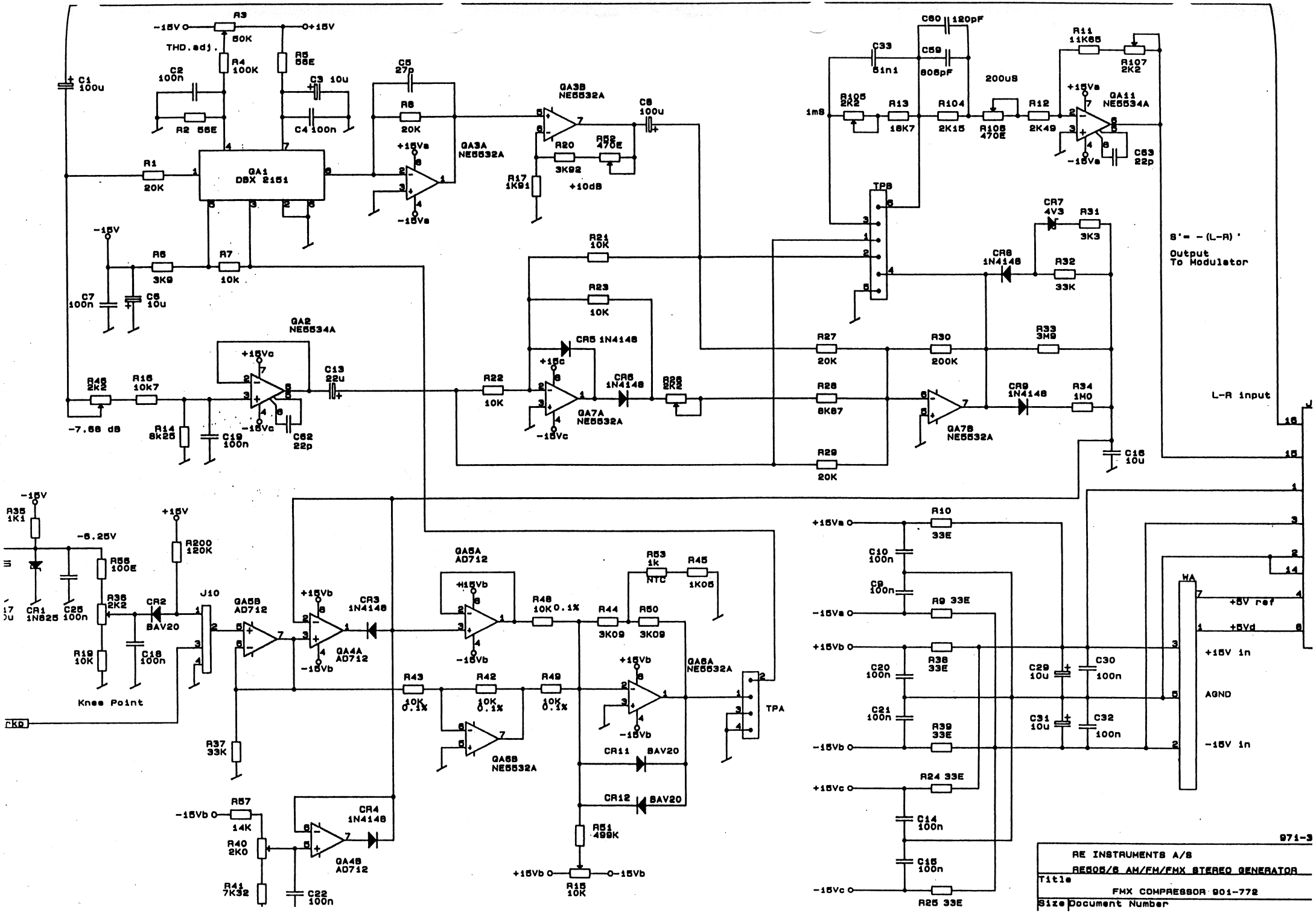
Desisnation	Description	Code no.
QD 1	IC 74HC237 Multiplex+Latch	364-776
QD 2	IC HEF40097BP 3-state HEX non-invertins buffers	364-264
QD 3	IC 74HC298 Quad 2-inp Multiplex	364-847
QD 5	IC HEF4073BP Tripple 3-input AND sate	364-385
QD 6	IC 74HC139 Decoder-Multiplex	364-771
QD 7	IC HEF4011BP Quad 2-input Nand sate	364-221
QD 8	IC 74HC298 Quad 2-inp Multiplex	364-847
QD 10	IC HEF4013BP Dual D-type Flip-Flop	364-222
QD 11	IC SN74LS126N Quad bus buffer sates with three-state	364-273
QD 12	IC HEF4519BP Quad 2-input multiplexer	364-365
QD 13	IC HEF4081BP Quad 2-input AND sate	364-228
QD 15	IC HEF40097BP 3-state HEX non-invertins buffers	364-264
QD 16	IC 74HC139 Decoder-Multiplex	364-771
QD 17	IC 74HC00 Quad 2-Input Nand Gate	364-807
QD 18	IC 74HC298 Quad 2-inp Multiplex	364-847
QD 20	IC SN74LS126N Quad bus buffer sates with three-state	364-273
QD 21	IC HEF4013BP Dual D-type Flip-Flop	364-222
QD 22	IC HEF4519BP Quad 2-input multiplexer	364-365
QD 23	IC HEF4081BP Quad 2-input AND sate	364-228
QD 25	IC HEF40192BP 4-bit up/down decade counter	364-358
QD 26	IC HEF4081BP Quad 2-input AND sate	364-228
QD 28	IC HEF4519BP Quad 2-input multiplexer	364-365
QD 29	IC HEF4011BP Quad 2-input Nand sate	364-221

