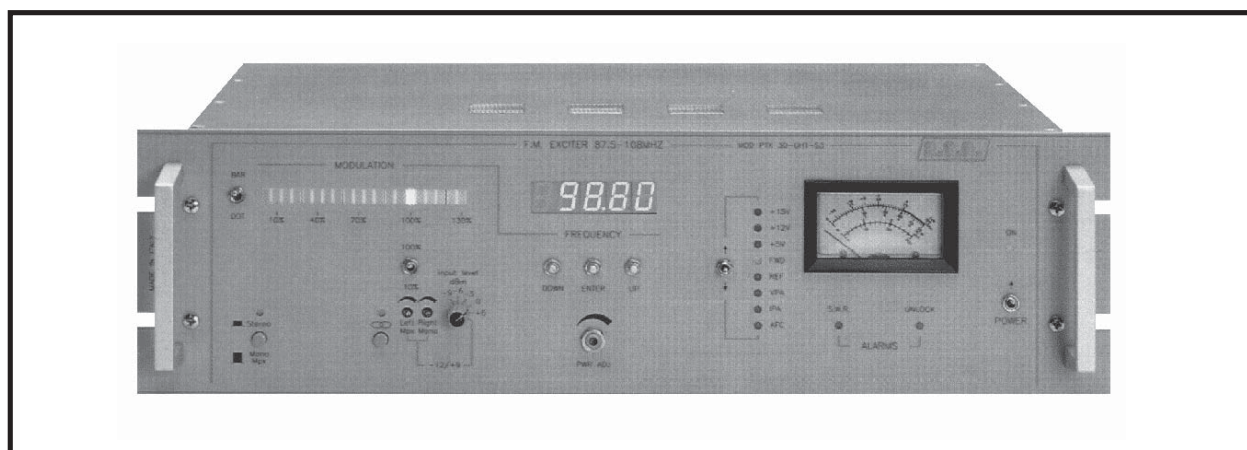

PTX30 UHT /S3



User Manual

Manufactured by  Italy



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PTX30 UHT /S3 - User Manual
Version 5.0

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**Notification of intended purpose and limitations of product use**

This product is a FM transmitter intended for FM audio broadcasting. It utilises operating frequencies not harmonised in the intended countries of use.

The user must obtain a license before using the product in intended country of use. Ensure respective country licensing requirements are complied with.

Limitations of use can apply in respect of operating frequency, transmitter power and/or channel spacing.

Declaration of Conformity

Hereby, R.V.R. Elettronica SpA, declares that this FM transmitter is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.



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1. Preliminary Instructions

This manual is designed to provide a general guide to skilled and qualified personnel, who are aware of the dangers that may arise when handling electric and electronic circuits.

It does not aim to provide a complete description of all the safety precautions that must be observed by people who use this or similar equipment.

The installation, operation, maintenance and use of this piece of equipment involve risks both for people and the equipment itself, which must be handled only by experienced technicians.

R.V.R. Elettronica SpA does not assume responsibility for injuries to persons or damage to items caused by improper use or incorrect usage procedures, whether the users are experienced or not.

Users should observe local regulations and fire-prevention rules while installing and using this equipment.



WARNING: always disconnect the power before opening covers or removing any part of the equipment.

Take appropriate earthing measures to discharge the condensers and high voltage points before doing any maintenance work.



WARNING: this equipment may radiate radio-frequency energy, and if it is not installed according to the instructions, may cause troublesome interference to radio communications.

Operating this equipment in a residential environment may give rise to radio disturbance; if so, the user may be asked to take appropriate counter measures.

R.V.R. Elettronica SpA reserves the right to make modifications to the design and technical specifications of the equipment, and to update this manual without notice.

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2. Warranty

The guarantee, which is for 12 (twelve) months, is valid for any R.V.R. Elettronica product.

On components such as tubes for final amplifiers, the manufacturer's guarantee applies.

R.V.R. Elettronica extends all transferable original guarantees to its own products. To ensure that servicing is carried out properly and as fast as possible, the work shall be handled by R.V.R. Elettronica; any claims should be sent directly to R.V.R. Elettronica, in accordance with the defined procedures.

The warranty does not include:

- 1 damage while the equipment is being shipped to R.V.R. for repairs;
- 2 any unauthorized modification or repair;
- 3 accidental damage, or damage not due to defects in the equipment;
- 4 nominal damage not accidental;
- 5 shipping the equipment and insuring it, and replacement of parts or units.

Any damage to the equipment caused during shipment must be reported to the transporters and notified in writing on the forwarding receipt.

Any difference or damage discovered after delivery must be reported to R.V.R. Elettronica within 5 (five) days from the delivery date.

To take advantage of the guarantee, adopt the following procedure:

- 1 Contact the retailer or dealer where you bought the equipment; describe the problem or fault to check if there is a simple solution.

Retailers and Distributors can provide full information on the problems that occur most frequently; they can normally repair the equipment much faster than the manufacturer

- 2 If your dealer cannot help you, contact R.V.R. Elettronica and describe the problem to them; if necessary, you will be sent authorization with the necessary instructions;
- 3 When you have received authorisation, return the equipment carriage paid to the address specified.

Pack it carefully, if possible in the original packing, and seal the package.



Do not return the machine without prior authorization, otherwise it may be returned to you

- 4 Quote the machine's type, model and serial number; attach a written technical diagnosis listing all the problems and faults encountered, and enclose a copy of the invoice.

Replacement of parts under guarantee or spare parts can be ordered from the following address:



R.V.R. Elettronica SpA
Via del Fonditore, 2/2c
40138 BOLOGNA
ITALY
Tel. +39 051 6010506

quoting type, model and serial number of the device.

3. First Aid

Personnel involved in the installation, use, and maintenance of the equipment must be familiar with the theory and practice of first aid.

3.1 Treating electric shocks

3.1.1 If the victim is unconscious

Follow the first aid principles described below.

- Lay the victim down on his back on a rigid surface
- Free the respiratory tracts by raising the neck and pushing the forehead back (Figure 1).
- If necessary, check the breathing of the victim opening his mouth.
- If the victim is not breathing, start artificial respiration immediately (Figure 2): incline the head, close the nostrils, apply your mouth to the victim's and make four fast respirations.

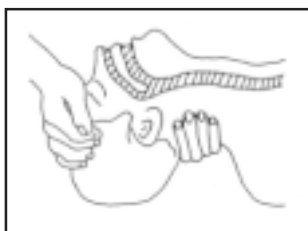


Figure 1



Figure 2

- Check the heart beat (Figure 3); if there is none, start a cardiac massage immediately (Figure 4) pressing the sternum approximately at the centre of the chest (Figure 5).



Figure 3



Figure 4

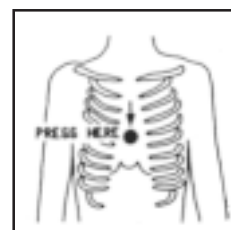


Figure 5

- If there is just one person providing first aid, he must adopt a rhythm of 15 compressions and 2 fast respirations alternately.
- If there are two persons, the rhythm must be 1 respiration and 5 compressions alternately

- Do not interrupt the cardiac massage during the artificial respiration.
- Call a doctor as soon as possible

3.1.2 If the victim is conscious

- Cover the victim with a blanket
- Keep him calm.
- Loosen the victim's clothes and keep him lying down
- Call a doctor as soon as possible

3.2 Treating electric burns

3.2.1 Large-scale burns and serious cuts

- Cover the area concerned with a sheet or a clean cloth.
- Do not break the blisters; remove any fabric and parts of clothing that may be attached to the skin; apply a suitable ointment.
- Treat the victim depending on the type of accident.
- Take the victim to hospital as soon as possible.
- If the arms and legs are injured, keep them raised.

If no medical help is available within an hour and the victim is conscious and has not retched, administer a liquid solution of salt and bicarbonate of soda: 1 teaspoonful of salt to every 250ml of water.

Get the victim to slowly drink half a glass of the solution, four times, over a period of 15 minutes.

Stop the treatment if the victim starts to retch.



Do not administer alcoholics!

3.2.2 Less serious burns

- Apply cold gauze compresses (not iced) using a clean cloth (i.e. as clean as possible).
- Do not break any blisters; remove any fabric and parts of clothing that may be attached to the skin; apply a suitable ointment.
- If necessary, dress the victim in clean dry clothes.
- Treat the victim depending on the type of accident.
- Take the victim to hospital as soon as possible.
- If the arms and legs are injured, keep them raised.

4. General Description

The PTX30 is contained in a 19" 3U rack, internally assembled with modules mounted on a main chassis, all interconnected with connectors, allowing easy servicing and replacement.

On the front panel there are the controls for output power and audio input level and meters for the main parameters.

On the rear panel, there are the mains inlet, the audio inputs, the RF output connector and the serial control port.

The PTX30 is a frequency-agile exciter ranging from 87.5 to 108MHz in 10 KHz steps with a continuously adjustable output power from 2 to 30 Watt with a 50 Ohm load.

The PTX30-UHT-S3 incorporates a stereo coder with an excellent stereo separation and a low level of harmonic distortion, and provides the input for two SCA (RDS) signals.

A front switch allows operation in "STEREO" OR "MONO/MPX"; in the latter, the coder is excluded and the "RIGHT" input is used as a "MONO" input, the "LEFT" input as a "WIDEBAND COMPOSITE INPUT".

The low intermodulation and distortion values (typ. 0.03%) and the high signal to noise ratio (typ. 80 dB) are the main features of this coder.

A mains voltage selector, permits use with various mains voltages.

The most important parameters of the exciter can be checked with the analog meter and the bar graph display present on the front panel.

The analog measures are selectable with the appropriate switch and are identified by the led indicator.

The bar graph display, reads the peak deviation in 5 KHz steps

The 5 digit central display reads the working frequency which is selectable by the UP and DOWN switches, and memorized with ENTER.

Two alarm LEDs warn for PLL unlock and excessive output SWR.

The output frequency stability is guaranteed by a PLL (phase locked loop) circuit with a temperature compensated crystal oscillator.

The PTX30 reaches the frequency lock condition in a maximum time of 30 seconds from the power on.

These circuits provide the automatic output power control, maintaining a flat power output response over the entire frequency range and the protection of the output stage against an excess of SWR and/or a short circuit on the feeder or the antenna.

The RF final amplifier is broadband and guarantees an output level between 2 and 30 Watt over the entire frequency range.

An output low pass filter allows the PTX30 to be used as a low power transmitter connected directly to an antenna.

5. Quick Start

This chapter gives a concise view of the points that are necessary for the installation of the device. If any item is not completely clear, for example when you use the exciter for the first time, we strongly suggest to read throughly the manual.

5.1 Preparation

Unpack the transmitter and before any other operation check the unit for any shipping damage and check that all the controls and connectors on the front and rear panels are in good conditions.

Check the mains voltage selector on the rear panel: the selected value is indicated by an arrow. If required, extract the selector block levering with a little screwdriver (Fig. 5.1). Rotate the block until the correct printed value corresponds with the arrow, then reinsert it.

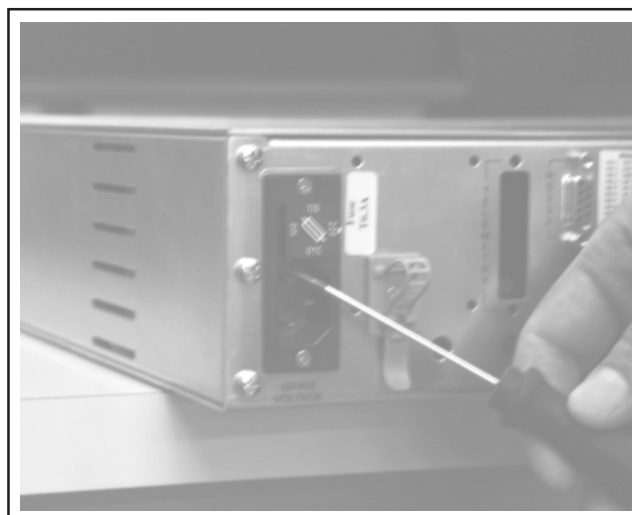


Figura 5.1

If it has been necessary to change voltage, check the fuse value. The required values are the following:

PTX30 UHT /S3	220-240 Volt - 3,16 A
	110-120 Volt - 4,00 A

Now, with a small screwdriver, check that the potentiometer "PWR ADJUST" is rotated completely counter clockwise (N.B. The pot has ten turns, so be careful to set it at the minimum setting).

Usually this setting is performed at the factory.



NOTE: With this setting when the exciter is switched on, the output power is about 2 Watt.

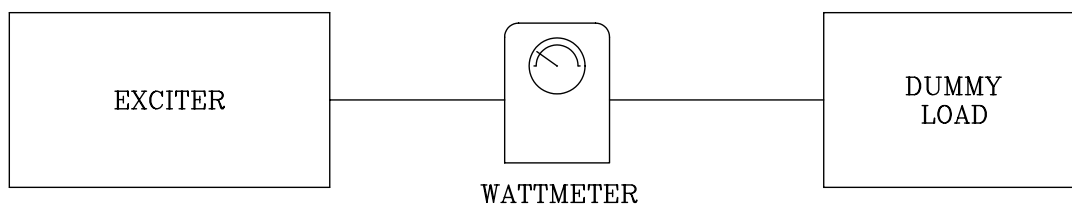


figure 5.1

Connect a dummy load with a continuous power dissipation of 30 W or more to the R.F. OUT connector on the rear panel. It's preferable to connect also a through wattmeter, to check the reading of the internal wattmeter (see figure 5.1).

Connect to the rear input "REMOTE" a cable with a switch between shield and inner conductor and close the switch. Place the power switch in OFF position.

Insert the mains cable in the VDE socket.



NOTE: It's necessary that the power supply has an earth connection, for the safety of the operator and for the correct performance of the exciter.

5.2 Operation

Switch the power "ON" and check that the green "ON" indicator lights, check also the red "UNLOCK" indicator and the green indicator relative to the internal parameters "PWR FWD".

After some seconds, the central display will light and will indicate a figure (98.00) corresponding to the last used frequency. In about 30 seconds the red "UNLOCK" led will go out indicating that the oscillator is correctly locked.

The display is composed of 5 digit; at the right of the decimal point there are two digits, the first indicates the hundreds of KHz and the latter the tens of KHz. At the left of the decimal point we have 2 or 3 digits that show the tens of MHz, the MHz and the hundreds of MHz (when necessary).

E.G. 98.45 Ninety-eight MHz and four hundred fifty KHz.

E.G. 103.94 One hundred and three MHz, nine hundred fourth KHz.

To change these values push the "UP" or "DOWN" switches until you reach the new frequency, than confirm the new value (e.g. 103.45) pushing the ENTER switch.

The "UNLOCK" led will light confirming that the VCO is reaching the new frequency; if the "ENTER" switch isn't pushed, the display will blink four times and will come back to the old frequency.



NOTE: During this procedure and before you push "ENTER" the exciter continues to work on the old frequency.

Note that if you push the UP and DOWN switches momentarily, you move the last digit one step each time, if you keep the switch pushed the digits change continuously.

When the display reaches one extreme of the frequency it range jumps automatically to the opposite extreme.

E.G.: 108.00—87.5—87.51
87.50—108—107.99

After about 1.5 minutes from the “LOCK” condition, the display is switched off; push “ENTER” to switch it on again.

After the “LOCK” condition is verified, (“UNLOCK” indicator off) open the switch previously connected to the “REMOTE” input, enabling the RF output, you should read 3 Watt of output power.

To make this reading, check that the “PWR/FWD” led is on, if not use the measure selection switch and read the value on the 50W scale (f.s.d.).

With a small screwdriver turn the “PWR ADJ” pot clockwise to obtain a gradual increase of the output power to a maximum of 30 Watt (check this value also on the through wattmeter for a tolerance of +/- 10%).

Leaving the power set at 30 Watt, make a large change of frequency (7 or more MHz).

When the “UNLOCK” indicator comes on the output power drops to 0 and returns to 30W when the new “LOCK” condition occurs.

Automatic power control check

Select a frequency of 87.5 MHz and an output power of 15 Watt.

Moving the frequency in steps of 5 MHz verify that the output power maintains a constant value of 15 Watt.

SWR protection check

For this check set the output power at the minimum value, disconnect the dummy load and position the internal meter on the “PWR REF” reading. The meter should read about 2-3 W.



NOTE: The scale is 10W f.s.d..

Slowly increase the output power until the “SWR” led lights. This should happen with a reading of 6W.

Now, check that increasing the output power, the reflected power does not exceed 12W.

Reconnect the dummy load and verify that the SWR led goes off, the meter indicates 0 reflected power and the forward power is 30W.

Close the switch on the REMOTE input and verify that the output power drops immediately to 0.

Opening the switch, the power will gradually return to the previous value.

Deviation meter check

The maximum input sensitivity of the meter is selected by the "INPUT LEVEL" switch and in the -12/+9 position will depend on the setting of L/mpx and R/mono.

Place the meter f.s.d. selector (4 Fig.1) on 100%.

Connect a low distortion audio signal generator to the inputs "LEFT" and "RIGHT".

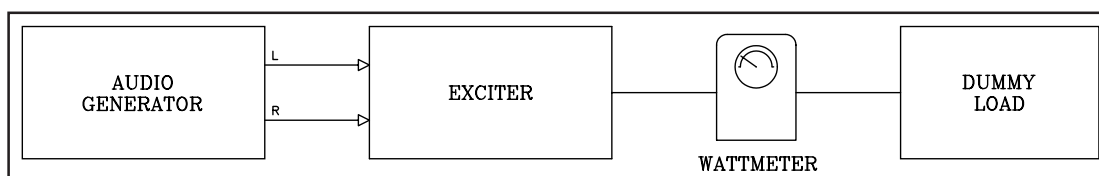


figura 5.2

Inject a 400 Hz tone with 0 dBm amplitude (0.775 VRMS or 2.2 Vpp).

Set the "INPUT LEVEL" control at 0 dBm.

Place the switch in the stereo position (the appropriate indicator will light).

Set the "PILOT" switch on (the indicator will light).