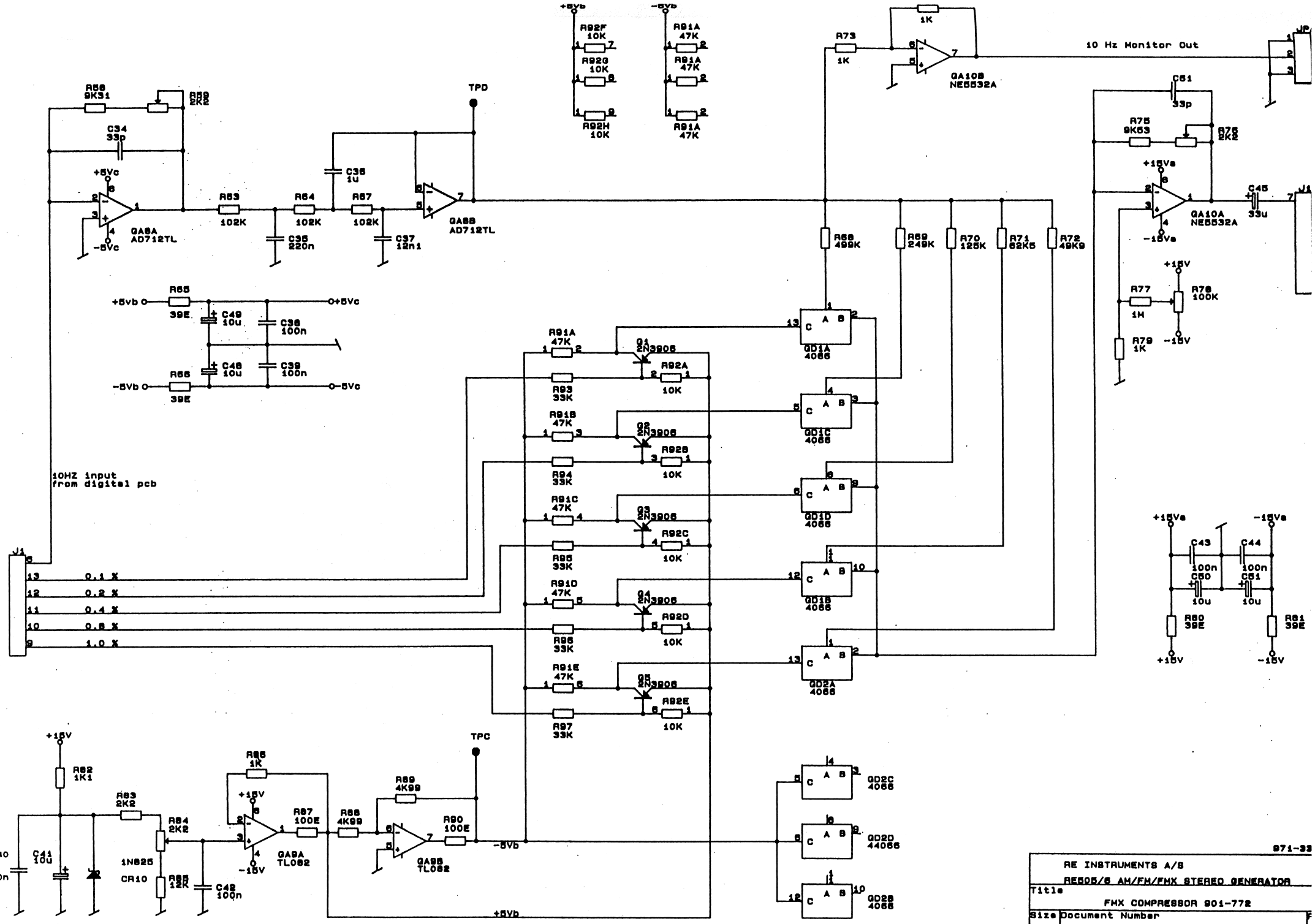
FMX Front Panel Losic (901-824)

QD 32	IC HEF40192BP 4-bit up/down decade counter	364-358
QD 34	IC HEF4023BP Triple 3-input Nand gate	364-223
QD 35	IC HEF4013BP Dual D-type Flip-Flop	364-222
QD 36	IC HEF40097BP 3-state HEX non-inverting buffers	364-264
QD 37	IC HEF4011BP Quad 2-input Nand gate	364-221
QD 38	IC HEF40097BP 3-state HEX non-inverting buffers	364-264
QD 39	IC 40098 Hex Inv.Buffer 3.State	364-652
QD 40	IC 40098 Hex Inv.Buffer 3.State	364-652
QD 41	IC 74HC4514 Decoder	364-770
QD 45	IC HEF4013BP Dual D-type Flip-Flop	364-222
QD 46	IC 74HC4049 HEX inverter	364-638
QD 52	IC 74HC32 Quad 2-Input OR Gate	364-756
QD 53	IC HEF4023BP Triple 3-input Nand gate	364-223
QD 54	IC 74HC132 Quad 2-InP Nand Schmitt Tisser	364-825

RESISTORS

Desisnation	Description	Code no.
R 25	R Thick Film 4*10K 5% 0.1W	146-017
R 26	R Thick Film 4*10K 5% 0.1W	146-017
R 30	R Metal Film 100K 5% 0.4W TC250	107-610
R 31	R Metal Film 10K 5% 0.4W TC250	107-510
R 32	R Thick Film 4*10K 5% 0.1W	146-017
R 40	R Thick Film 8*10K 5% 0.1W	146-003


R3
50K
THD.adj.
-15V
+15V
R4
100K
R5
56E
C1
100u
C2
100n
R2 56E
C3 10u
C4 100n
C5
27p
R6
20K
GA3B
NE5532A
GA3A
NE5532A
C8
100u
+15Va
-15Va
R20
3K92
R52
470E
+10dB
R17
1K91
R1
20K
GA1
DBX 2151
C60 120pF
C33
51n1
C59
806pF
200uS
R11
11K65
R107
2K2
R105
2K2
1mS
R13
18K7
R104
2K15
R106
470E
R12
2K49
GA11
NE5534A
C63
22p
TP8
CR7
4V3
R31
3K3
CR8
1N4148
R32
33K
S'= -(L-R)'
Output
To Modulator
R21
10K
R23
10K
R27
20K
R30
200K
R33
3M9
R28
8K87
R29
20K
CR5 1N4148
CR6
1N4148
R22
10K
R26
2K2
GA7A
NE5532A
GA7B
NE5532A
CR9
1N4148
R34
1M0
C16
10u
L-R input
-15V
R6
3K9
R7
10k
C7
100n
C6
10u
GA2
NE5534A
+15Vc
-15Vc
R45
2k2
R16
10k7
-7.68 dB
R14
8k25
C19
100n
C13
22u
C62
22p
-15V
R35
1K1
-6.25V
+15V
R200
120K
R55
100E
R36
2K2
CR2
BAV20
J10
R19
10K
C18
100n
Knee Point
CR1
1N825
C25
100n
GA5B
AD712
+15Vb
-15Vb
CR3
1N4148
GA4A
AD712
GA5A
AD712
R53
1k
NTC
R45
1K05
R48
10K 0.1%
R44
3K09
R50
3K09
R43
10K
0.1%
R42
10K
0.1%
R49
10K
0.1%
GA6B
NE5532A
GA6A
NE5532A
TPA
CR11 BAV20
CR12 BAV20
R37
33K
R57
14K
R40
2K0
R41
7K32
CR4
1N4148
GA4B
AD712
C22
100n
R51
499K
R15
10K
+15Va
R10
33E
C10
100n
C9
100n
R9 33E
R38
33E
C20
100n
C21
100n
R39
33E
R24 33E
C14
100n
C15
100n
R25 33E
C29
10u
C30
100n
C31
10u
C32
100n
WA
+5V ref
+5Vd
+15V in
AGND
-15V in
971-3
RE INSTRUMENTS A/S
RE605/6 AM/FM/FMX STEREO GENERATOR
Title
FMX COMPRESSOR 901-772
Size
Document Number