With the selector allow the "R/MONO" led to light and verify the 0 dB reading on the +3 dB f.s.d. scale.

Repeat the operation for the "L/MPX" led.

Check the indication of the bar graph led; it should be indicate 100% (first red led lit).

Depending on the "DOT/BAR" switch position, you will see just the red led on (DOT) or all the green LEDs and the first red (BAR).

Now disconnect the signal generator and placing the selector on 10%, verify that on the bar-led indicator, the first red led is on.

This 10% level is caused by the 19KHz internal stereo coder's pilot tone.

Switch off the "PILOT TONE" and all the LEDs will go off.

Operating with internal stereo coder

Insert the pilot tone confirmed by the corresponding led, than insert the Stereo function confirmed by the corresponding led.

Select LEFT/RIGHT audio input sensitivity with regard to the level supplied from the source used and onnect the source to the "LEFT/RIGHT" inputs (these inputs are balanced).

Verify on the meter that the L/R audio levels are those foreseen selecting the desired input with the control.

It is possible to read the rear modulation level on the deviation meter.

External stereo source connection

Connect the output of the stereo source to the MPX input, see figure 5.3.

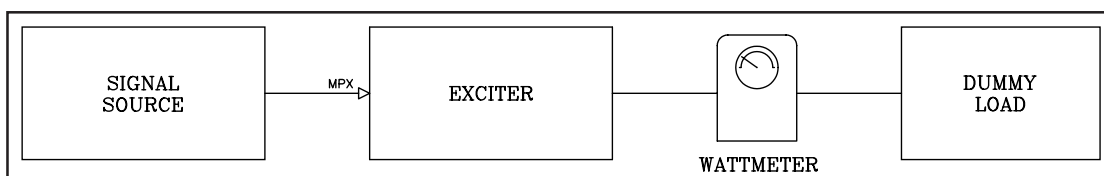


figura 5.3

Position on 10%. Allow the stereo coder to generate only the 19 Khz sub-carrier (No signals on the right and left inputs of the coder).



NOTE: Now the deviation meter has a "x 10" sensitivity, so 10KHz=1KHz and so on.

Set the output level of the coder to obtain the correct injection level, verifiable with the bar graph indicator.

Now position on 100%. Connect the audio signals to the inputs of the coder and set the levels to switch (with both channels active) the first red led on MAX. PEAK=75KHz.

Monaural (MONO) operation

Connect the signal source (mixer,receiver compressor) to the Mono input, see figure 5.4. This input is balanced.

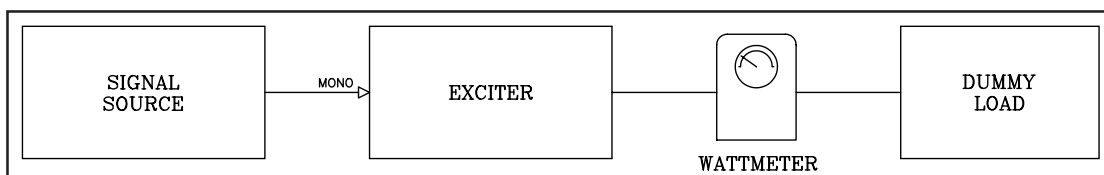


figure 5.4

Place the INPUT LEVEL command at the desired level. Position on 100%.

Set the output level of the device connected to PTX30-UHT-S3 to just switch on the first red led of the bar graph (with a variable amplitude signal as a music). This indicates a Max. Peak Deviation of 75KHz.

We remind you that the international standards set the maximum deviation admitted for a broadcast transmission at 75KHz. Exceeding this value brings will increase of the distortion of the output.

In a mono transmission, the stereo input is always available for signals with a frequency range of 15 to 100KHz, like SCA sub-carriers, RADIO DATA etc..

6 External Description

This chapter describes the elements of the front and rear panels of the PTX30 UHT /S3.

6.1 Front Panel

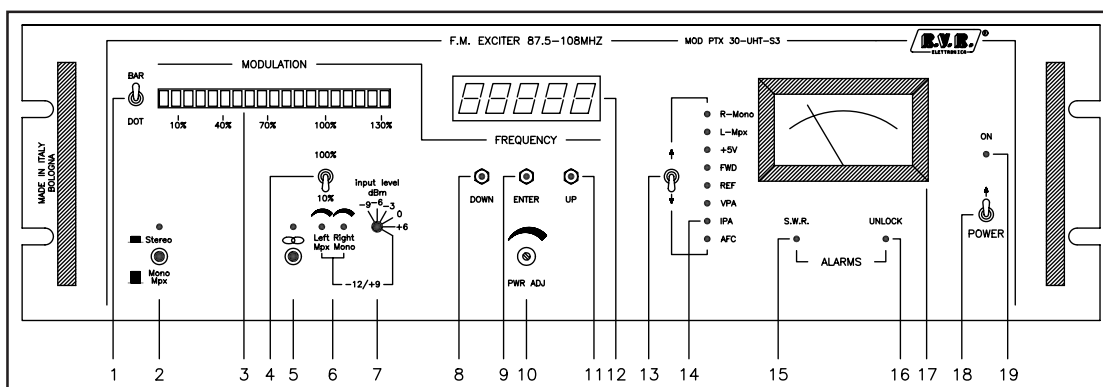


Figure 6.1

- | | |
|----------------------------|--|
| [1] BAR/DOT | Selector of operation mode (BAT/DOT) for modulation meter. |
| [2] STEREO/MONO-MPX | Selector for "STEREO" operation or "MONO/MPX". |
| [3] MODULATION | Modulation meter by "LED BAR". |
| [4] 10%-100% | Expansion of modulation meter scale
Pos. 10% - Full scale shows 10%
Pos. 100% - Full scale shows 100% |
| [5] MODE SELECTOR | Pushed button: "STEREO MODE OPER."
Pushed button: "MONO MODE OPER." |
| [6] L-MPX/R-MONO IN. LEVEL | Continuously adjustable input level from -12 to +9 dBm. |
| [7] INPUT LEVEL | Input attenuator in five steps from -9 to +6dBm. |
| [8] DOWN | Control frequency display. A momentary push causes the digit to go down 10KHz at a time. |
| [9] ENTER | Enters the frequency on the display into the microprocessor and memory. Once entered, the frequency is stored until a panel, even if the power is turned off for several days. |
| [10] PWR ADJ | A ten turn control which controls the power output of exciter. Once set the power remains at that level due to AGC action. |
| [11] UP | Controls the display frequency in the same way as the "DOWN" button except that the frequency goes up in 10 KHz steps. |
| [12] FREQUENCY DISPLAY | Frequency indicator. |
| [13] METER SWITCH | Pushing the switch each time will light one led at a time in an upward direction. |
| [14] LEDS | Light indicator indicating which parameter of the exciter is being displayed on the analog meter. |
| [15] SWR ALARM | If this indicator lights, it means that the exciter has shut down due to a high VSWR condition on the output. |
| [16] UNLOCK | This indicator will light when the VCO is not locked to the reference frequency. Power output will also decrease to zero in this condition. |

[17] METER

Analog meter used to monitor the parameters of the exciter
such as:

Direct power
Reflected power
Deviation power
Right Input level
Left MPX input level
AFC

UP

IA

[18] POWER

On/Off power switch

[19] ON

A.C. power "ON" indicator

6.2 Rear panel

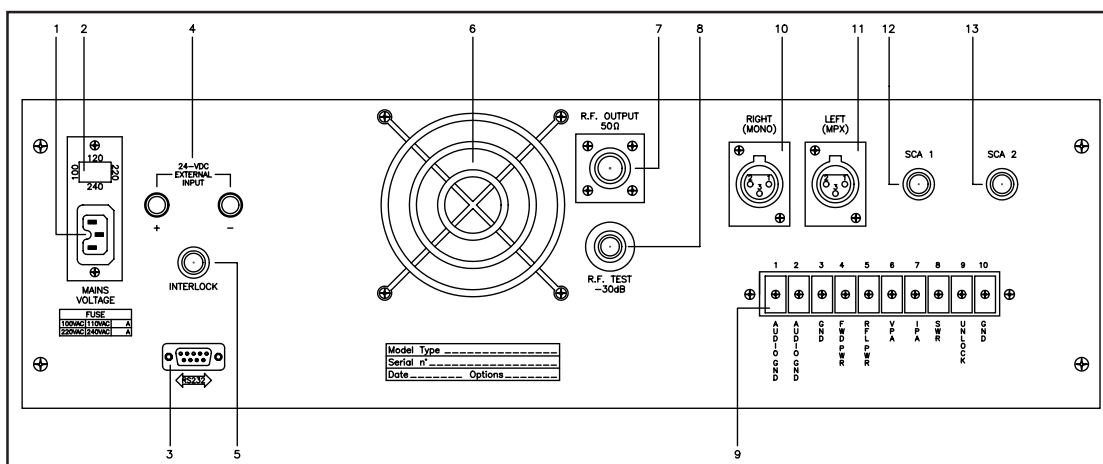


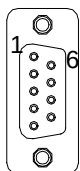
Figura 6.2

- | | |
|---------------------------|---|
| [1] PLUG | A.C. power plug |
| [2] FUSE BLOCK | Fuse block & voltage. Use a small screwdriver to change fuse or voltage setting. turn block and place desired operating voltage next to arrow. |
| [3] RS232C (optional) | RS232C communication line to control or receive status of the exciter.
Baud rate is 1200 Baud.
On request, it may be changed to 300, 600 or 2400 Baud. A program is available on 5 1/4" or 3 1/2" disk for IBM or compatible. |
| [4] 24-VDC EXTERNAL INPUT | Not available. |
| [5] INTERLOCK | BNC connector. Placing a ground on the center pin will cause the R.F. output to go to zero until the ground is removed. When used with an R.V.R. amplifier, this should be connected to the "REMOTE" of the power amplifier. |
| [6] FAN | Cooling fan for P.A. stage and power supply |
| [7] R.F. OUTPUT | "N" connector, 50Ohm R.F. Output |
| [8] R.F. TEST POINT | -30dB with respect to the output level |
| [9] TELEMETRY TERMINALS | 10 pin terminals board for telemetry |
| [10] RIGHT (MONO) | FCC version BNC connector isolated, CCIR version "cannon XLR" connector balanced input. |
| [11] LEFT (MPX) | FCC version BNC connector isolated, CCIR version "cannon XLR" connector balanced input. |
| [12] SCA 1 | BNC connector, unbalanced SCA1 input. |
| [13] SCA 2 | BNC connector, unbalanced SCA2 input. |

6.3 Connectors description

6.3.1 RS 232

Tipo: DB9 female



- | | |
|---|------|
| 1 | NC |
| 2 | TX_D |
| 3 | RX_D |
| 4 | DSR |
| 5 | GND |
| 6 | DTR |
| 7 | CTS |
| 8 | RTS |
| 9 | NC |

6.3.2 Left (MONO) / Right (MPX Bal)

Type: XLR female



- | | |
|---|--------------------|
| 1 | GND |
| 2 | Signal (+) inphase |
| 3 | Signal (-) return |

7. Technical Specifications

7.1 Mechanical Specifications

Panel size	483 mm (19.0") x 132.5 mm (5.2")
Depth	345.0 mm (13.7")
Weight	13 Kg
Temperature range	-10 °C ÷ 50 °C

7.2 Electrical Specifications

A.C. power supply	100-130 V, 50-60 Hz 198-250 V, 50-60 Hz
Power Consumption	approx 140VA
Cooling system	Forced ventilation
Frequency range	87.5 MHz ÷ 108 MHz, 10KHz steps microprocessor controlled
Output power	continuously adjustable from 2 to 30W
Automatic output level	automatically maintains operator control set RF
Output connector	Standard "N" connector
Output impedance	50 Ohm
Harmonic suppression	> 65 dB
Spurious suppression	> 80 dB
Modulation type	Direct carrier frequency modulation
Composite intermodulation	0.05% or less measured with distortion 1KHz and 1.3KHz tones 1:1 ratio at 100% modulation
Frequency stability	±500Hz (typ. ±300Hz) from 0° to +50°C
Frequency deviation	±75KHz nominal
Harmonic distortion	< 0.10% (0.05 typical)
FM S/N ratio	> 75dB mono, > 70dB stereo (75KHz DEV. - RMS)
Residual AM (asynch)	aprox. 0.05% = 66dB RMS
Residual AM (sync)	0.1% = 60dB
Premphasis	50µs ±2% or 75µs ±selectable
Audio input level	Adjustable on 5 fixed levels or continuous from -12 to +9 dBm
Audio input frequency range	30-15000 Hz mono input 30-10000 Hz mono input
Audio input filter stop band	> 45dB at 19KHz (mono) attenuation
Audio frequency response	± 0.3dB, 30Hz to 15KHz, mono input
Audio frequency response	± 0.5dB, 30Hz to 75KHz input
Stereo separation	> 45dB (50dB typical)
Pilot tone frequency	19KHz ±1Hz
Pilot tone level	-20dBm adjustable
Number SCA input	2 SCA operation 2
SCA input impedance	1KOhm unbalanced
SCA input level	0 dBm for ±7.5KHz deviation
SCA amplitude response	±0.5dBm from 40KHz to 100KHz

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8. Identification and access to the modules

8.1 Modules identification (upper view)

Figure 8.1 shows the upper view of the internal of the exciter. The components are described below.

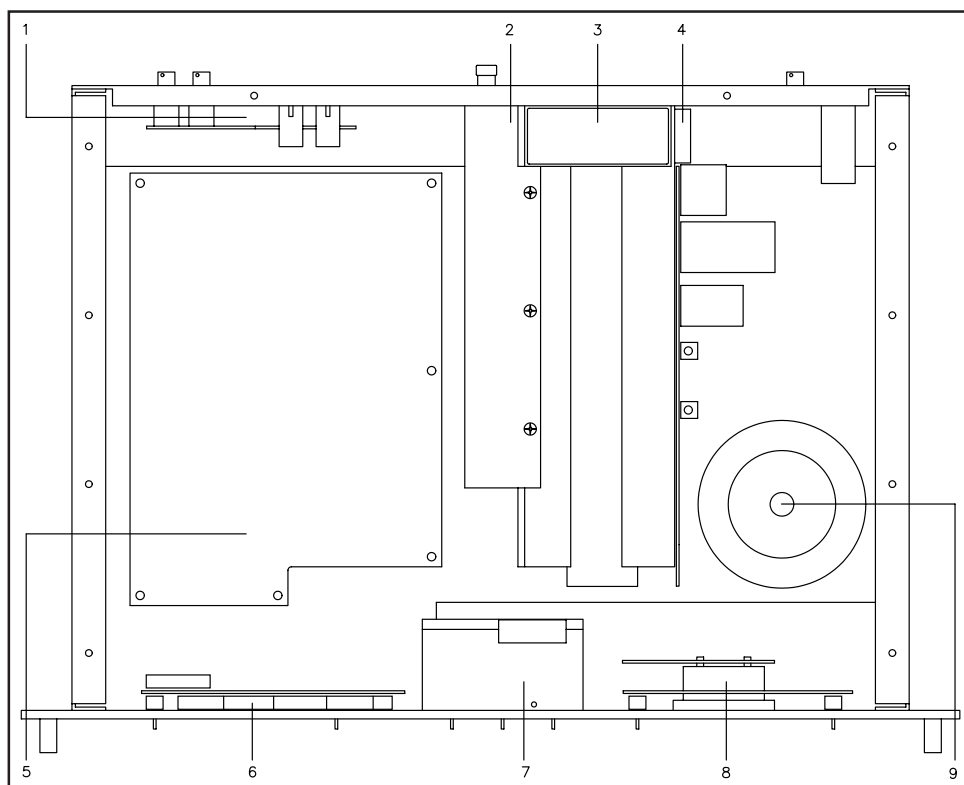


Figure 8.1

- [1] Audio input card
- [2] R.F. power amplifier
- [3] Fan
- [4] Power supply
- [5] Main card
- [6] Modmter card
- [7] C.P.U.
- [8] Anameter card
- [9] Transformer

8.2 Modules identification (bottom view)

Figure 8.2 shows the upper view of the internal of the exciter. The components are described below.

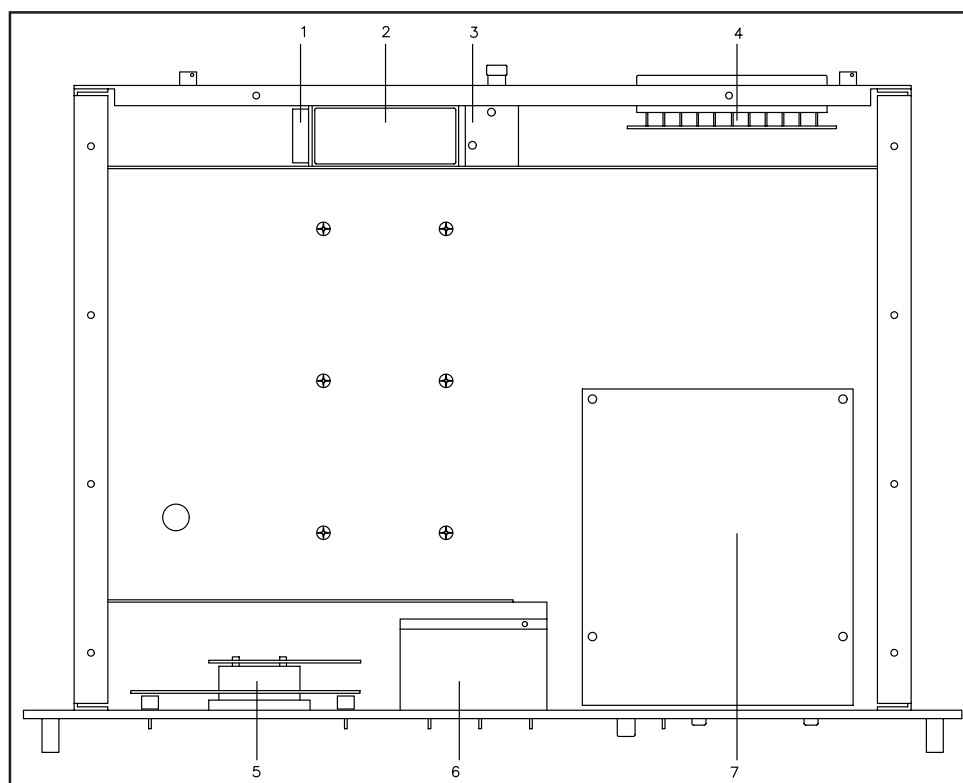


Figure 8.2

- [1] Power supply
- [2] Fan
- [3] R.F. power amplifier
- [4] Audio input card
- [5] Anameter
- [6] C.P.U.
- [7] Stereo card

8.3 Access to the modules



ATTENTION: opening the device, points with dangerous voltages and currents are exposed. Always disconnect the mains supply before removing the covers or taking away any part of the piece of equipment.