971-33

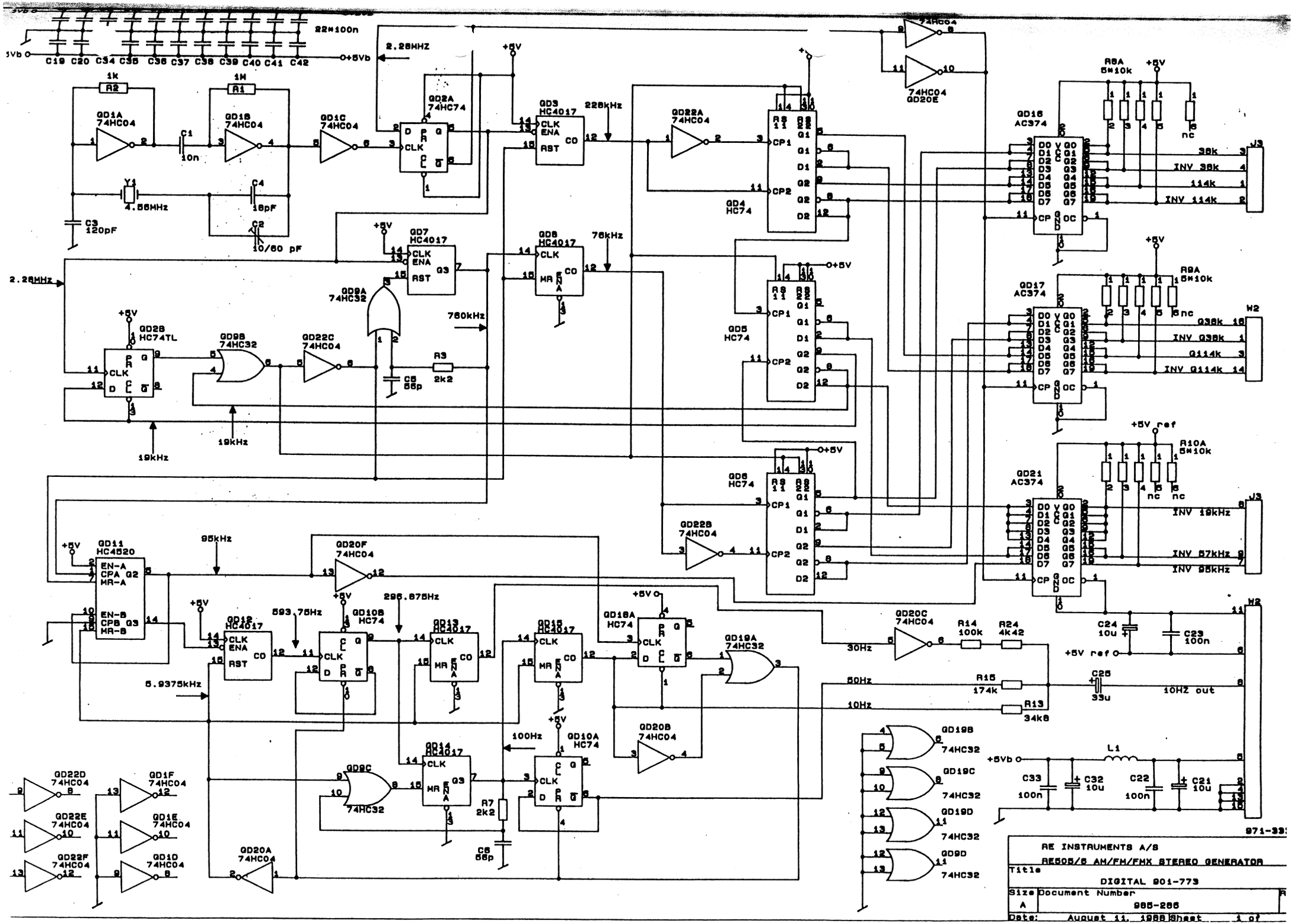
RE INSTRUMENTS A/S

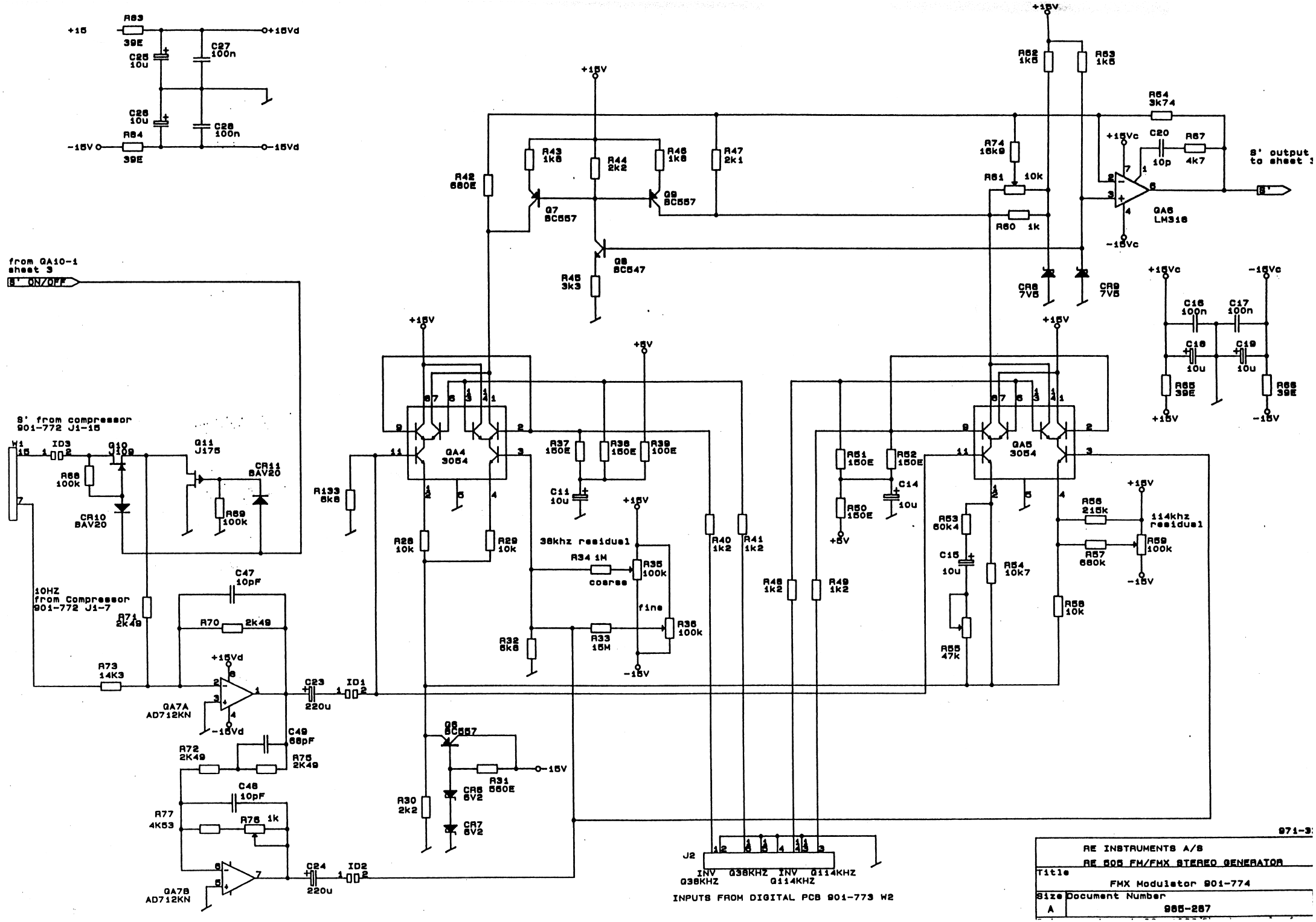
RE505/6 AM/FM/FMX STEREO GENERATOR

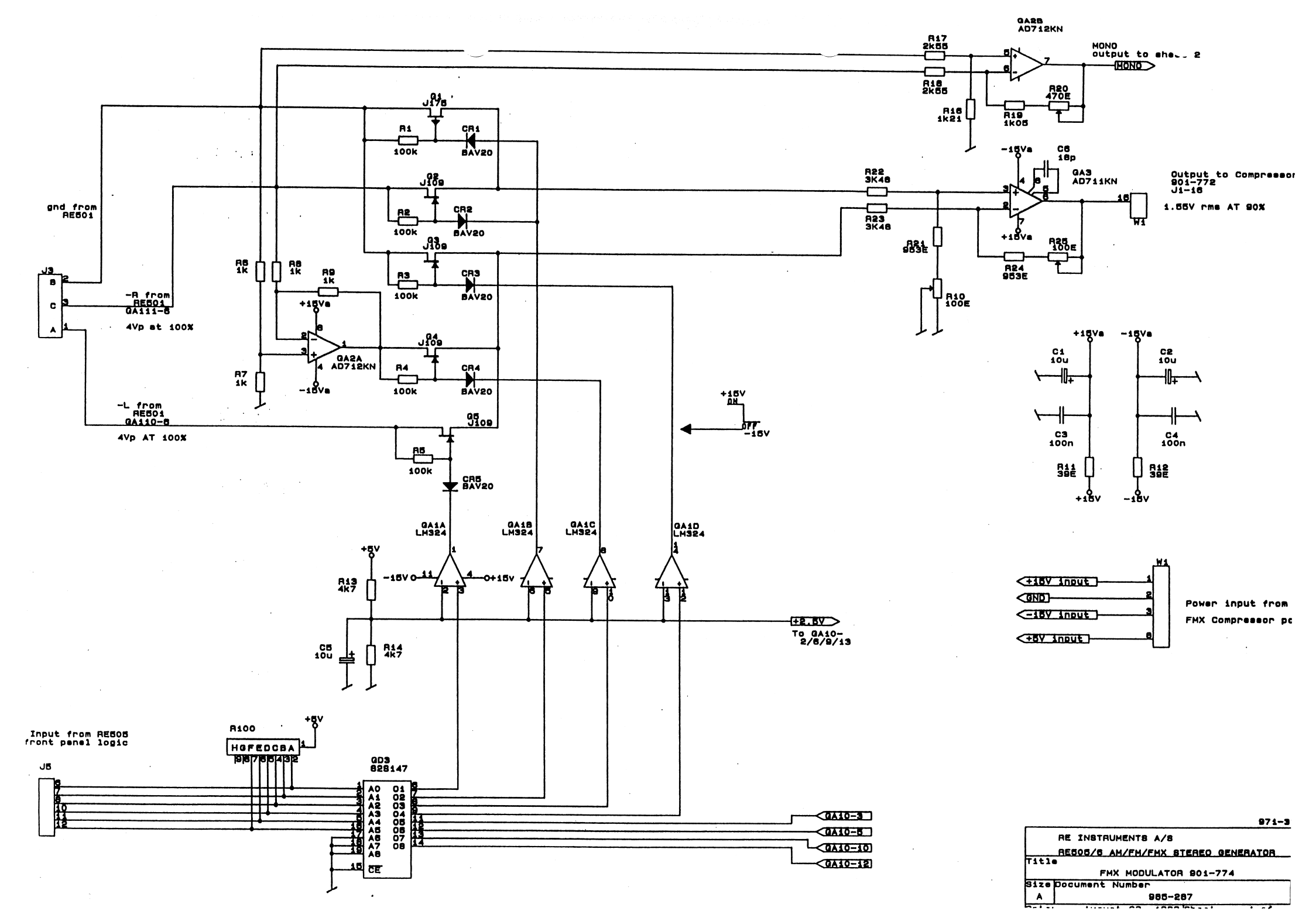
Title

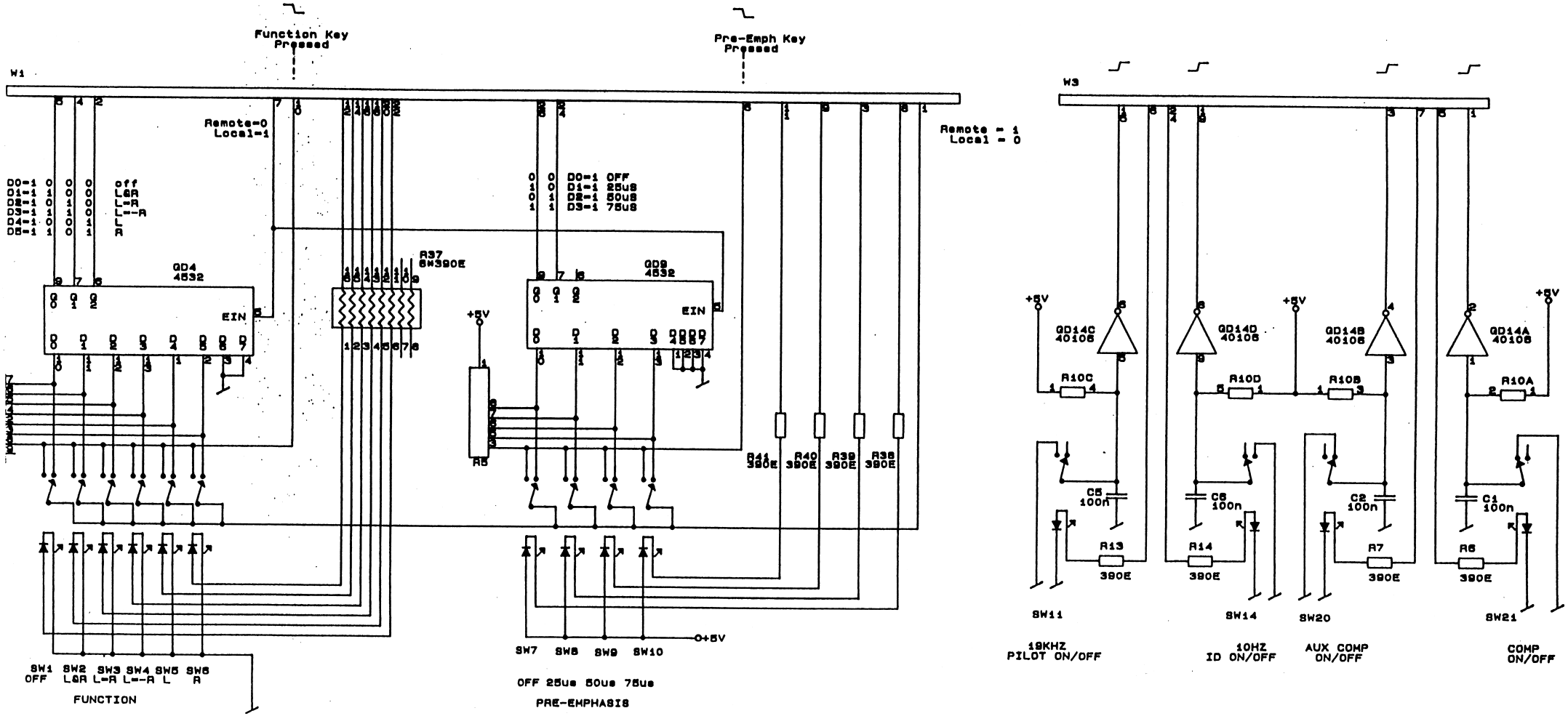
FMX COMPRESSOR 901-772

Size A | Document Number 985-285 | F


22n100n
C19 C20 C34 C35 C36 C37 C38 C39 C40 C41 C42
+5Vb
2.28MHZ
+5V
1k
R2
1M
R1
GD1A 74HC04
GD1B 74HC04
GD1C 74HC04
C1 10n
Y1 4.86MHz
C4 18pF
C3 120pF
C2 10/60 pF
GD2A 74HC74
GD3 HC4017
228kHz
GD22A 74HC04
GD4 HC74
GD7 HC4017
GD8 HC4017
76kHz
GD9A 74HC32
760kHz
GD2B HC74TL
GD9B 74HC32
GD22C 74HC04
R3 2k2
C5 56p
19kHz
GD5 HC74
GD6 HC74
GD22B 74HC04
74HC04 GD20E
R8A 5n10k
GD16 AC374
INV 38k
INV 114k
J3
R9A 5n10k