Remove all the screws on the upper cover of the exciter. After taking away the cover, identify with the help of figures 8.1 and 8.2, the components of the exciter.

8.3.1 First level maintenance

The only regular maintenance needed by PTX30-UHT-S3, is the periodic replacement of the blowers, and the cleaning of dust filters and any dust accumulated inside the exciter.

The time between overhauling of the blowers depends upon several environmental factors, temperature, humidity, dust pollution etc. Blowers should be checked every 6 months and replaced if noisy.

They should be replaced any way after 18 months of service.

8.3.2 Second level maintenance

8.3.2.1 Stereo coder replacement

- Unscrew the top and bottom covers.
- Disconnect J1, J2, J3, J4 connectors.
- Unscrew the 4 bolts on the board.
- Unscrew the input level knob.
- Extract the board paying attention to disengage the switches and the potentiometer from the main panel.

8.3.2.2 R.F. power amplifier replacement

- Unscrew the top and bottom covers.
- Disconnect connector CN1 on the external board.
- Unscrew the three screws placed on the under side of the internal chassis.
- Disconnect the shielded cable between the MAIN CARD and the R.F. Power Amplifier.
- Extract the Power Amplifier Module.

8.3.2.3 Main card replacement

- Unscrew the top and bottom covers.
- Disconnect connectors J4, J5, J6, J7.

- Disconnect the shielded cable connecting the Main Card and the R.F. Power Amplifier.
- Unscrew the bolts that hold the board in place.
- Carefully remove the board.

8.3.2.4 Audio input card replacement

- Open the top and bottom covers.
- Disconnect CN1 and CN2. This is easily performed if you disconnect CN6 on the main card before.
- Unscrew the bolts of BNC1 and BNC2 on the rear panel.
- Dismount the two fixing screws of the terminal board on the rear panel.
- Desolder the six wires connecting the AUDIO INPUT MAIN CARD to the audio connectors RIGHT (mono) and LEFT (mpx).
- Desolder the wire connecting the AUDIO ALARM CARD with the AUDIO INPUT CARD (IF IT'S PRESENT).
- Dismount the board moving it upwards.

8.3.2.5 Modmeter board replacement

- Open the top and the bottom covers.
- Disconnect CN1.
- Unscrew the bolts of the switches SW1 and SW3 on the front panel.
- Remove the board very carefully.

8.3.2.6 Anameter board replacement

- Open the top and bottom covers.
- Dismount the knob INPUT LEVEL dBm (it's secured with a screw).
- Dismount the securing screws of the front panel.
- Disconnect CN1, the one that connects the ANAMETER BOARD with the MAIN CARD.
- Unscrew the two bolts securing the METER SELECTOR and POWER SWITCH.
- Remove the front panel.
- Disconnect CN1, CN4, JP1 and JP2 from the ANAMETER BOARD.
- Unscrew the two bolts securing the ANAMETER BOARD to the meter.
- Dismount the board carefully.

8.3.2.7 CPU replacement

- Unscrew the top and bottom cover.
- Dismount the securing screws of the front panel.

- Disconnect J1 and J2 from the CPU board.
- Remove the two screws of the CPU shielded box and take away the box.
- Carefully take away the CPU board.

8.3.2.8 Power supply replacement

- Open the top and bottom covers.
- Remove the three screws situated on the underside of the internal chassis.
- Disconnect J1 and J2 on the POWER SUPPLY.
- Take careful note of the position of the various connecting wires.
- Disconnect J4.
- Carefully take away the POWER SUPPLY.

8.3.2.9 Audio alarm card replacement (optional)

- Open the bottom cover.
- Unscrew the two bolts securing the Audio Alarm Card.
- Disconnect J2 on the Coder card.
- Desolder the wire connecting the Audio Alarm card with the Audio Input card.
- Carefully take away the Audio Alarm card.

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9. Working principles

Figure 9.1 gives an overview of modules and connections composing the PTX30 UHT /S3.

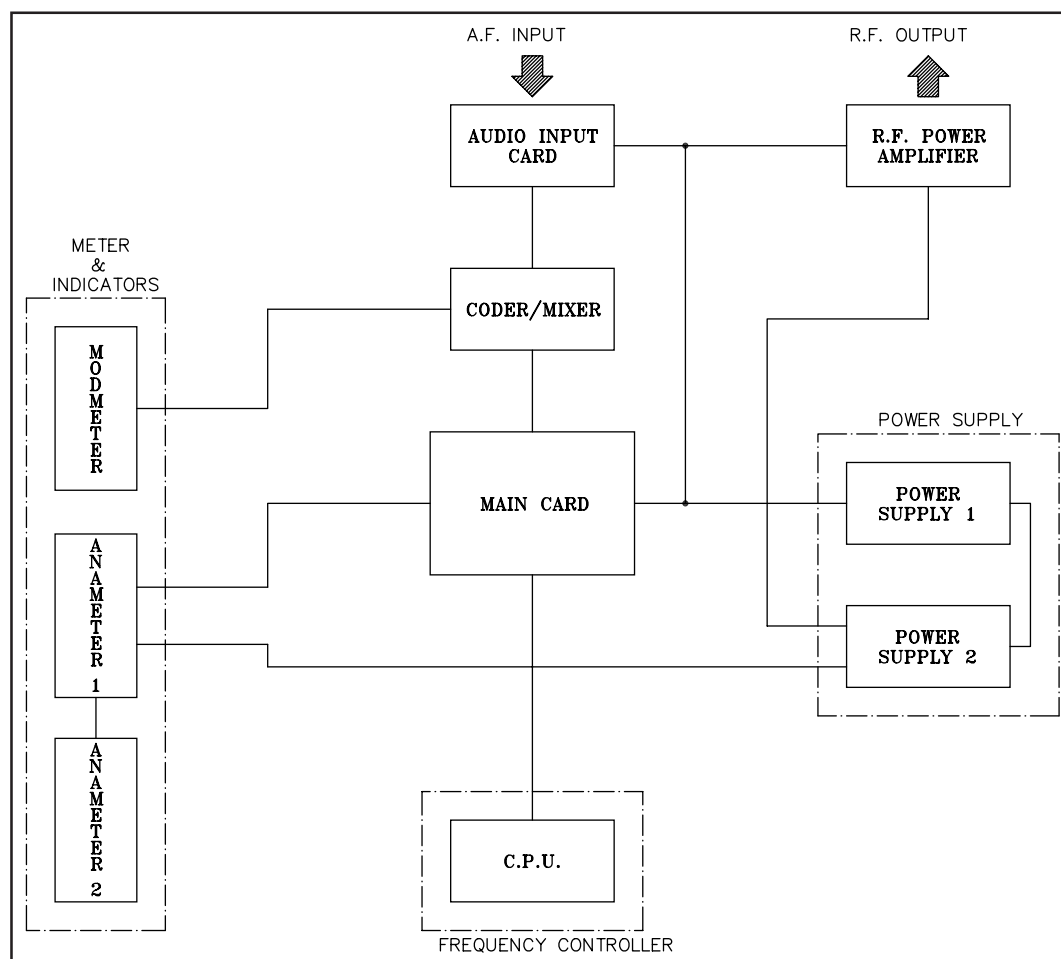


Figure 9.1

In the following you will find a short description of the functionalities of each module.

9.1 Power supply

This circuit is composed of one board placed over an heat-sinks perpendicularly mounted, fitted in the central part of the intermediate sub-chassis.

The power supply generates the stabilized voltages needed by the various modules that compose the PTX30-UHT-S3.

The mains voltage is transformed into 4 lower voltages that are rectified, filtered and stabilized to the final values of +5V, +12V, +15V, -15V and a variable voltage ranging from 2 to 24V.

The +5V line supplies the CPU board, the +15V and -15V lines supply the coder mixer, the main card, the modmeter, the CPU board and the anameter boards.

The +12V line supplies the driver stage of the RF power amplifier and the variable voltage (2-24V) supplies the final stage of the Power Amplifier.

The variable voltage applied to the final stage is regulated by the external control "PWR ADJ" and sets the exciter output power value.

The automatic output control guarantees a prefixed output power level through the PWR ADJ command (10 Fig. 1), over the entire frequency range and for the variations of operating parameters of the exciter, for example temperature, SWR.

The regulation is obtained by comparing the voltage set by the "PWR ADJ" against the voltage obtained from the internal power meter.

An output power limiter acts when the SWR becomes too high, lengthening the life of the final stage.

The above mentioned voltages and currents are measurable by the built-in analog meter.

9.2 Audio input card

This board is placed on the rear panel.

On this board, the audio signals coming from the outside world are filtered against radio frequency interference and then passed to the coder mixer board.

An appropriate connector brings out the principal working parameters of the exciter for telemetry purposes.

9.3 Coder mixer

This board is placed underneath the internal chassis.

The board can work as a stereo coder or as a simple audio mixer between the various inputs, these two functions are front panel selectable from the appropriate switch.

When the board is in stereo coder mode, a xtal oscillator generates the 19 KHz pilot tone and the sampling frequency that allows to the L-R part of the multiplex signal to be obtained and the related 38 KHz suppression.

The "LEFT" and "RIGHT" signals, after the level adjustment obtained with the right front panel switch, are filtered at 15 KHz and preemphasized (50µS CCIR, 75µS FCC) and then sent to the multiplex system.

At the output the signals are mixed with those coming from the SCA inputs.

In the mixer mode (MONO-MPX) the section of stereo coding is by-passed and the "RIGHT" input can accept a mono signal, while the "LEFT" signal accepts a multiplex signal with a 100KHz bandpass; the SCA inputs remain the same.

Three peak-to-peak detectors allow the analog meter to read the levels of the "RIGHT/MONO" and "LEFT/MPX" signals and the deviation level for the audio control circuit.

9.4 Main card

The main card is placed in the upper side of the internal chassis.

On this board, a voltage controlled oscillator (VCO) generates a signal at the preselected frequency.

This signal is amplified and drives the final power amplifier and the PLL circuit.

The audio signal coming from the coder mixer is amplified and processed to compensate the distortions introduced by the varicap diodes, and then injected into the VCO to perform the F3E class modulation.

The VCO frequency is divided for a certain ratio and then compared with a reference frequency obtained from a high stability xtal generator.

The result of this operation is an error voltage that after filtering is used to obtain the frequency stability of the VCO.

The unlock condition is signalled by a led indicator on the front panel.

9.5 R.F. power amplifier

The final power stage is mounted on a heat sink that dissipates the heat generated, and is enclosed in a totally shielded metallic box mounted in the middle upper side of the internal chassis.

The RF signal coming from the MAIN CARD at a level of about 300 mW reaches the driver transistor (MRF237 working in class C) is amplified to a level of 3 Watt and drives the final amplifier (BLW86) jumping to a level of 30 Watt.

The amplified signal is then filtered with a low pass filter that eliminates the harmonic contents.

A directional coupler reads the value of the direct and reflected power. These signals are sent to the power supply for the right controls (see also the description of the power supply), and are sent to the multimeter for measurement purposes.

A -30 dB coupler on the direct power is available on a BNC connector on the rear panel.

9.6 Modmeter

You can find this board on the left side of the front panel.

This circuit displays the frequency deviation of your signal, measuring the rectified audio signal that is injected in the VCO's varicaps.

A switch selects the gain of the meter between two levels (100% and 10%), thus obtaining a more exact reading over low deviation levels (e.g.. SCA RDS Pilot Tones).

Another switch selects the bar mode or the dot mode.

This display is comprises of 14 green LEDs and 6 red LEDs; in the 100% mode we will have a 100 Khz full scale (75KHz at the first red led) with a span of 5 Khz/led and in the 10% mode a span of 0.5 Khz/led.

9.7 Anameter

This circuit is comprises of two pcb's and a meter placed on the right side of the front panel.

It measures and displays the various parameters of the exciter: audio input levels, internal voltages and currents, direct and reflected power and varicap voltage.

Each type of measurement is indicated by an appropriate led.

These measurements are performed using the various scales available on the instrument:

MEASUREMENT	SCALE	FULL SCALE
Audio level	dB	+3dB
Voltages	V	30V
Currents	A	6A
Direct Pwr	W	50W
Reflected Pwr	W	10W

On this board we have also the two red alarm LEDs, whose signals come from the main card for the "UNLOCK" led and from the power supply for the "SWR" led; the Power On led, the power regulation trimmer and the mains switch.

9.8 CPU

The CPU board is installed on the front panel in the central position, and includes the microcontroller (68HC11) and the related components, a led display and the buttons for the frequency setting.

This circuit translates the number corresponding to the selected frequency into a binary code that is sent to the PLL programmable dividers to allow the VCO to lock on the right frequency.

An RS232 port, permits the remote control of some parameters of the exciter and the programming of the CPU; these features are available for maintenance personnel.

The last selected frequency is stored in a non-volatile part of the memory, so that at power up that frequency will be used.

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10. Adjustment Procedure

10.1 Stereo coder adjustment

After changing a stereo coder board it's necessary to make the following checks and adjustments (see figure 10.1):

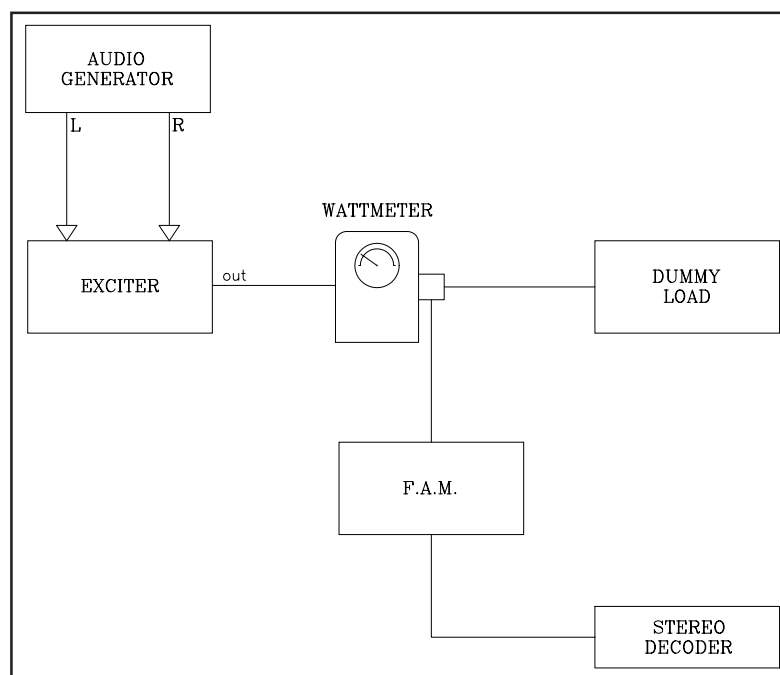


figure 10.1

- Select 0dBm with the INPUT LEVEL selector (with stereo coder and pilot tone inserted).
- Connect a low distortion sine wave audio generator to the inputs L, R.
- Connect the RF output of PTX30 to a suitable load (50Ohm-30W).
- Connect the R.F. Test -30dB to the R.F. input of F.A.M. (or other modulation Analyzer type).
- Connect to the rear FM-MPX output of F.A.M. a stereo measurement decoder.
- Switch on the PTX30 and wait for the PLL to lock.
- Set the output level of the signal generator to 0 dBm (2.2Vpp or 0.775Vrms) and 400Hz.
- Select with the switch the R (mono) reading and if needed adjust P8 on the coder board for a 0dB level.
- Repeat the same adjustment selecting L (mpx) and adjusting P7.
- Check with F.A.M. set in FM PK+ mode and with the 30Hz-200KHz filter inserted that the deviation is 75KHz; if necessary adjust R45 on the main card to obtain this value.

- Disconnect the audio signals on both channels and leave the PILOT TONE inserted; verify that a deviation of 6.5 to 7.5KHz is present.

This value can be adjusted with P6 on the coder board.

- Disconnect the audio signal from one channel and verify that the output level of the audio generator is 0dB.

On the stereo measure decoder, you should read a separation of more than 50dB at 400Hz. Take the reading on the other channel.

If the separation between the two channels differs more than 3dB, you can balance it adjusting P4 on the coder board.

10.2 Main card adjustment

- After inserting the main card and the relative connectors proceed as follows (figure 10.1):
- Select 0 dBm with the INPUT LEVEL selector, coder and pilot tone inserted.
- Connect the R.F. output to a dummy load.
- Connect the R.F. Test -30dB coupler to the RF input of F.A.M..
- Connect to the rear FM-MPX output of F.A.M. a stereo measurement decoder.
- Send a 0 dBm (0.775Vrms 2.2Vpp) 400 Hz tone to L, R inputs.
- Check with F.A.M. set in FM PK+ mode and with the 30Hz-200Khz filter inserted that the deviation is 75KHz; if necessary adjust R45 on the main card to obtain this value.
- Disconnect the pilot tone pushing the button and set the F.A.M. for distortion measurement; adjust R44 for the minimum of distortion.
- Repeat again the procedure described two points ago.



NOTE: for these adjustments, you must use an audio generator with a distortion lower than 0.001%. Perform these adjustments at the operating frequency.

10.3 Modmeter adjustment

- See figure 10.1, than connect the RF output to a dummy load.
- Connect an audio generator to the L and R inputs with an output of 400Hz at 0 dBm
- Connect the R.F. Test -30dB to the R.F. input of F.A.M..
- Select 0 dBm with the Input Level Selector, insert the coder and the pilot tone.
- Select 100% on the switch.
- Adjust trimpot R30 on the modmeter board so that the first red led lights (the led coinciding with the 100% mark).