GD17 AC374
INV Q38k
INV Q114k
W2
+5V ref
R10A 5n10k
GD21 AC374
INV 19kHz
INV 57kHz
INV 95kHz
GD11 HC4520
95kHz
GD20F 74HC04
296.875Hz
593.75Hz
GD12 HC4017
GD10B HC74
GD13 HC4017
GD15 HC4017
GD18A HC74
GD19A 74HC32
GD20B 74HC04
5.9375kHz
GD14 HC4017
GD10A HC74
100Hz
GD9C 74HC32
R7 2k2
C6 56p
GD20A 74HC04
GD20C 74HC04
R14 100k
R24 4k42
30Hz
C24 10u
C23 100n
R15 174k
C25 33u
10HZ out
50Hz
10Hz
R13 34k8
GD19B 74HC32
GD19C 74HC32
GD19D 74HC32
GD9D 74HC32
L1
C33 100n
C32 10u
C22 100n
C21 10u
GD22D 74HC04
GD1F 74HC04
GD22E 74HC04
GD1E 74HC04
GD22F 74HC04
GD1D 74HC04
971-33
RE INSTRUMENTS A/S
RE505/6 AM/FM/FMX STEREO GENERATOR
Title
DIGITAL 901-773
Size A
Document Number 985-286
Date: August 11, 1988 Sheet 1 of


+15
R63
39E
C25
10u
C27
100n
+15Vd
C26
10u
C28
100n
R64
39E
-15V
-15Vd
+15V
R62
1k5
R63
1k5
R54
3k74
R74
15k9
R61
10k
R60
1k
R42
680E
R43
1k8
R44
2k2
R46
1k8
R47
2k1
Q7
BC557
Q9
BC557
Q8
BC547
R45
3k3
+15Vc
C20
10p
R67
4k7
QA6
LM318
-15Vc
S' output
to sheet 3
CR8
7V5
CR9
7V5
C16
100n
C17
100n
C18
10u
C19
10u
R65
39E
R66
39E
from QA10-1
sheet 3
S' ON/OFF
S' from compressor
901-772 J1-15
H1
15
ID3
Q10
J109
Q11
J175
CR11
BAV20
R68
100k
CR10
BAV20
R69
100k
10HZ
from Compressor
901-772 J1-7
R71
2k49
C47
10pF
R70
2k49
R73
14K3
+15Vd
QA7A
AD712KN
-15Vd
C23
220u
ID1
C49
68pF
R72
2K49
R75
2K49
C48
10pF
R77
4K53
R76
1k
QA7B
AD712KN
C24
220u
ID2
+5V
QA4
3054
R133
6k8
R37
150E
R38
150E
R39
100E
C11
10u
R28
10k
R29
10k
38khz residual
R34 1M
coarse
R35
100k
fine
R36
100k
R32
6k8
R33
15M
R40
1k2
R41
1k2
Q6
BC557
R31
560E
R30
2k2
CR6
6V2
CR7
6V2
R51
150E
R52
150E
C14
10u
R50
150E
QA5
3054
R56
215k
114khz
residual
R53
60k4
R57
680k
R59
100k
C15
10u
R54
10k7
R55
47k
R58
10k
R48
1k2
R49
1k2
J2
INV
038KHZ
038KHZ
INV
0114KHZ
0114KHZ
INPUTS FROM DIGITAL PCB 901-773 W2
971-3
RE INSTRUMENTS A/S
RE 606 FM/FMX STEREO GENERATOR
Title
FMX Modulator 901-774
Size
A
Document Number
965-267


GA2B
AD712KN
R17
2k55
R18
2k55
MONO
output to sheet 2
MONO
R16
1k21
R19
1k05
R20
470E
-15Va
C6
18p
GA3
AD711KN
Output to Compressor
901-772
J1-16
1.55V rms AT 90%
W1
R22
3K48
R23
3K48
R21
953E
R24
953E
R25
100E
+15Va
R10
100E
gnd from
RE501
J3
-R from
RE501
GA111-6
4Vp at 100%
-L from
RE501
GA110-6
4Vp AT 100%
Q1
J175
Q2
J109
Q3
J109
Q4
J109
Q5
J109
R1
100k
R2
100k
R3
100k
R4
100k
R5
100k
CR1
BAV20
CR2
BAV20
CR3
BAV20
CR4
BAV20
CR5
BAV20
R6
1k
R8
1k
R9
1k
R7
1k
GA2A
AD712KN
+15Va
-15Va
+15V
ON
OFF
-15V
C1
10u
C2
10u
C3
100n
C4
100n
R11
39E
R12
39E
+15V
-15V
GA1A
LM324
GA1B
LM324
GA1C
LM324
GA1D
LM324
+5V
R13
4k7
R14
4k7
C5
10u
+2.5V
To GA10-
2/6/9/13
W1
+15V input
GND
-15V input
+5V input
Power input from
FMX Compressor pc
Input from RE505
front panel logic
J5
R100
HGFEDCBA
GD3
828147
A0
A1
A2
A3
A4
A5
A6
A7
A8
CE
O1
O2
O3
O4
O5
O6
O7
O8
GA10-3
GA10-5
GA10-10
GA10-12
971-3
RE INSTRUMENTS A/S
RE505/6 AM/FM/FMX STEREO GENERATOR
Title
FMX MODULATOR 901-774
Size
A
Document Number
965-287



971-376

RE INSTRUMENT A/S	
RE605/6 AM/FM/FMX STEREO GENERATOR	
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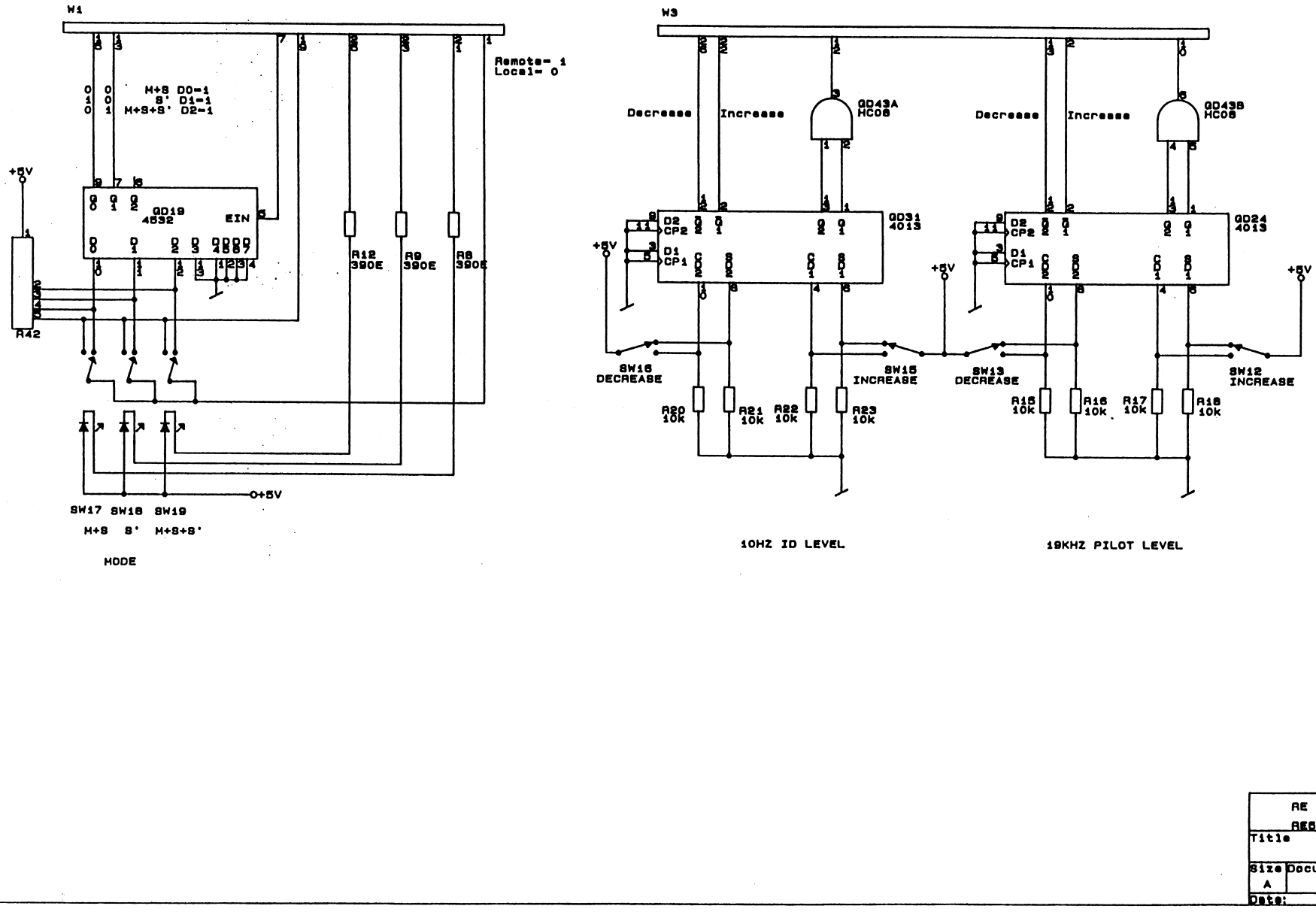
Size: A	Document Number: 985-266
Date: August 11, 1988	Sheet 1 of