10.4 Power supply adjustment

The adjustments on the power supply after a replacement are the same performed when a R.F. power module is changed.

Follow points 1, 2, 3, 4, 5, 6, 7, 8, of R.F. power amplifier replacement.

10.5 R.F. Power amplifier adjustment

- After the RF power module replacement, connect the setup shown in (see figure 10.2).

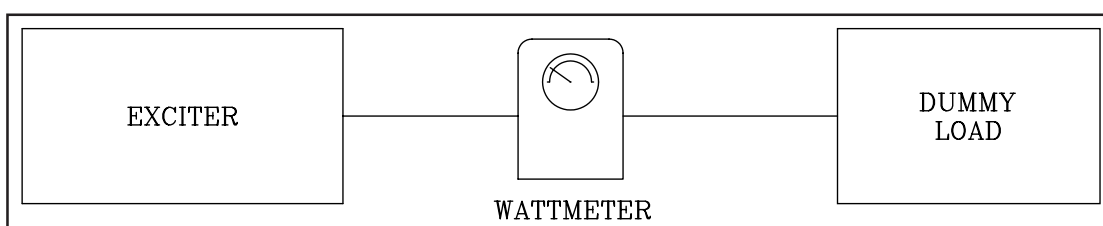


figure 10.2

- Switch on the PTX30 and wait for the PLL to lock.
- Rotate clockwise trimpot PWR ADJ to obtain the maximum output power.
- Read the output power on the external wattmeter; if it isn't 30W, adjust trimpot R3 on the power supply board to obtain 30W.
- Select with switch the FWD PWR reading and check that the reading of PTX-30 meter is 30W.
If not, adjust R21 on the anameter board.
- Disconnect the dummy load and you should notice a power output reduction at about 12W, and the SWR lamp should light.
Connect a voltmeter across the terminals PD and PR of the rear panel telemetry terminal board, and adjust R8 on the power supply for a reading of $0V \pm 0.1V$.
- Adjust trimpot PWR ADJ for an output power of 10W read on the FWD PWR scale, select the REF PWR scale with switch and adjust R16 on the anameter board for a reading of 10W f.s.d.
- Reconnect the dummy load and rotate clockwise trimpot PWR ADJ checking the output power of 30W.

10.6 Audio input card adjustment

No adjustments needed after board replacement.

10.7 CPU adjustment

After Cpu board replacement, check for proper performance of the display, the UP, DOWN and ENTER switches by entering an operating frequency. Check also the RS232 port.

10.8 Anameter adjustment

After the board replacement it's necessary to check all the adjustments for the measurements performed by this board.

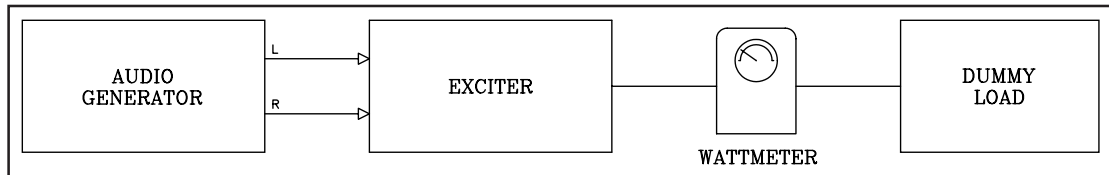


figure 10.3

- Connect an audio generator to the L and R inputs with an output of 400Hz at 0 dBm
- Connect a through wattmeter to the R.F. output and a dummy load.
- Set the output power to 25W.
- With the switch select the various measurements and adjust the readings according to the following table:

MEASURE	VALUE	F.S.D.	TRIMMER	NOTES
R(mono)	0dB	+3dB	R18	
L(mpx)	0dB	+3dB	R17	
+5V	5V	30V	R22	
FWD PWR	25W	50W	R21	1
REF PWR	10W	10W	R16	
VPA	VAR	30V	R15	2
IPA	VAR	6A	R19	3
AFC	VAR	30V	R20	4



NOTE:

- Disconnect the dummy load just for this measurement and regulate PWR ADJ for 10W of the FWD PWR.
- Check with a multimeter the Vpa voltage on the rear telemetry terminal board.
- As note 2 measure Ipa 1V=1A.
- Check the voltage on pin1 of U7 main card with a multimeter.

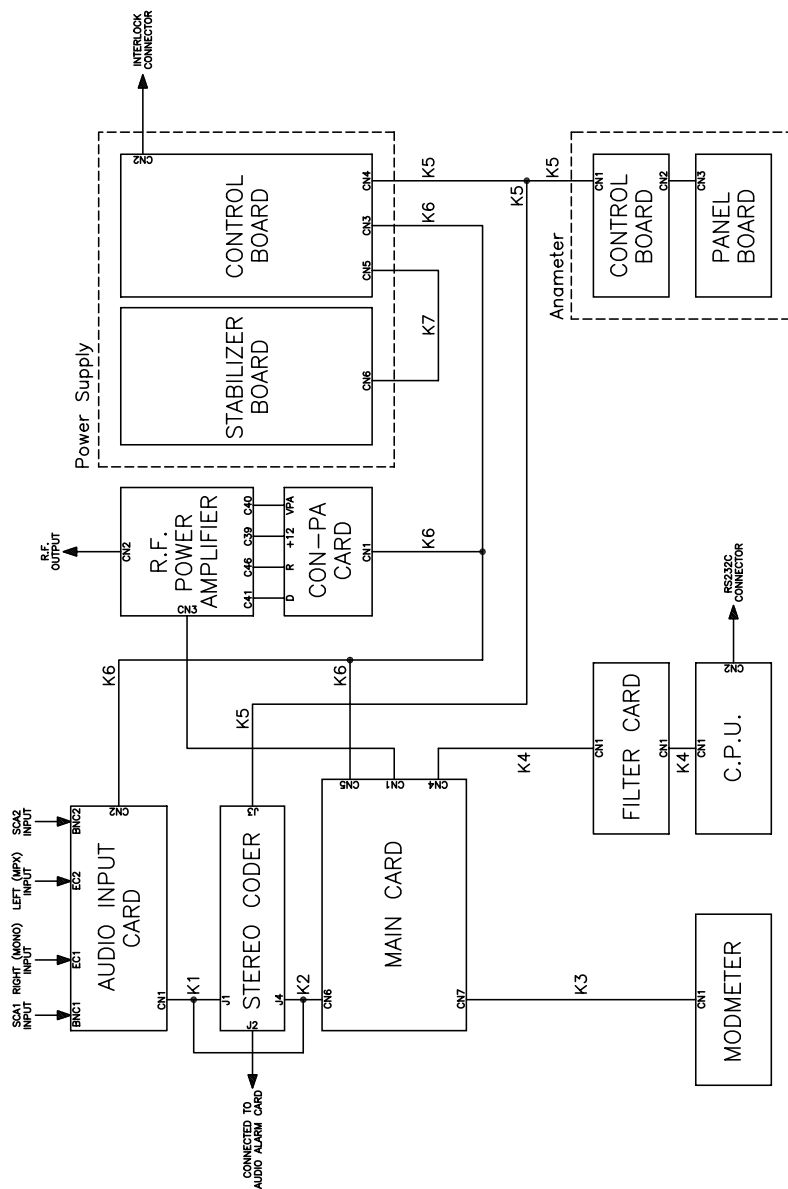
Appendix A Piani di montaggio, schemi elettrici, liste componenti / *Component layouts, schematics, bills of material*

Questa parte del manuale contiene i dettagli tecnici riguardanti la costruzione delle singole schede componenti il PTX30 UHT /S3. L'appendice è composta dalle seguenti sezioni:

This part of the manual contains the technical details about the different boards of the PTX30 UHT /S3. This appendix is composed of the following sections:

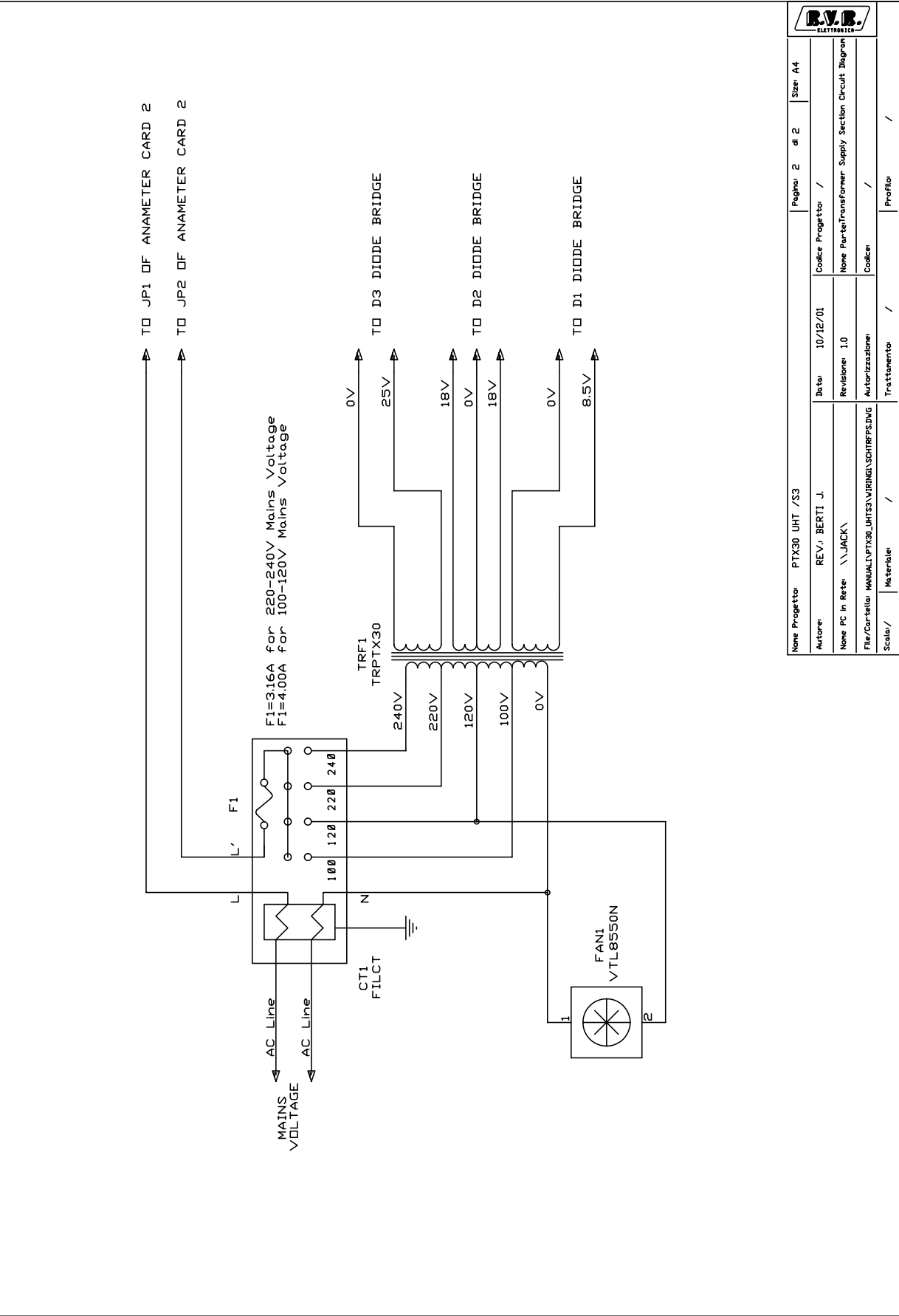
Description	RVR Code	Vers. Pages	
Wiring Diagrams	(old vers.)	1.0	2
Audio input Card	CSAUDIOCTE	1.0	4
Main Card	CSMAINPTX30	1.0	8
Power Supply	PSSWPTX30	1.0	6
	CSPS1PTX30-CSPS2PTX30 (old vers.)	1.0	6
R.F. Amplifier	CSPA30W-1	1.0	2
CON-PA Card	CSCON-PA1	1.0	4
Stereo Coder	CSSDC30A003	1.0	6
	CSSCHSDC30A (old vers.)	1.0	4
C.P.U. Board	CPU-NV	1.0	8
	SLCPU3/1-SLCPU2/3-SLCPU1/2(old vers.)	1.0	10
Filter Card	FILTER CARD FOR SLCPU (old vers.)	1.0	4
TCX Card	CSTCX002	1.0	4
Bias Control Card	CSBIASPJ5M01	1.0	6
Anameter Card	SLANA1PTX3S3-SLANA2PTX3S3	1.0	4
Modmeter Card	SLMODPTX30S3	1.0	4

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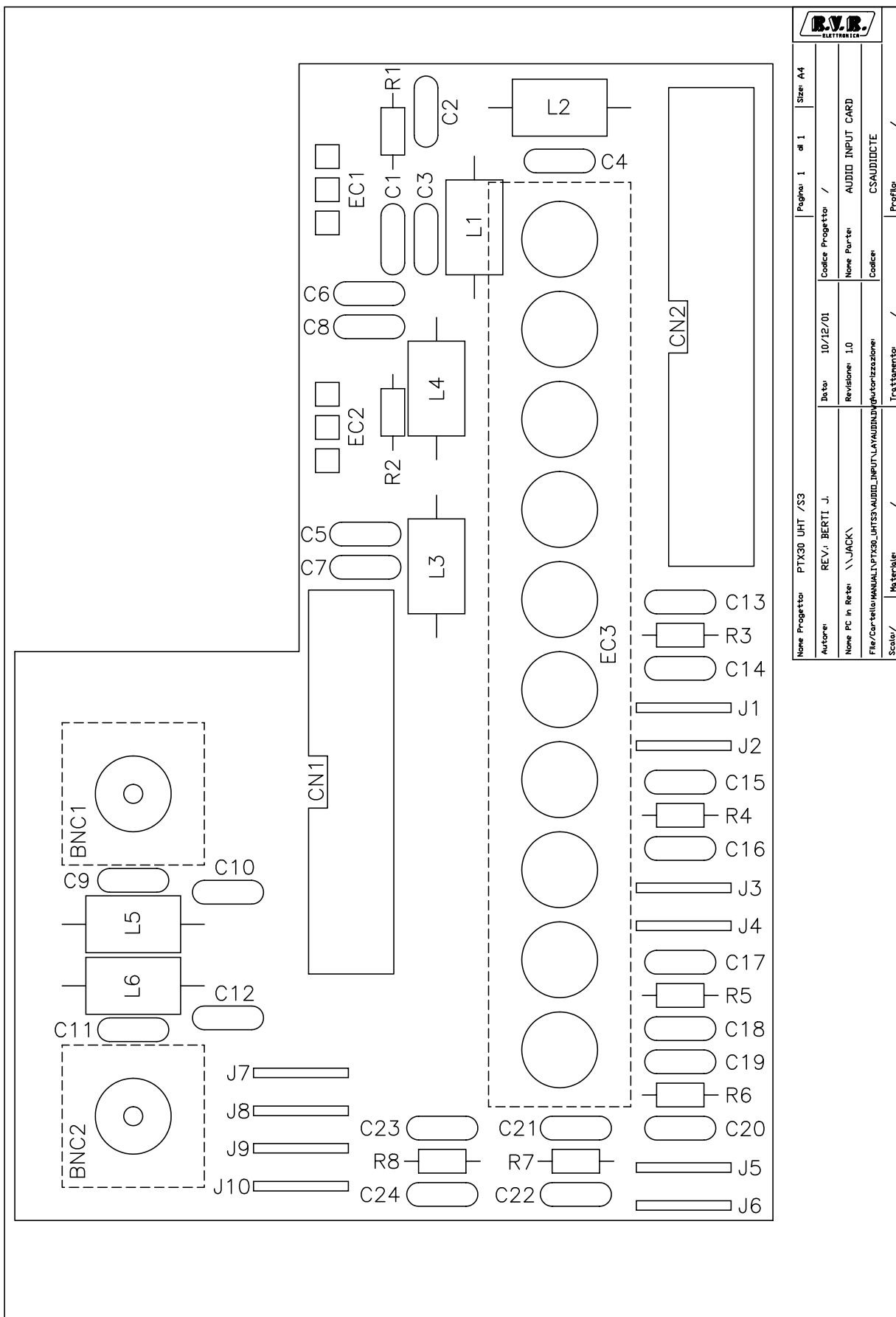
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Nome PC in Rete: \JACK\	Revisione: 1.0	Nome Parte: WIRING DIAGRAMS	
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Scala: /	Modificata: /	Trattamento: /	Profilo: /