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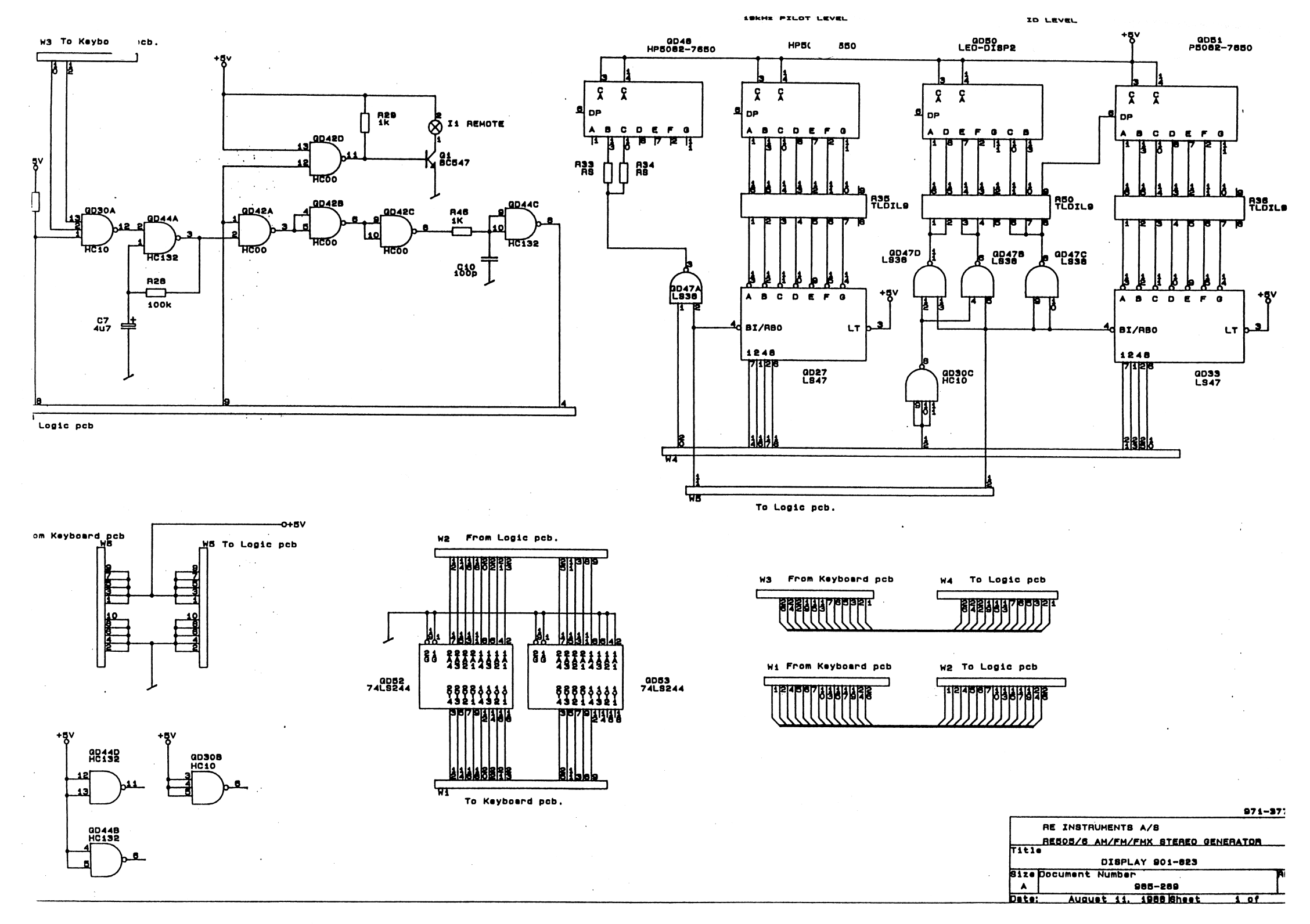
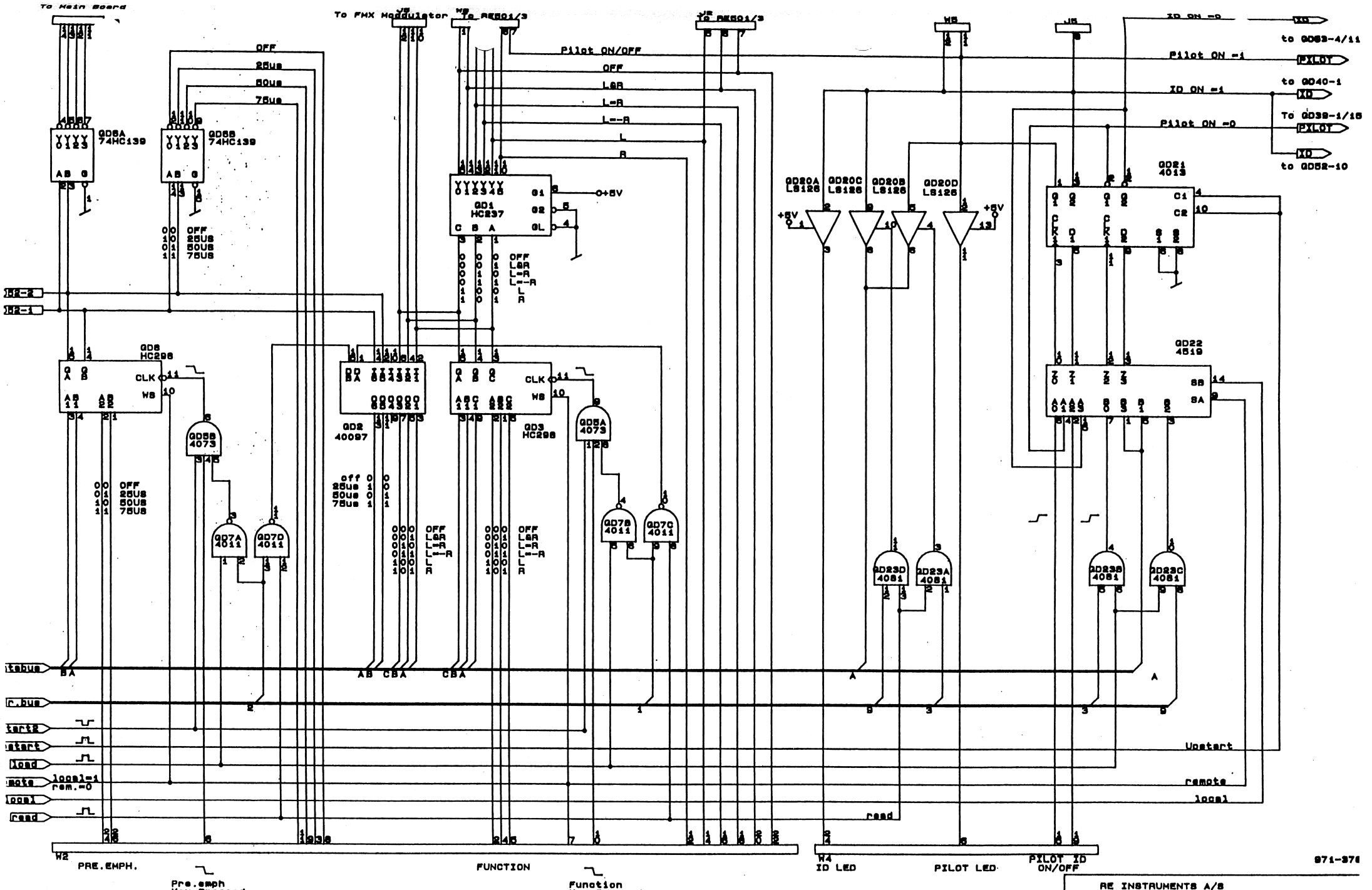
	RE605/6 AM/FM/FMX STEREO GENERATOR	
Title	KEYBOARD 901-822	
Size A	Document Number 985-268	RE
Date: August 11, 1988	Sheet 8 of	