Versione precedente, solo per riferimento
Former version, for reference only

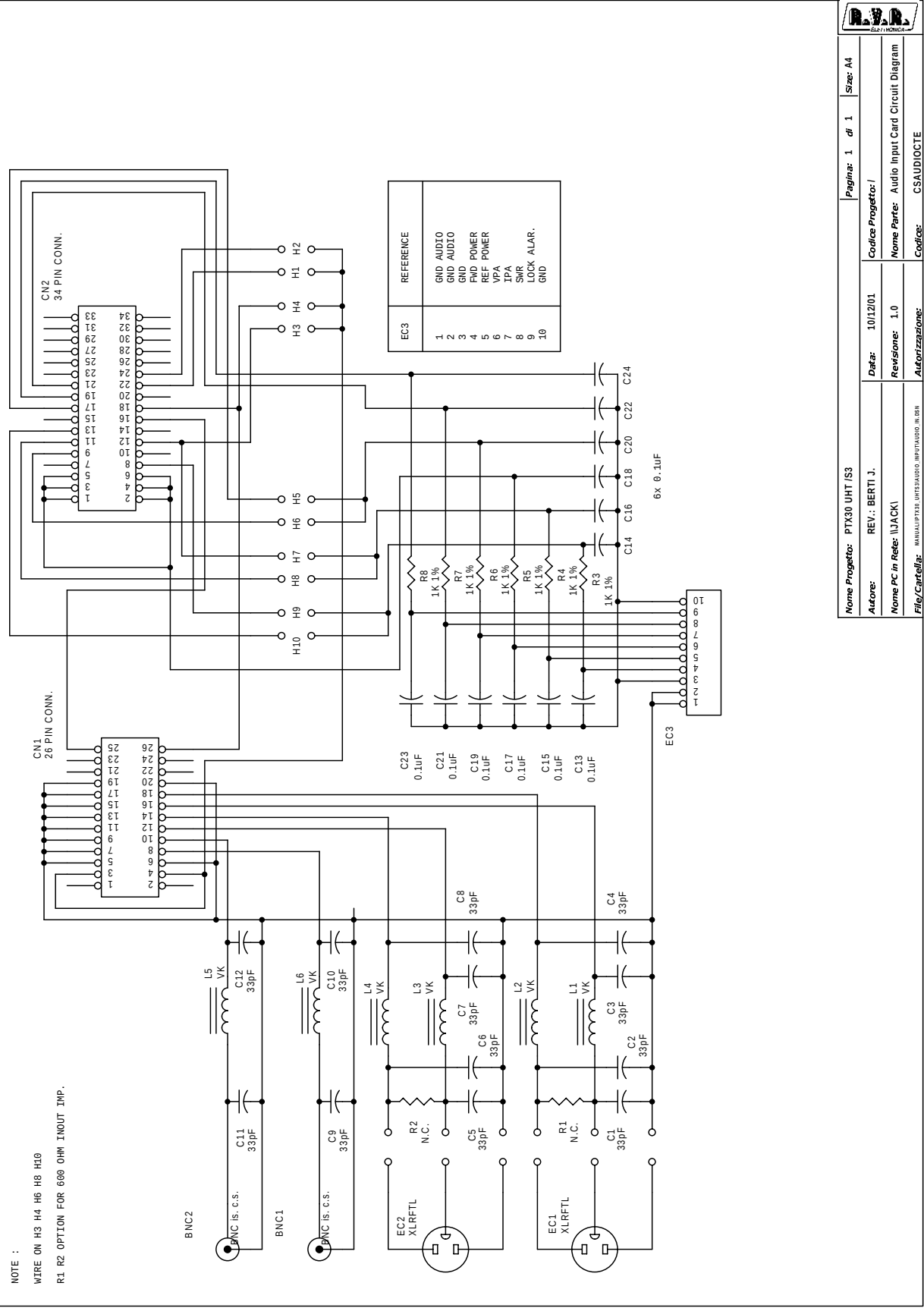


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Nome PC in Rete: \\JACK\	Revisione: 1.0	Nome Parte/Transformer Supply Section Circuit Diagram	
File/Carrello: MANULI\PTX30_UHTS3\WIRING\SCHTRFPP3.DWG	Autore: /	Codice: /	
Scala: /	Materiali: /	Trattamento: /	Profilo: /

Versione precedente, solo per riferimento
Former version, for reference only



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Scala/		Materiali		Codice		CSAUDIOCTE	
				Trattamento		/	
				Profilo		/	



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Autore: REV.: BERTI J.	Data: 10/12/01	Codice Progetto: /		
Nome PC in Rete: \JACK1	Revisione: 1.0	Nome Parte: Audio Input Card Circuit Diagram		
File/Cartella: MANULPTX30 UHTAUDIO IN.DGN	Autore: BERTI J.	Codice: CSAUDIOCTE		

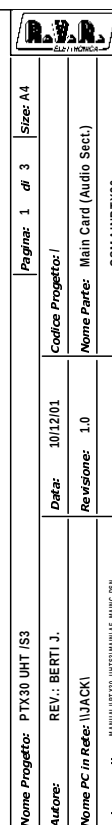
Audio Input Card Circuit Diagram
Bill Of Materials

Page 1

Item	Q.ty	Reference	Part	Description	PART ORDER CDE
1	6	R3,R4,R5,R6,R7,R8	1K 1%	RESISTOR 1/4W 1%	RSM1/4FK0001
2	12	C1,C2,C3,C4,C5,C6,C7,C8, C9,C10,C11,C12	33PF	CERAMIC CAPACITOR NP0	CKM330BJ600C
3	12	C13,C14,C15,C16,C17,C18, C19,C20,C21,C22,C23,C24	0.1UF	CERAMIC CAPACITOR	CKM104BK600P
4	6	L1,L2,L3,L4,L5,L6	VK	RF CHOKE	IMPVK00A
5	2	EC1,EC2	XLRFTL	XLR FEMMINA DA TELAI0	CNTXLRFP3P
6	1	EC3	MORSETTIERA 10	MORSETTIERA TELAI0 10	CONT. MORSP10P
7	1	CN1	26 PIN CONN.	CONN. M 2*13 P 2.54	CNTMCSFC26P
8	1	CN2	34 PIN CONN.	CONN. M 2*17 P 2.54	CNTMCSFC34P
9	2	BNC1,BNC2	BNC IS. C.S.	CONN. BNC A STAMP. IS.	CNTBNCFC SIS
10	6	JP1,JP2,JP3,JP4,JP5,JP6	WIRE	COLLEGAMENTO A FILO	FILO
11	10	H1,H2,H3,H4,H5,H6,H7,H8, H9,H10	WIRE JUMPER	PONTICELLO A FILO	WIREJUMPER
12	2	R1,R2	N.C.	NOT CONNECTED	

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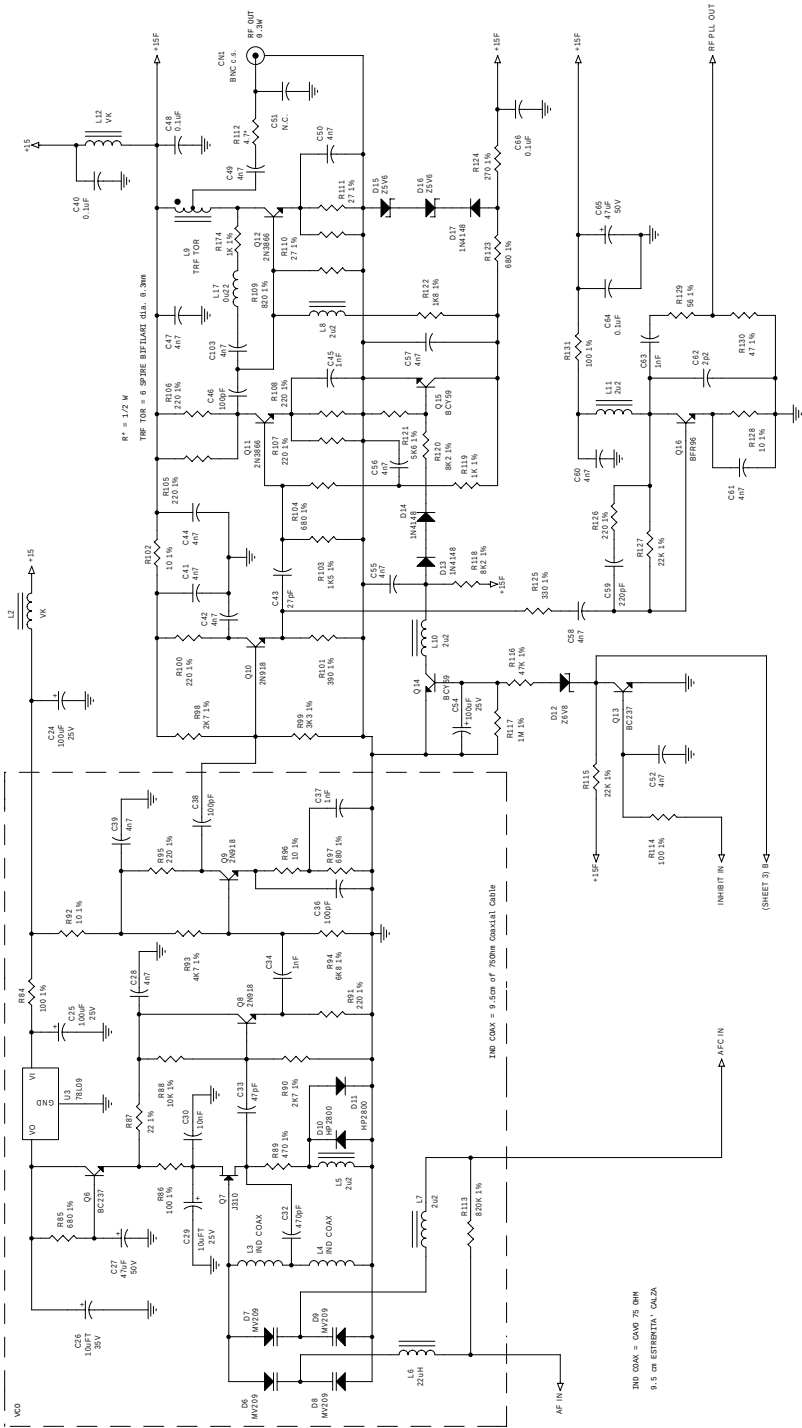


Main Card (Audio Sect.) Circuit Diagram

Bill Of Materials

Page 1

Item	Q.ty	Reference	Part	Description	Part Order Code
1	2	R1, R3	10 1%	RESISTOR 1/4W 1%	
2	1	R63	56 1%	RESISTOR 1/4W 1%	
3	5	R61, R62, R66, R68, R72	100 1%	RESISTOR 1/4W 1%	
4	1	R64	150 1%	RESISTOR 1/4W 1%	
5	1	R47	220 1%	RESISTOR 1/4W 1%	
6	1	R65	560 1%	RESISTOR 1/4W 1%	
7	2	R2, R4	680 1%	RESISTOR 1/4W 1%	
8	1	R73	1K 1%	RESISTOR 1/4W 1%	
9	2	R60, R67	1K5 1%	RESISTOR 1/4W 1%	
10	5	R29, R33, R46, R52, R71	4K7 1%	RESISTOR 1/4W 1%	
11	7	R35, R42, R43, R69, R70, R74, R75	10K 1%	RESISTOR 1/4W 1%	
12	3	R28, R55, R57	33K 1%	RESISTOR 1/4W 1%	
13	2	R34, R56	47K 1%	RESISTOR 1/4W 1%	
14	1	R59	100K 1%	RESISTOR 1/4W 1%	
15	1	R54	150K 1%	RESISTOR 1/4W 1%	
16	1	R58	330K 1%	RESISTOR 1/4W 1%	
17	1	R53	1M 1%	RESISTOR 1/4W 1%	
18	1	R44	TC500	TR.REG.VERT.CERMET	
19	1	R51	T22K	TR.REG.VERT.10mm	
20	1	R45	T47K	TR.REG.VERT.10mm	
21	1	C93	100PF	CERAMIC CAP. NP0	
22	4	C1, C4, C99, C100	0.1UF	CERAMIC CAP.	
23	1	C92	0.1UFP	POLYESTER CAPACITOR	
24	6	C3, C6, C21, C22, C23, C102	10UF	ELECTROLYTIC CAP.	
25	2	C2, C5	47UF	ELECTROLYTIC CAP.	
26	2	C18, C20	100UF	ELECTROLYTIC CAP.	
27	3	L1, L15, L16	2U2	RF CHOKE	
28	1	J1	2 PIN JUMP	MINIJUMPER P 2.54	
29	2	CN6, CN7	26 PIN CONN.	CONN. M 2*13 P 2.54	
30	5	D1, D2, D3, D4, D5	1N4148	SILICON DIODE	
31	1	Q1	BC237	NPN TRANSISTOR	
32	1	Q2	BC557	PNP TRANSISTOR	
33	1	U1	TL074	QUAD OP. AMP.	



Nome Progetto: PTX30 UHT /S3		Pagina: 2	di 3	Size: A4
Autore: REV.: BERTI J.		Codice Progetto: 1012/01		
Nome PC in Rete(JACK)		Revisione: 1.0		
File/Cartella: MANUALPTX30_UHTS3MAINRE_MANC.DSN		Autore/Revisione: CSMMAINPTX30		

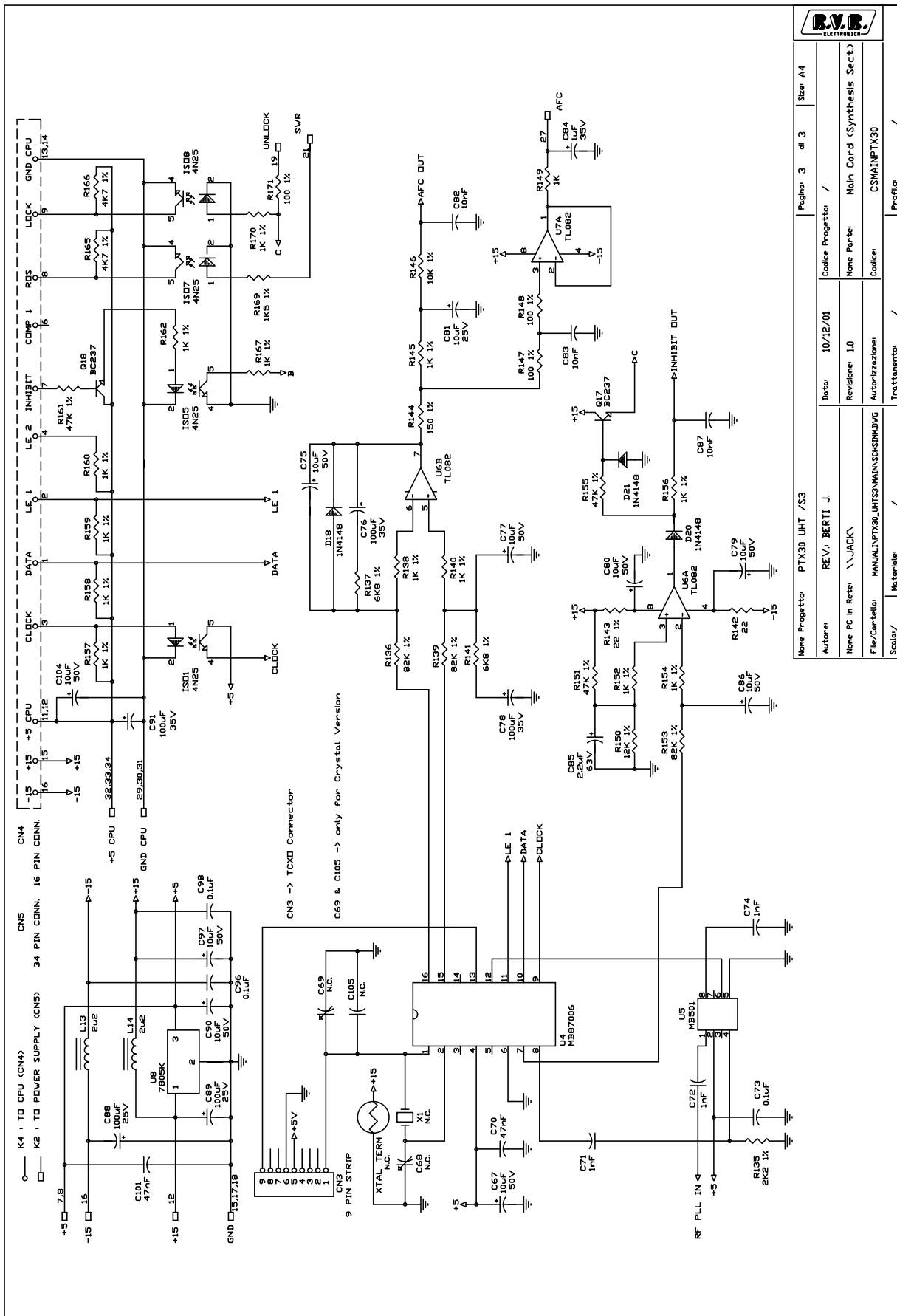
Main Card (R.F. Sect.) Circuit Diagram

Bill Of Materials

Page 1

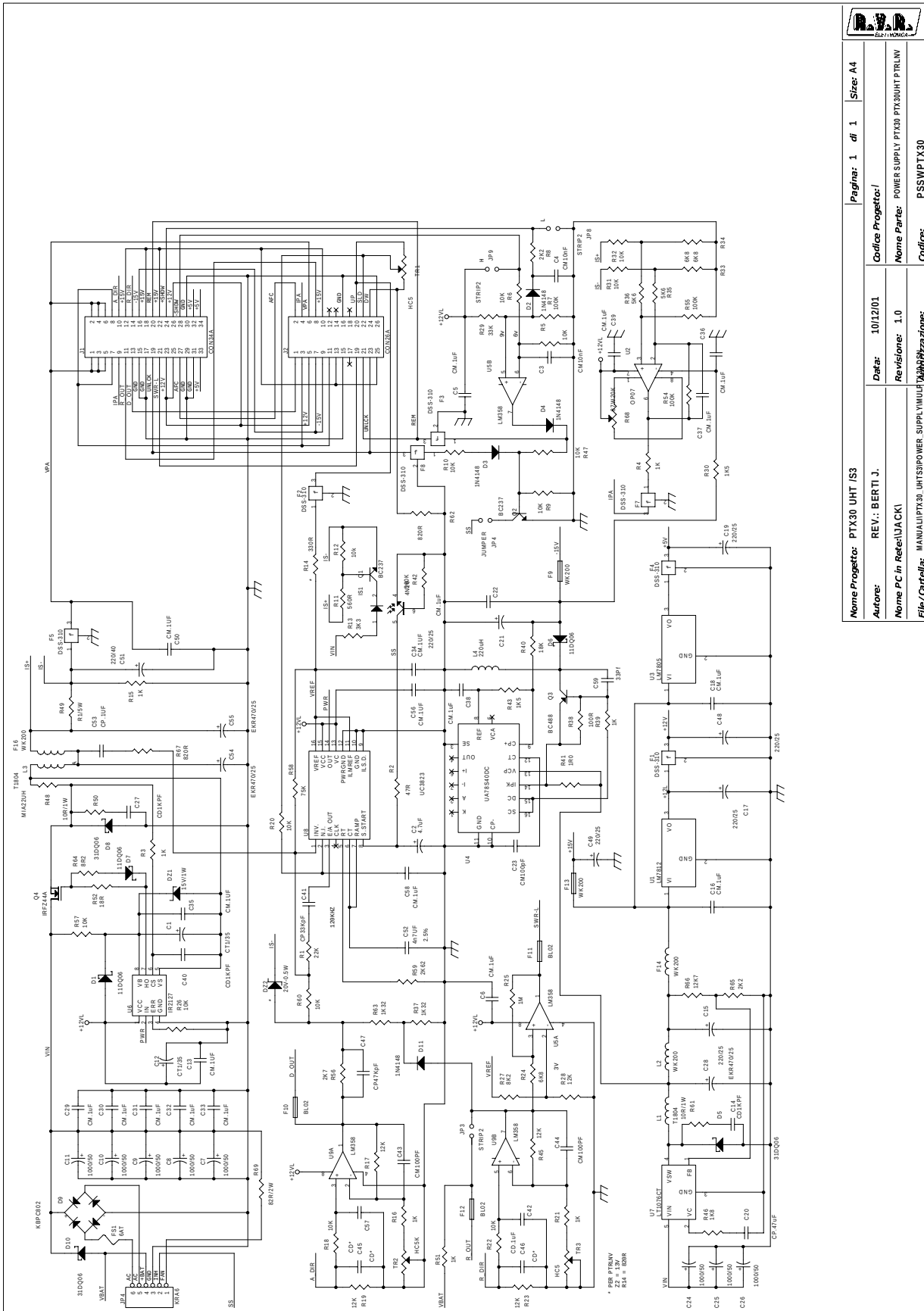
Item	Quantity	Reference	Part	Description	Part Order Code
1	1	R112	4.7*	RESISTOR 1/2W 5%	
2	4	R92, R96, R102, R128	10 1%	RESISTOR 1/4W 1%	
3	1	R87	22 1%	RESISTOR 1/4W 1%	
4	2	R110, R111	27 1%	RESISTOR 1/4W 1%	
5	1	R130	47 1%	RESISTOR 1/4W 1%	
6	1	R129	56 1%	RESISTOR 1/4W 1%	
7	4	R84, R86, R114, R131	100 1%	RESISTOR 1/4W 1%	
8	8	R91, R95, R100, R105, R106, R107, R108, R126	220 1%	RESISTOR 1/4W 1%	
9	1	R124	270 1%	RESISTOR 1/4W 1%	
10	1	R125	330 1%	RESISTOR 1/4W 5%	
11	1	R101	390 1%	RESISTOR 1/4W 1%	
12	1	R89	470 1%	RESISTOR 1/4W 1%	
13	4	R85, R97, R104, R123	680 1%	RESISTOR 1/4W 1%	
14	1	R109	820 1%	RESISTOR 1/4W 1%	
15	2	R119, R174	1K 1%	RESISTOR 1/4W 1%	
16	1	R122	1K8 1%	RESISTOR 1/4W 1%	
17	1	R103	1K5 1%	RESISTOR 1/4W 1%	
18	2	R90, R98	2K7 1%	RESISTOR 1/4W 1%	
19	1	R99	3K3 1%	RESISTOR 1/4W 1%	
20	1	R93	4K7 1%	RESISTOR 1/4W 1%	
21	1	R121	5K6 1%	RESISTOR 1/4W 1%	
22	1	R94	6K8 1%	RESISTOR 1/4W 1%	
23	2	R118, R120	8K2 1%	RESISTOR 1/4W 1%	
24	1	R88	10K 1%	RESISTOR 1/4W 1%	
25	2	R115, R127	22K 1%	RESISTOR 1/4W 1%	
26	1	R116	47K 1%	RESISTOR 1/4W 1%	
27	1	R113	820K 1%	RESISTOR 1/4W 1%	
28	1	R117	1M 1%	RESISTOR 1/4W 1%	
29	1	C62	2P2	CERAMIC CAPACITOR NP0	
30	1	C43	27PF	CERAMIC CAPACITOR NP0	
31	1	C33	47PF	CERAMIC CAPACITOR NP0	
32	3	C36, C38, C46	100PF	CERAMIC CAPACITOR NP0	
33	1	C59	220PF	CERAMIC CAPACITOR NP0	
34	1	C32	470PF	CERAMIC CAPACITOR	
35	4	C34, C37, C45, C63	1NF	CERAMIC CAPACITOR	
36	16	C28, C39, C41, C42, C44, C47, C49, C50, C52, C55, C56, C57, C58, C60, C61, C103	4N7	CERAMIC CAPACITOR	
37	1	C30	10NF	CERAMIC CAPACITOR	
38	4	C40, C48, C64, C66	0.1UF	CERAMIC CAPACITOR	
39	2	C26, C29	10UFT	TANTALIUM CAPACITOR	
40	2	C27, C65	47UF	ELECTROLYTIC CAPACITOR	
41	3	C24, C25, C54	100UF	ELECTROLYTIC CAPACITOR	
42	1	L17	0U22	RF CHOKE	
43	5	L5, L7, L8, L10, L11	2U2	RF CHOKE	
44	1	L6	22UH	RF CHOKE	
45	2	L2, L12	VK	RF CHOKE	
46	1	L9	TRF TOR	TOROIDE DIA. 10 MM	
47	1	CN1	BNC C.S.	CONN. BNC A STAMPATO	
48	3	D13, D14, D17	1N4148	SILICON DIODE	
49	2	D10, D11	HP2800	HOT CARRIER DIODE	
50	4	D6, D7, D8, D9	MV209	VARICAP DIODE	
51	2	D15, D16	Z5V6	ZENER DIODE 5.6V 0.4W	

52	1	D12	Z6V8	ZENER DIODE 6.8V 0.4W
53	1	U3	78L09	POS. STABILIZER 100mA
54	2	Q6, Q13	BC237	NPN TRANSISTOR
55	2	Q14, Q15	BCY59	NPN TRANSISTOR
56	3	Q8, Q9, Q10	2N918	NPN RF TRANSISTOR
57	1	Q16	BFR96	NPN RF TRANSISTOR
58	2	Q11, Q12	2N3866	RF POWER TRANSISTOR
59	1	Q7	J310	FET TRANSISTOR
60	1	C51	N.C.	NOT CONNECTED
61	2	L3, L4	IND COAX	9.5 cm of 750Ohm coaxial cable



Nome Progetto		PTX30 UHT /S3		Pagina		di		3		Size		A4	
Autore		REV. BERTI J.		Data		10/12/01		Codice Progetto		/			
Nome PC in Rete		\\JACK		Revisione		1.0		Nome Parte		Main Card (Synthesis Sect)			
File/Catella		MANUALPTX30_UHTS3MAIN.SCH.SIN.DWG		Autorizzazione				Codice		CSMAINPTX30			
Scala		/		Materiale		/		Trattamento		/		Profilo	

Item	Quantity	Reference	Part	Description	Part Order Code
1	1	R142	22	RESISTOR 1/4W 5%	
2	1	R143	22 1%	RESISTOR 1/4W 1%	
3	3	R147, R148, R171	100 1%	RESISTOR 1/4W 1%	
4	1	R144	150 1%	RESISTOR 1/4W 1%	
5	13	R138, R140, R145, R152, R154, R156, R157, R158, R159, R160, R162, R167, R170	1K 1%	RESISTOR 1/4W 1%	
6	1	R149	1K	RESISTOR 1/4W 5%	
7	1	R169	1K5 1%	RESISTOR 1/4W 1%	
8	1	R135	2K2 1%	RESISTOR 1/4W 1%	
9	2	R165, R166	4K7 1%	RESISTOR 1/4W 1%	
10	2	R137, R141	6K8 1%	RESISTOR 1/4W 1%	
11	1	R146	10K 1%	RESISTOR 1/4W 1%	
12	1	R150	12K 1%	RESISTOR 1/4W 1%	
13	3	R151, R155, R161	47K 1%	RESISTOR 1/4W 1%	
14	3	R136, R139, R153	82K 1%	RESISTOR 1/4W 1%	
15	3	C71, C72, C74	1NF	CERAMIC CAPACITOR	
16	3	C82, C83, C87	10NF	CERAMIC CAPACITOR	
17	2	C70, C101	47NF	CERAMIC CAPACITOR	
18	3	C73, C96, C98	0.1UF	CERAMIC CAPACITOR	
19	1	C84	1UF	ELECTROLYTIC CAP.	
20	1	C85	2.2UF	ELECTROLYTIC CAP.	
21	10	C67, C75, C77, C79, C80, C81, C86, C90, C97, C104	10UF	ELECTROLYTIC CAP.	
22	5	C76, C78, C88, C89, C91	100UF	ELECTROLYTIC CAP.	
23	2	L13, L14	2U2	RF CHOKE	
24	1	CN3	9 PIN STRIP	STRIP M P 2.54 9PIN	
25	1	J3	2 PIN JUMP	MINIJUMPERP 2.54	
26	1	CN4	16 PIN CONN.	CONN. M 2*8P 2.54	
27	1	CN5	34 PIN CONN.	CONN. M 2*17P 2.54	
28	3	D18, D20, D21	1N4148	SILICON DIODE	
29	4	IS01, IS05, IS07, IS08	4N25	PHOTOCOUPLER	
30	1	U8	7805K	POS. STABILIZ. 1.5A	
31	2	Q17, Q18	BC237	NPN TRANSISTOR	
32	2	U6, U7	TL082	DOUBLE OP. AMP.	
33	1	U5	MB501	DUAL MOD. PRESCALER	
34	1	U4	MB87006	INTEGRAT. DIVIDER PLL	
35	5	X1, C68, C69, C105, XTAL TERM	N.C.	NOT CONNECTED	



Nome Progetto: PTX30 UHT /S3		Pagina: 1 di 1		Size: A4	
Autore: REV.: BERTI J.		Data: 10/12/01		Codice Progetto:	
Nome PC in Rete: UACK1		Revisione: 1.0		Nome Parte: POWER SUPPLY PTX30 PTX30UHT PTRLW	
File/Cartella: MANALIPTX30_UHTSIPOWER SUPPLYVINULI		AutoRizzazione:		Codice: PSSWPTX30	

POWER SUPPLY PTX30 PTX30UHT PTRLNV

Bill Of Materials

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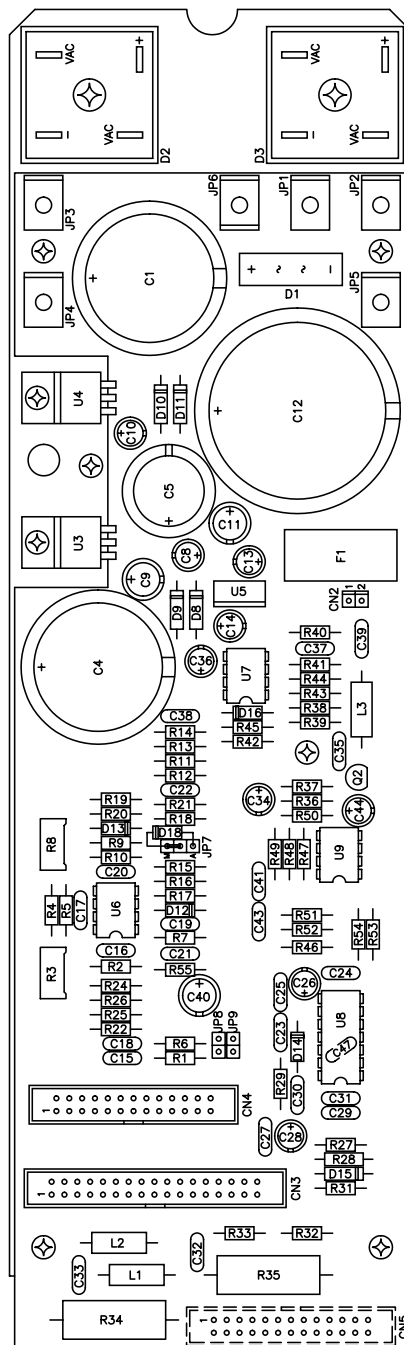
Item	Q.ty	Reference	Part
1	2	C1, C12	CT1/35
2	1	C2	4.7UF
3	2	C3, C4	CM10NF
4	20	C5, C6, C13, C16, C18, C22, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C50, C56, C58	CM.1UF
5	8	C7, C8, C9, C10, C11, C24, C25, C26	1000/50
6	3	C14, C27, C40	CD1KPF
7	6	C15, C17, C19, C21, C48, C49	220/25
8	1	C20	CP.47UF
9	3	C23, C43, C44	CM100PF
10	3	C28, C54, C55	EKR470/25
11	1	C41	CP33KPF
12	1	C42	CD.1UF
13	3	C45, C46, C57	CD*
14	1	C47	CP47KPF
15	1	C51	220/40
16	1	C52	4N7UF
17	1	C53	CP.1UF
18	1	C59	33PF
19	1	DZ1	15V/1W
20	1	DZ2	20V-0.5W
21	3	D1, D6, D7	11DQ06
22	4	D2, D3, D4, D11	1N4148
23	3	D5, D8, D10	31DQ06
24	1	D9	KBPC802
25	1	FS1	6AT

26	7	F1, F2, F3, F4, F5, F7, F8	DSS-310
27	5	L2, F9, F13, F14, F16	WK200
28	3	F10, F11, F12	BL02
29	1	IS1	4N26
30	3	JP3, JP8, JP9	STRIP2
31	1	JP4	KRA6
32	1	JP4	JUMPER
33	1	J1	CON34A
34	1	J2	CON26A
35	2	L1, L3	T1804
36	1	L4	220UH
37	2	Q1, Q2	BC237
38	1	Q3	BC488
39	1	Q4	IRFZ44A
40	1	R1	22K
41	1	R2	47R
42	7	R3, R4, R15, R16, R21, R39, R51	1K
43	14	R5, R6, R9, R10, R12, R18, R20, R22, R26, R31, R32, R47, R57, R60	10K
44	3	R7, R54, R55	100K
45	2	R8, R65	2K2
46	1	R11	560R
47	1	R13	3K3
48	1	R14	330R
49	5	R17, R19, R23, R28, R45	12K
50	3	R24, R33, R34	6K8
51	1	R25	1M
52	1	R27	8K2
53	1	R29	33K

54	2	R30, R43	1K5
55	2	R35, R36	5K6
56	2	R37, R63	1K32
57	1	R38	100R
58	1	R40	18K
59	1	R41	1R0
60	1	R42	560K
61	1	R46	1K8
62	1	R48	MIA22UH
63	1	R49	R1/5W
64	2	R50, R61	10R/1W
65	1	R52	18R
66	1	R56	2K7
67	1	R58	75K
68	1	R59	2K62
69	2	R62, R67	820R
70	1	R64	8R2
71	1	R66	12K7
72	1	R68	87W20K
73	1	R69	82R/2W
74	2	TR1, TR3	HC5
75	1	TR2	HC5K
76	1	U1	LM7812
77	1	U2	OP07
78	1	U3	LM7805
79	1	U4	UA78S40DC
80	2	U5, U9	LM358
81	1	U6	IR2127
82	1	U7	LT1076CT
83	1	U8	UC3823

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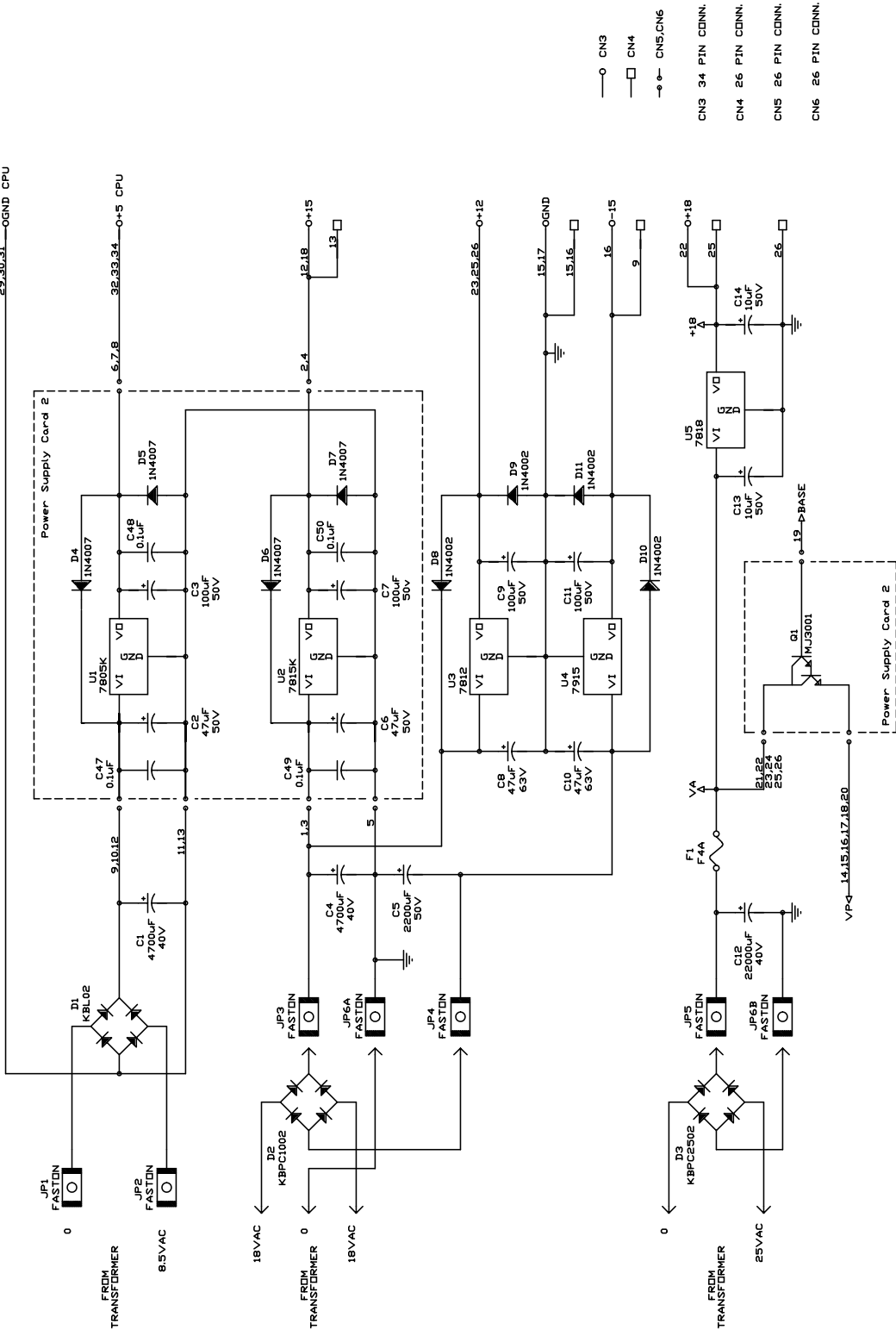


Nome Progetto		PTX30 UHT /S3	Pagina	1	di	1	Size	A4
Autore	REV.: BERTI J.		Code Progettista	/				
Nome PC in Rete	\\JACK\		Revisioni	1.0				
File/Cartella MANUALE	PTX30_UHTS3_POWER_SUPPLY_LAYOUT		Nome Parte	POWER SUPPLY 1				
Scala	/		Code	CSPS1PTX30				
Trattamento	/		Profilo	/				

Versione precedente, solo per riferimento

Former version, for reference only

29,30,31 —OGND CPU



- CN3
 - CN4
 - CN5,CN6
- CN3 34 PIN CONN.
CN4 26 PIN CONN.
CN5 26 PIN CONN.
CN6 26 PIN CONN.