971-377

RE INSTRUMENTS A/S	
RE605/6 AM/FM/FMX STEREO GENERATOR	
Title	DISPLAY 901-823
Size A	Document Number 985-269
Date: August 11, 1988	Sheet 1 of



RE INSTRUMENTS A/S

RE805/6 AM/FM/FMX STEREO GENERATOR

Title: FRONT PANEL LOGIC 801-824

Size	Document Number	R
A	965-290	

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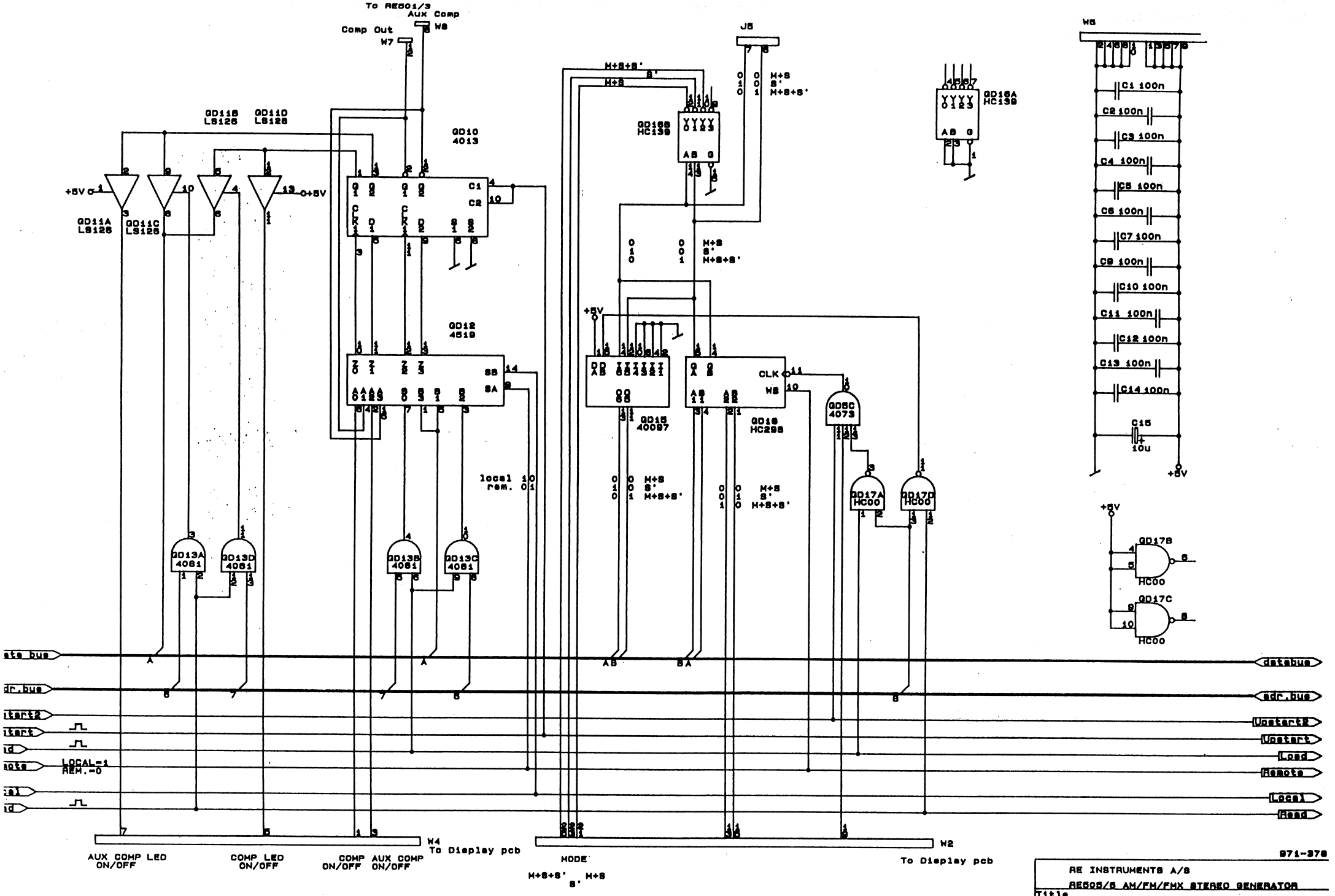