									
Nome Progetto: PTX30 UHT /S3			Pagina: 1		di 2		Size: A4		
Autore: REV.: BERTI J.			Data: 10/12/01		Codice Progetto: /				
Nome PC in Rete: \\JACK\			Revisione: 1.0		Nome Part: POWER SUPPLY 1				
File/Cartella: MANUAL\PTX30_UHT\S3\MAIN\SCHALM.DWG			Autorizzazione:		Codice: CSPS2PTX30				
Scale: /			Materiali: /		Trattamento: /		Profilo: /		

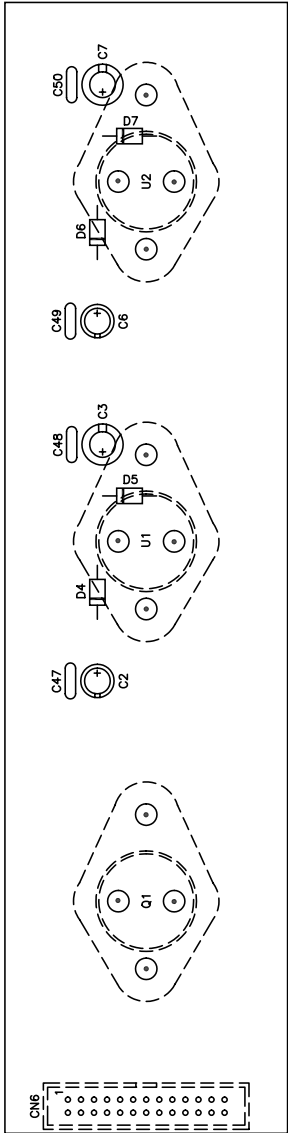
Versione precedente, solo per riferimento
Former version, for reference only

Power Supply Circuit Diagram

Bill Of Materials

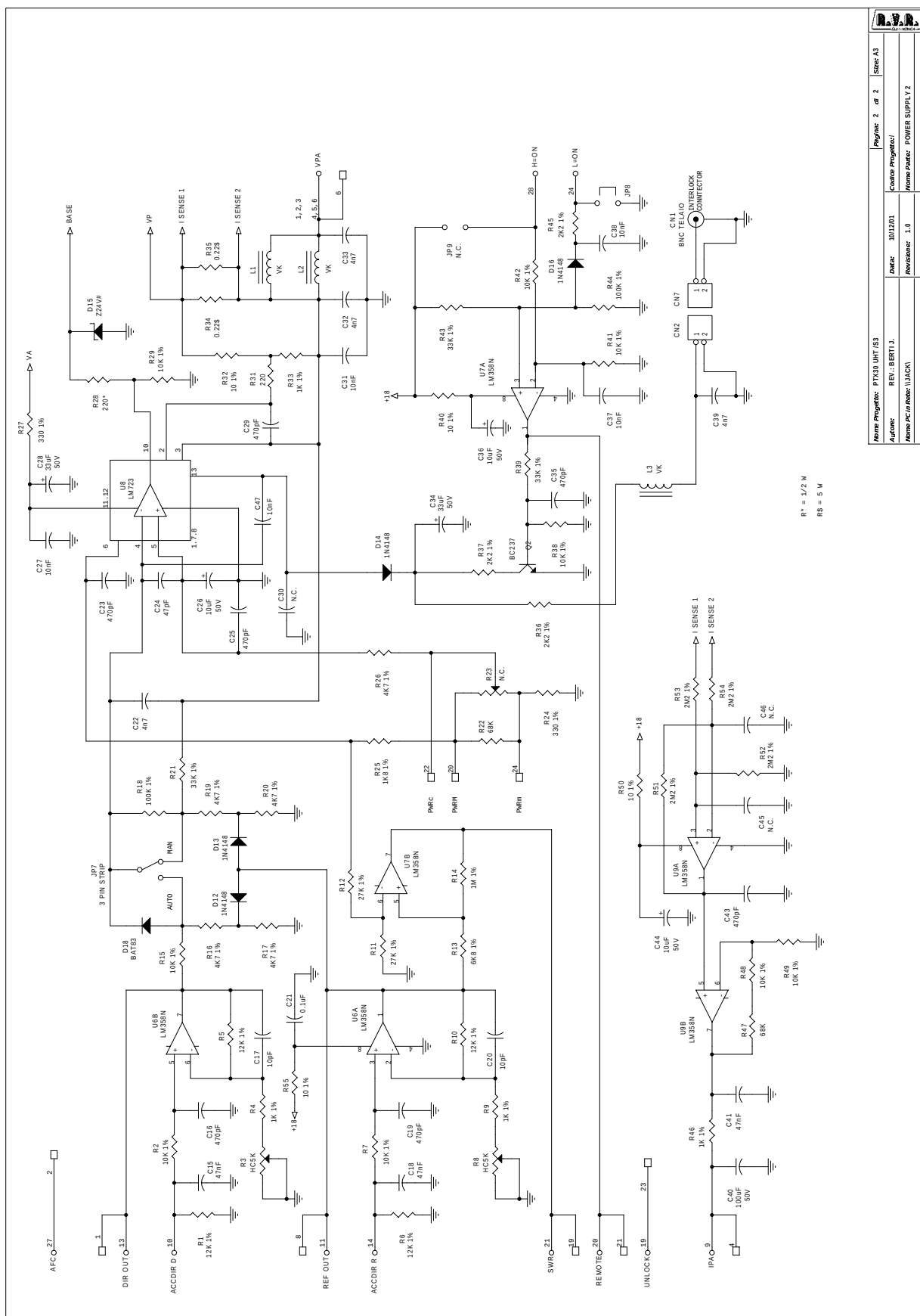
Page 1

Item	Q.ty	Reference	Part	Description	Part Order Code
1	4	C47, C48, C49, C50	0.1UF	CERAMIC CAPACITOR	
2	2	C13, C14	10UF	ELECTROLYTIC CAPACITOR	
3	4	C2, C6, C8, C10	47UF	ELECTROLYTIC CAPACITOR	
4	4	C3, C7, C9, C11	100UF	ELECTROLYTIC CAPACITOR	
5	1	C5	2200UF	ELECTROLYTIC CAPACITOR	
6	2	C1, C4	4700UF	ELECTROLYTIC CAPACITOR	
7	1	C12	22000UF	ELECTROLYTIC CAPACITOR	
8	1	F1	F4A	FAST FUSIBLE	
9	1	PF1	PFS520CS	PORTA FUS. 5*20 C.S.	
10	7	JP1, JP2, JP3, JP4, JP5, JP6B, JP6A	FASTON	CON.FASTON M CIRC.ST.	
11	3	CN4, CN5, CN6	26 PIN CONN.	CON. M 2*13 P 2.54	
12	1	CN3	34 PIN CONN.	CON. M 2*17 P 2.54	
13	4	D8, D9, D10, D11	1N4002	SILICON DIODE 100V	
14	4	D4, D5, D6, D7	1N4007	SILICON DIODE 1000V	
15	1	D2	KBPC1002	DIODE BRIDGE 10A	
16	1	D3	KBPC2502	DIODE BRIDGE 25A	
17	1	D1	KBL02	DIODE BRIDGE 4A	
18	1	U1	7805K	POS. STABILIZER 1.5A	
19	1	U3	7812	POS. STABILIZER 1A	
20	1	U2	7815K	POS. STABILIZER 1.5A	
21	1	U4	7915	NEG. STABILIZER 1A	
22	1	U5	7818	POS. STABILIZER 1A	
23	1	Q1	MJ3001	POWER TRANSISTOR	



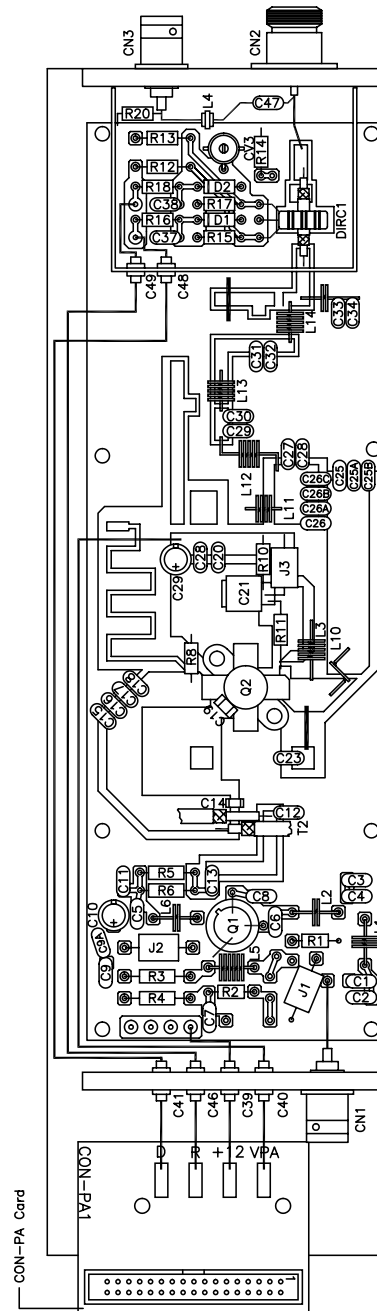
Nome Progetto: PTX30 UHT /S3		Pagina: 1	di 1	Size: A4
Autore:	REV.: BERTI J.	Codice Progetto: /		
Nome PC in Rete:	\\JACK\	Nome Parte: POWER SUPPLY 2		
File/Car-tella:	MANUAL\PTX30_UHT\S3\MAIN\LAYF52.DWG	Codice: C5PS2PTX30		
Scala:	Materiale: /	Trattamento: /		Profilo: /

Versione precedente, solo per riferimento
Former version, for reference only

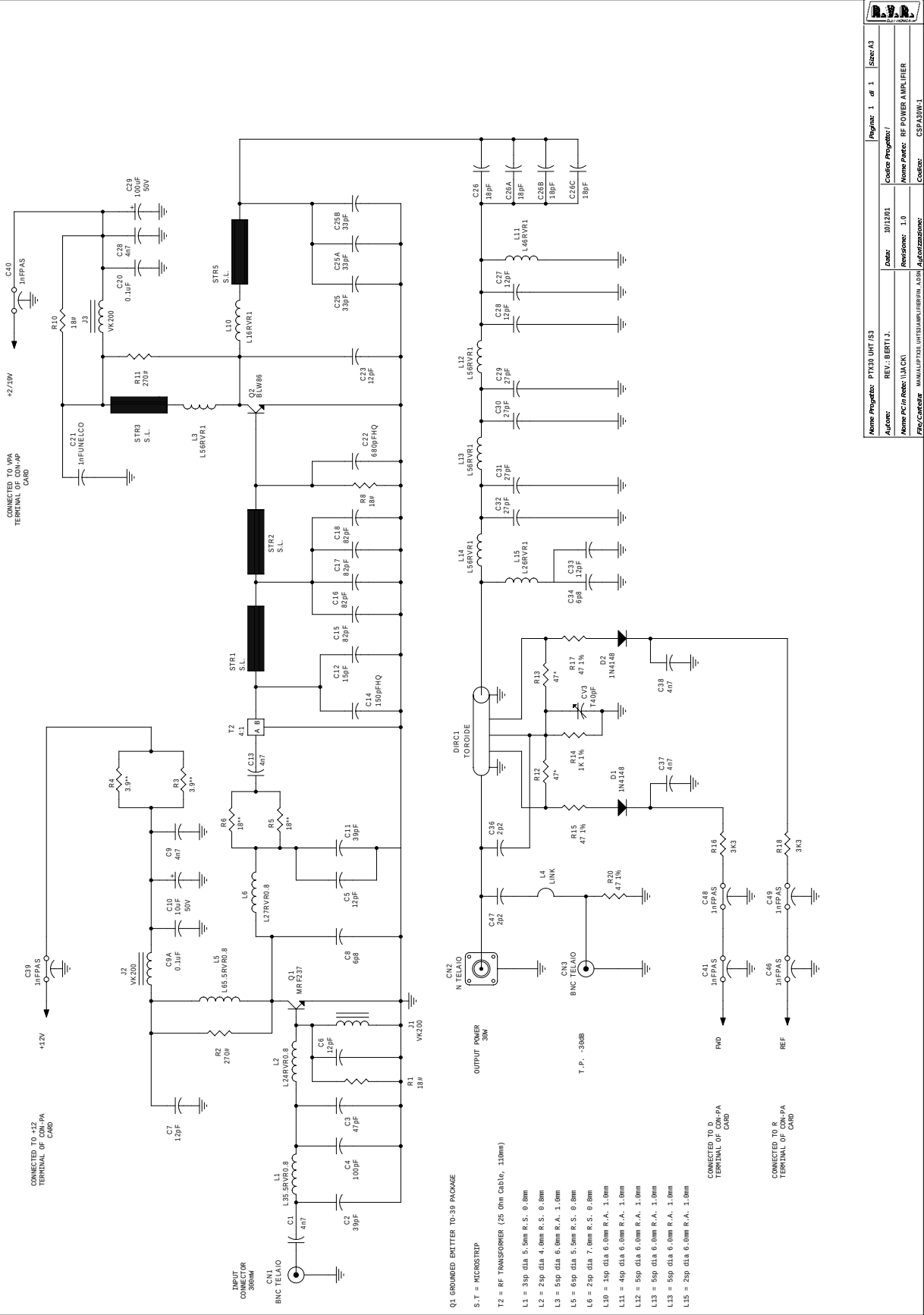


Nome Progetto: PTX30 UHT /S3		Page: 2	of 2	Size: A3
Autore: REV: BERTI J.		Data: 10/12/01		Codice Progetto:
Nome PC in Rete: 13JACK		Revisione: 1.0		Nome File: POWER SUPPLY 2
File/Caricare: MANUALE PTX30 UHT /S3		Allocazione:		Codice: CSPS1PTX30

Item	Quantity	Reference	Part	Description	Part Order Code
1	2	R34, R35	0.22\$	RESISTOR 5W	
2	4	R32, R40, R50, R55	10 1%	RESISTOR 1/4W 1%	
3	1	R31	220	RESISTOR 1/4W 5%	
4	1	R28	220*	RESISTOR 1/2W 5%	
5	2	R24, R27	330 1%	RESISTOR 1/4W 5%	
6	4	R4, R9, R33, R46	1K 1%	RESISTOR 1/4W 1%	
7	1	R25	1K8 1%	RESISTOR 1/4W 1%	
8	3	R36, R37, R45	2K2 1%	RESISTOR 1/4W 1%	
9	5	R16, R17, R19, R20, R26	4K7 1%	RESISTOR 1/4W 1%	
10	1	R13	6K8 1%	RESISTOR 1/4W 1%	
11	9	R2, R7, R15, R29, R38, R41, R42, R48, R49	10K 1%	RESISTOR 1/4W 1%	
12	4	R1, R5, R6, R10	12K 1%	RESISTOR 1/4W 1%	
13	2	R11, R12	27K 1%	RESISTOR 1/4W 1%	
14	3	R21, R39, R43	33K 1%	RESISTOR 1/4W 1%	
15	2	R22, R47	68K	RESISTOR 1/4W 5%	
16	2	R18, R44	100K 1%	RESISTOR 1/4W 1%	
17	1	R14	1M 1%	RESISTOR 1/4W 1%	
18	4	R51, R52, R53, R54	2M2 1%	RESISTOR 1/4W 1%	
19	2	R3, R8	HC5K	TR.REG.ORIZ.CERMET	
20	2	C17, C20	10PF	CERAMIC CAP. NP0	
21	1	C24	47PF	CERAMIC CAP. NP0	
22	7	C16, C19, C23, C25, C29, C35, C43	470PF	CERAMIC CAPACITOR	
23	4	C22, C32, C33, C39	4N7	CERAMIC CAPACITOR	
24	5	C27, C31, C37, C38, C47	10NF	CERAMIC CAPACITOR	
25	3	C15, C18, C41	47NF	CERAMIC CAPACITOR	
26	1	C21	0.1UF	CERAMIC CAPACITOR	
27	3	C26, C36, C44	10UF	ELECTROLYTIC CAP.	
28	2	C28, C34	33UF	ELECTROLYTIC CAP.	
29	1	C40	100UF	ELECTROLYTIC CAP.	
30	3	L1, L2, L3	VK	RF CHOKE	
31	2	CN2, JP8	2 PIN STRIP	STRIP M P 2.54 2PIN	
32	1	JP7	3 PIN STRIP	STRIP M P 2.54 3PIN	
33	1	CN7	2 PIN F STRIP	STRIP F P 2.54 2PIN	
34	3	J1, J2, J3	2 PIN JUMP	MINIJUMPER P 2.54	
35	1	CN1	BNC TELAIO	CON. BNC A TELAIO	
36	4	D12, D13, D14, D16	1N4148	SILICON DIODE	
37	1	D18	BAT83	HOT CARRIER DIODE	
38	1	D15	Z24V#	ZENER DIODE 24V 1W	
39	1	U8	LM723	VAR. STABIL. 100mA	
40	1	Q2	BC237	NPN TRANSISTOR	
41	3	U6, U7, U9	LM358N	DOUBLE OP. AMP.	
42	5	JP9, R23, C30, C45, C46	N.C.	NOT CONNECTED	