971-278

RE INSTRUMENTS A/S

RE505/6 AM/FM/FMX STEREO GENERATOR

Title

FRONT PANEL LOGIC 901-824

Size	Document Number	RE
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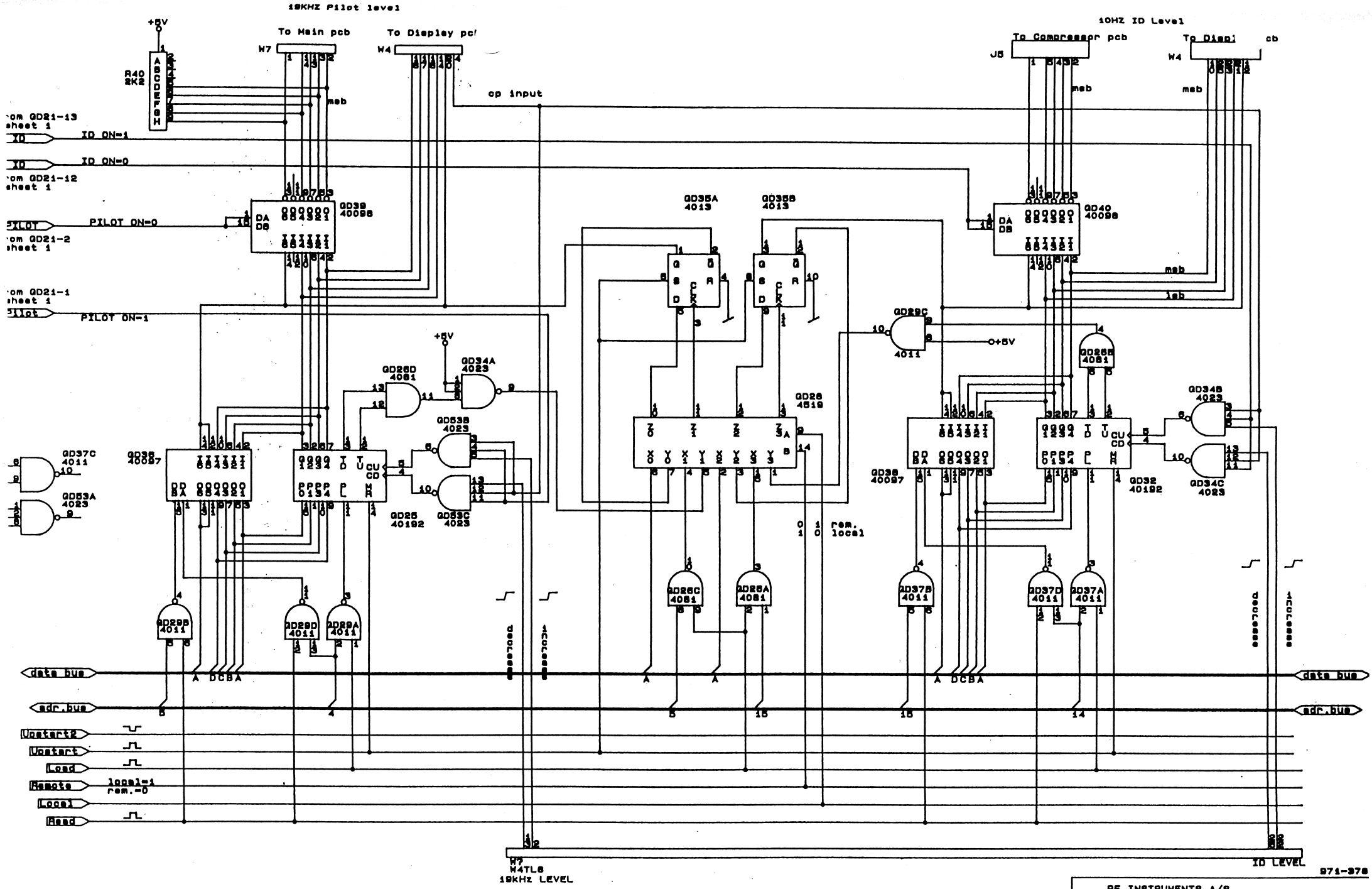

RE INSTRUMENTS A/S	
RE505/6 AM/FM/FMX STEREO GENERATOR	
Title	FRONT PANEL LOGIC 901-624
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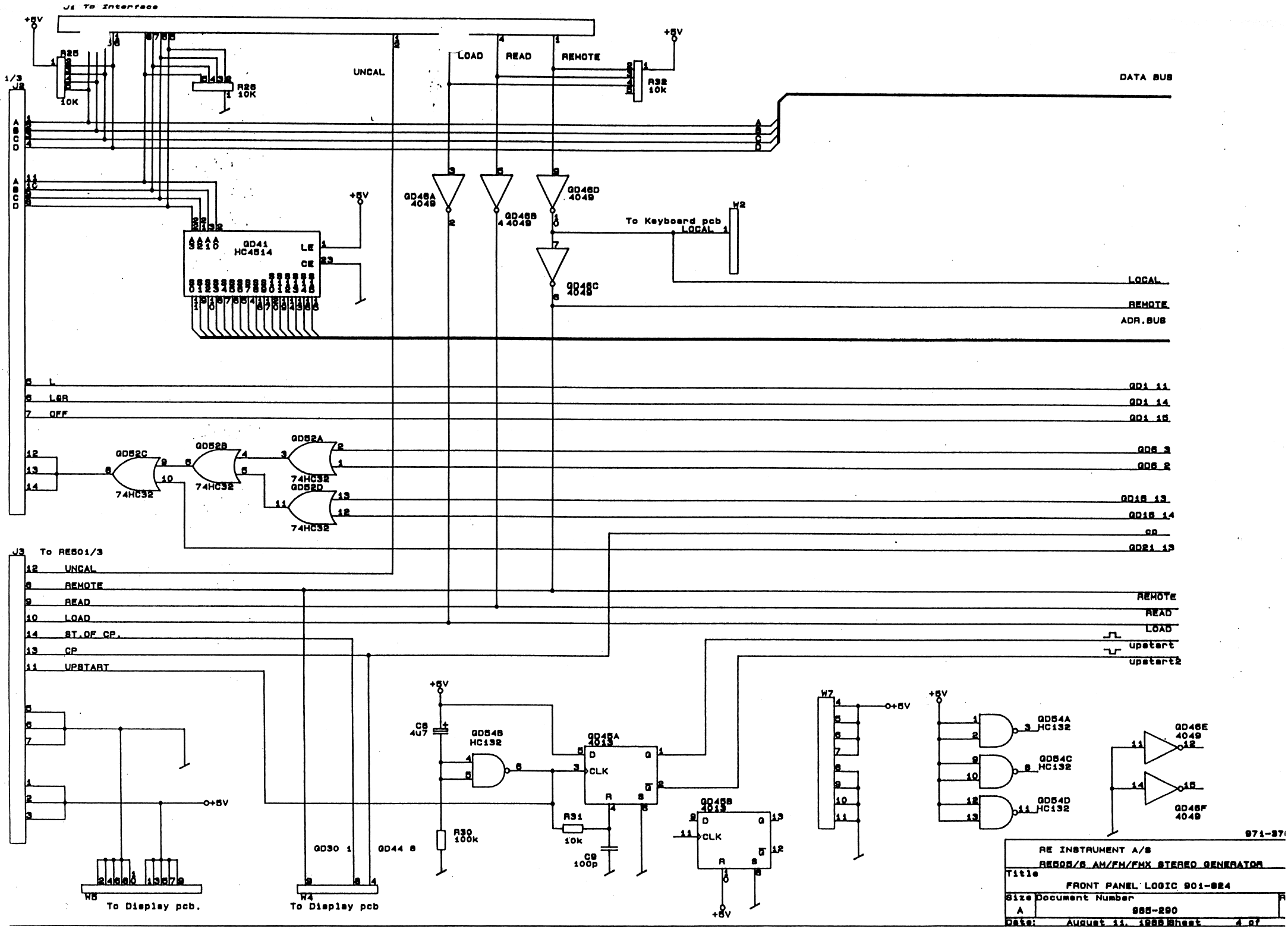
J1 To Interface
+5V
R25
10K
R28
10K
UNCAL
LOAD
READ
REMOTE
R32
10K
DATA BUS
1/3 J2
A
B
C
D
GD41
HC4514
LE
CE
GD46A
4049
GD46B
4049
GD46D
4049
GD46C
4049
To Keyboard pcb
LOCAL
H2
LOCAL
REMOTE
ADR.BUS
L
LOR
OFF
GD1 11
GD1 14
GD1 15
GD52C
GD52B
GD52A
GD52D
74HC32
GD6 3
GD6 2
GD16 13
GD16 14
CP
GD21 13
J3 To RE501/3
UNCAL
REMOTE
READ
LOAD
ST.OF CP.
CP
UPSTART
REMOTE
READ
LOAD
upstart
upstart2
C8
4U7
GD54B
HC132
GD45A
4013
D
CLK
R
S
Q
R31
10k
C9
100p
R30
100k
GD45B
4013
H7
GD54A
HC132
GD54C
HC132
GD54D
HC132
GD46E
4049
GD46F
4049
W5
To Display pcb.
GD30 1
GD44 8
W4
To Display pcb
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RE505/6 AM/FM/FMX STEREO GENERATOR
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