Nome Progetto		PTX30 UHT /S3		Pagina	di	1	Size	A3
Autore	REV. BERTI J.	Data		10/12/01		Codice Progetto		
Nome PC in Rete	\\JACK\	Revisione		1.0		Nome Parte		
File/Carrello	MANUAL\PTX30_UHTS3\AMPLIFIER\LAYTN_A3.DWG	Autorizzazione				Codice		
Scala	Materiale	Trattamento				Profilo		



Nome Progetto: PTX30 UHT /S3		Revisione: 1.0	Size: A3
Autore: REV. BERTI L.		Revisione: 1.0	Nome Progetto: RF POWER AMPLIFIER
Nome PC in Rete: L3A.CA		Revisione: 1.0	Nome Progetto: RF POWER AMPLIFIER
Pro/Contratto: MANUALE PTX30 UHT/30W/1		Revisione: 1.0	Nome Progetto: RF POWER AMPLIFIER
Pro/Contratto: MANUALE PTX30 UHT/30W/1		Revisione: 1.0	Nome Progetto: RF POWER AMPLIFIER

CSPA30W-1

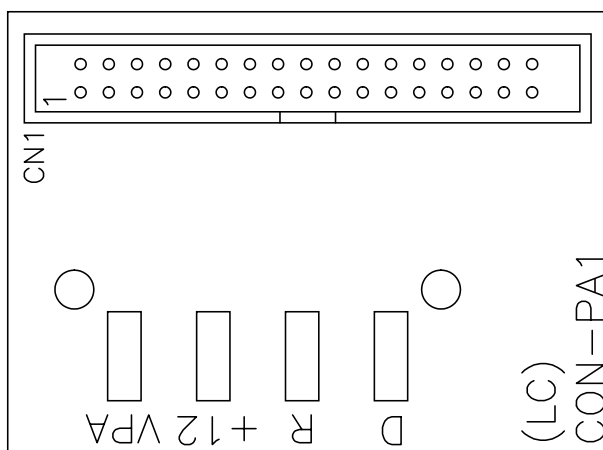
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Page1

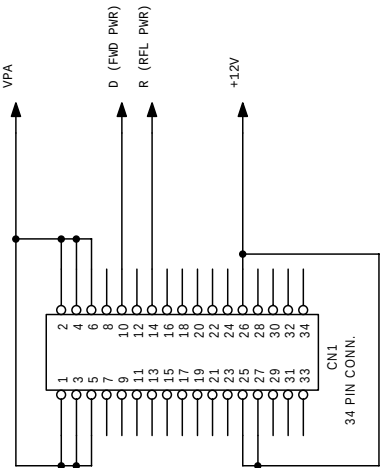
Item	Q.ty	Reference	Part
1	2	CN1, CN3	BNC TELAI0
2	1	CN2	N TELAI0
3	1	CV3	T40pF
4	6	C1, C9, C13, C28, C37, C38	4n7
5	2	C11, C2	39pF
6	1	C3	47pF
7	1	C4	100pF
8	7	C5, C6, C7, C23, C27, C28, C33	12pF
9	2	C8, C34	6p8
10	2	C9A, C20	0.1uF
11	1	C10	10uF
12	1	C12	15pF
13	1	C14	150pFHQ
14	4	C15, C16, C17, C18	82pF
15	1	C21	1nFUNELCO
16	1	C22	680pFHQ
17	3	C25B, C25A, C25	33pF
18	4	C26C, C26B, C26A, C26	18pF
19	1	C29	100uF
20	4	C29, C30, C31, C32	27pF
21	2	C36, C47	2p2
22	6	C39, C40, C41, C46, C48, C49	1nFPAS
23	1	DIRC1	TOR0IDE
24	2	D1, D2	1N4148
25	3	J1, J2, J3	VK200
26	1	L1	L35.5RVR0.8
27	1	L2	L24RVR0.8
28	4	L3, L12, L13, L14	L56RVR1
29	1	L4	LINK
30	1	L5	L65.5RVR0.8
31	1	L6	L27RVR0.8
32	1	L10	L16RVR1
33	1	L11	L46RVR1
34	1	L15	L26RVR1
35	1	Q1	MRF237
36	1	Q2	BLW86
37	3	R1, R8, R10	18#
38	2	R2, R11	270#
39	2	R3, R4	3.9**
40	2	R6, R5	18**
41	2	R13, R12	47*
42	1	R14	1K 1%
43	3	R15, R17, R20	47 1%
44	2	R18, R16	3K3
45	4	STR1, STR2, STR3, STR5	S.L.
46	1	T2	4:1

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E.V.R. Engineering & Visual Representation												
Nome Progetto			PTX30 UHT /S3		Pagina		1	di	1	Size	A4	
Autore			REV.: BERTI J.		Codice Progetto		/					
Nome PC in Rete			\\JACK\		Data		10/12/01		Nome Parte			CON-PA CARD
File/Cartella			MANUAL\PTX30_UHTS3\CON-PALAYCONPA1\VC		Revisione		1.0		Codice		CSCON-PA1	
Scala/			Materiale		Trattamento		/		Profilo		/	



Nome Progetto: PTX30 UHT /S3				Pagina: 1 di 1		Size: A4
Autore: REV: BERTI J.		Data: 10/12/01		Codice Progetto: /		
Nome PC in Rete: \\JACK\		Revisione: 1.0		Nome Parte: CON-PA CARD		
File/Cartella: MANUALEPTX30_UHTS3CON-PA/CON_PA.DSN		Autorizzazione:		Codice: C3CON-PA1		

CON-PA CARD

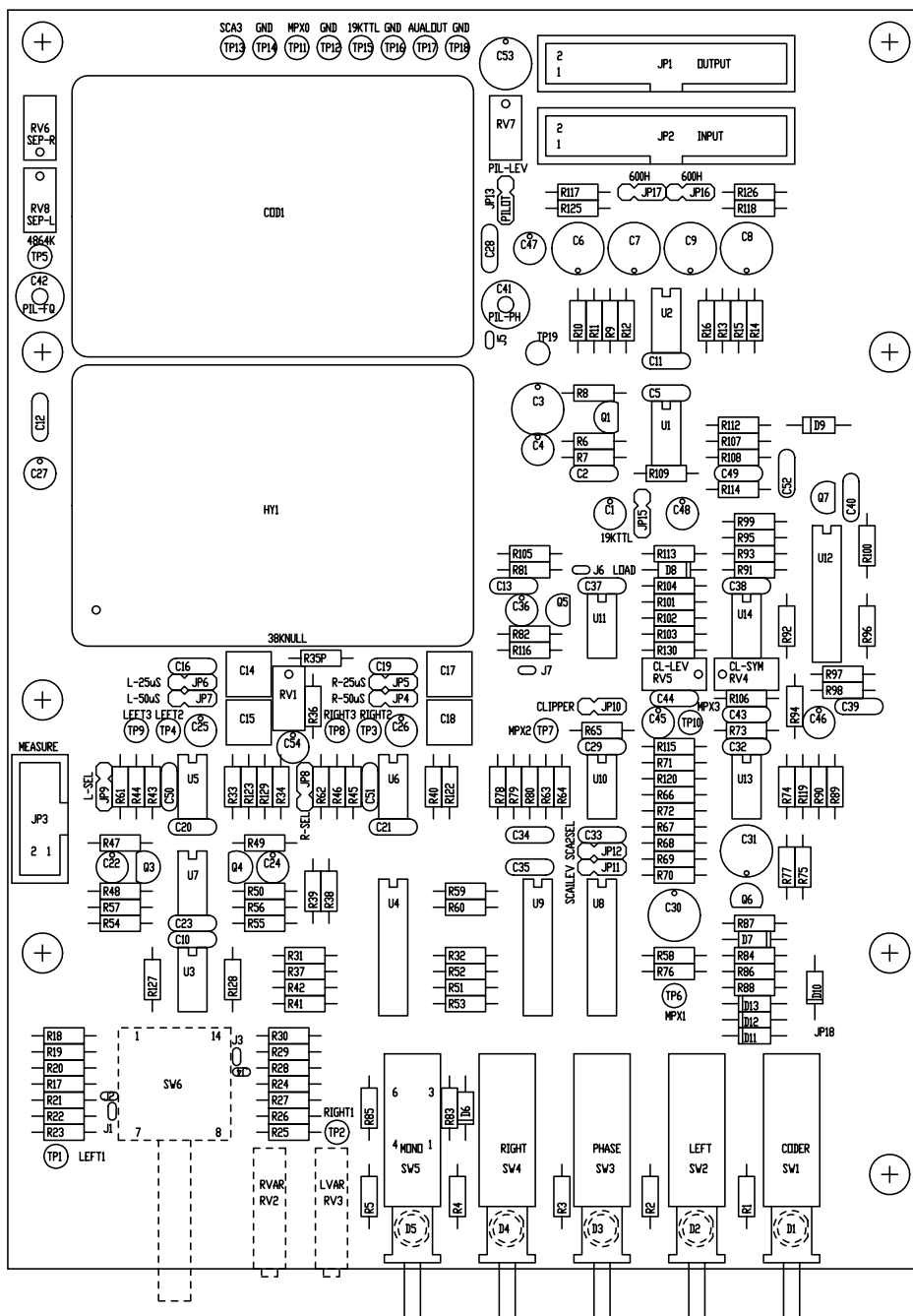
Bill Of Materials

Page 1

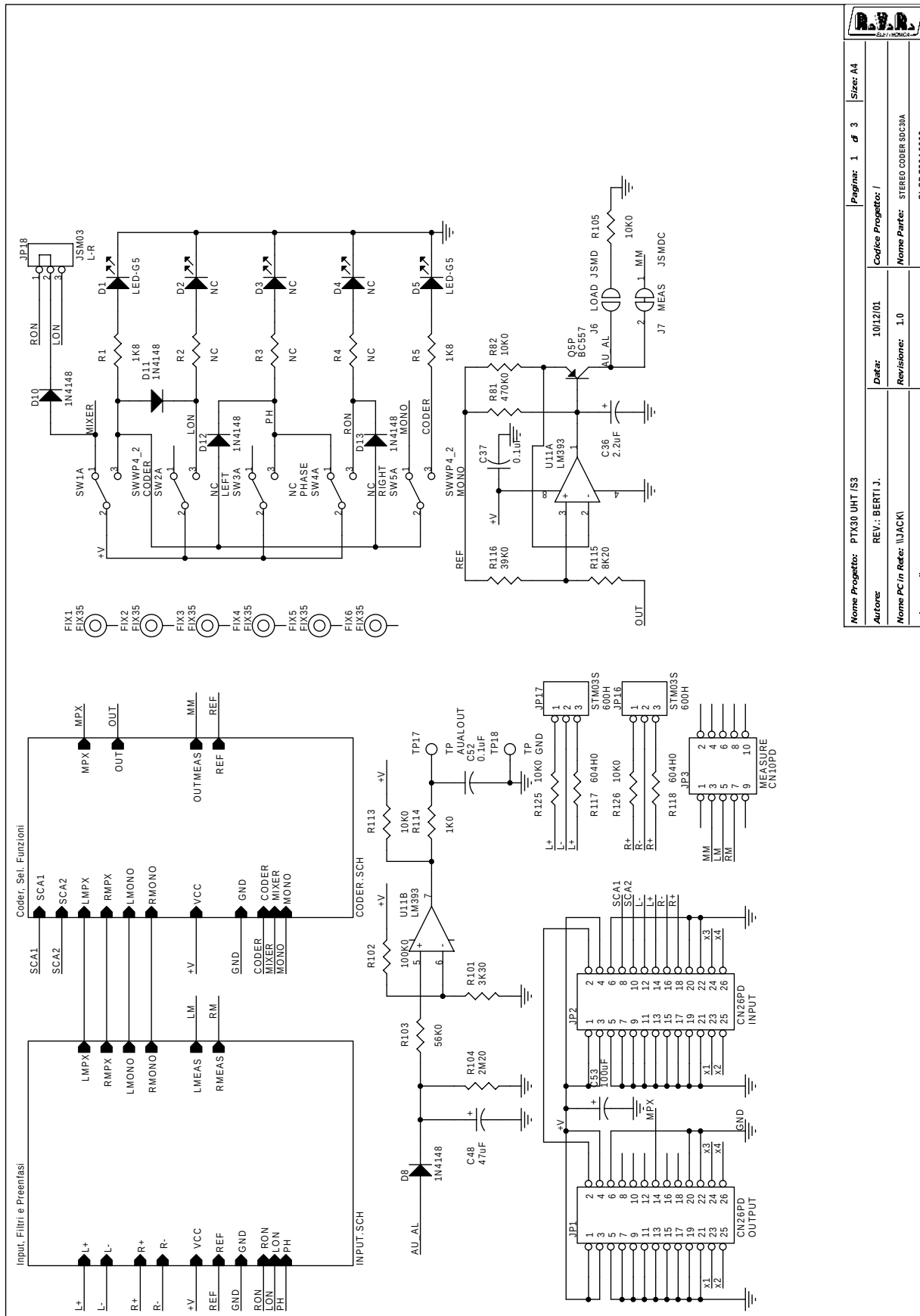
Item	Quantity	Reference	Part	Description	Part Order Code
1	1	CN1	34 PIN CONN.	CONN. M 2*17P 2.54 CNTMCSFC34P	

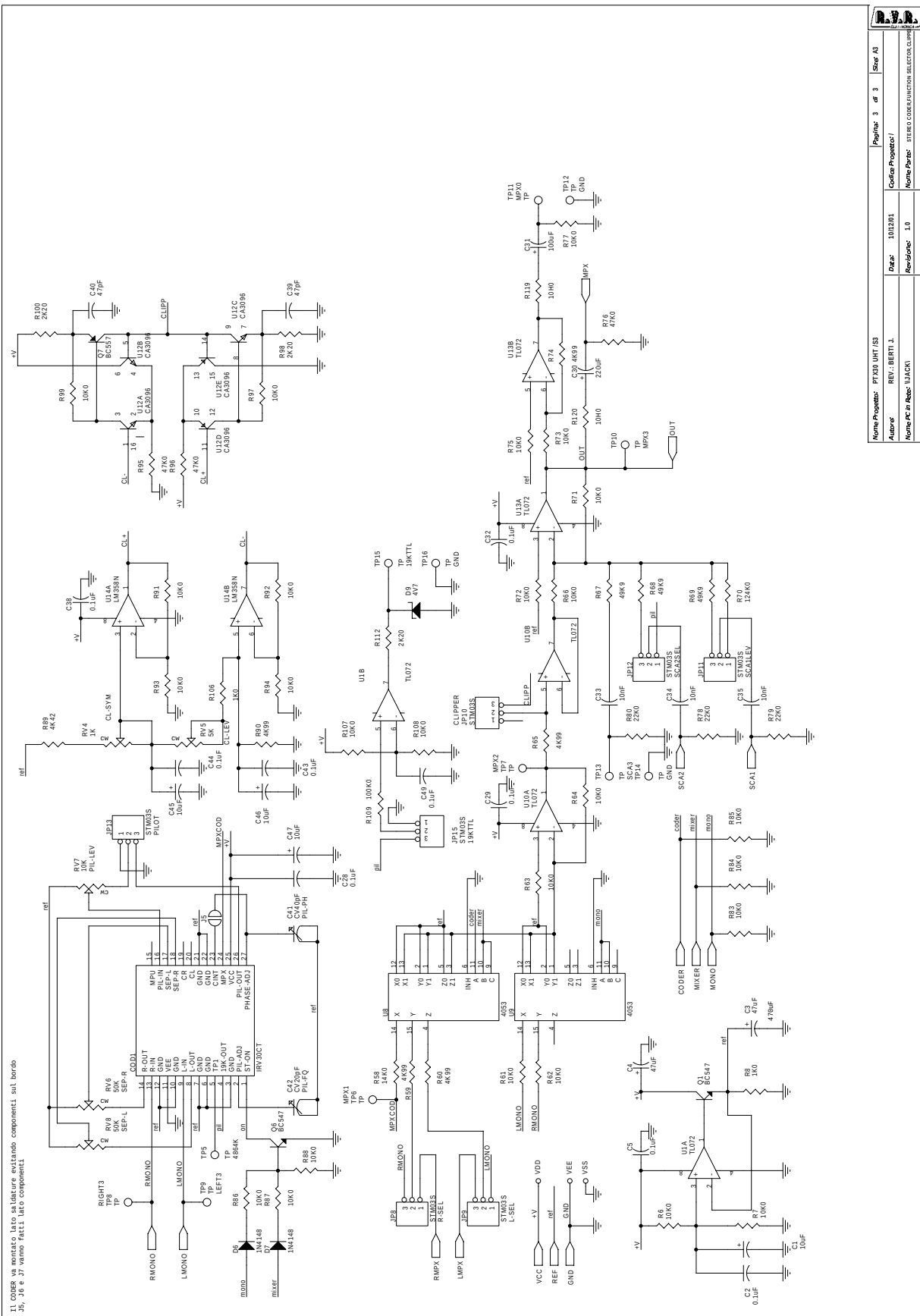
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Nome Progettista		PTX30 UHT /S3		Pagina 1 di 1		Size A4	
Autore		REV: BERTI J.		Data		10/12/01	
Nome PC in Rete		\\JACK\		Revisione		10	
File/Caricella		MMALUPTX30.UHT\S3REV1.COB		Autore		SDC30A_3DVG	
Scala/		Metriche		Autorizzazione		Profilo	
				Trasmissione		/	
				Codice Progetto		/	
				Nome Parte		SCHEDA CODER SDC30A/3	
				Codice		CSSDC30A0003	

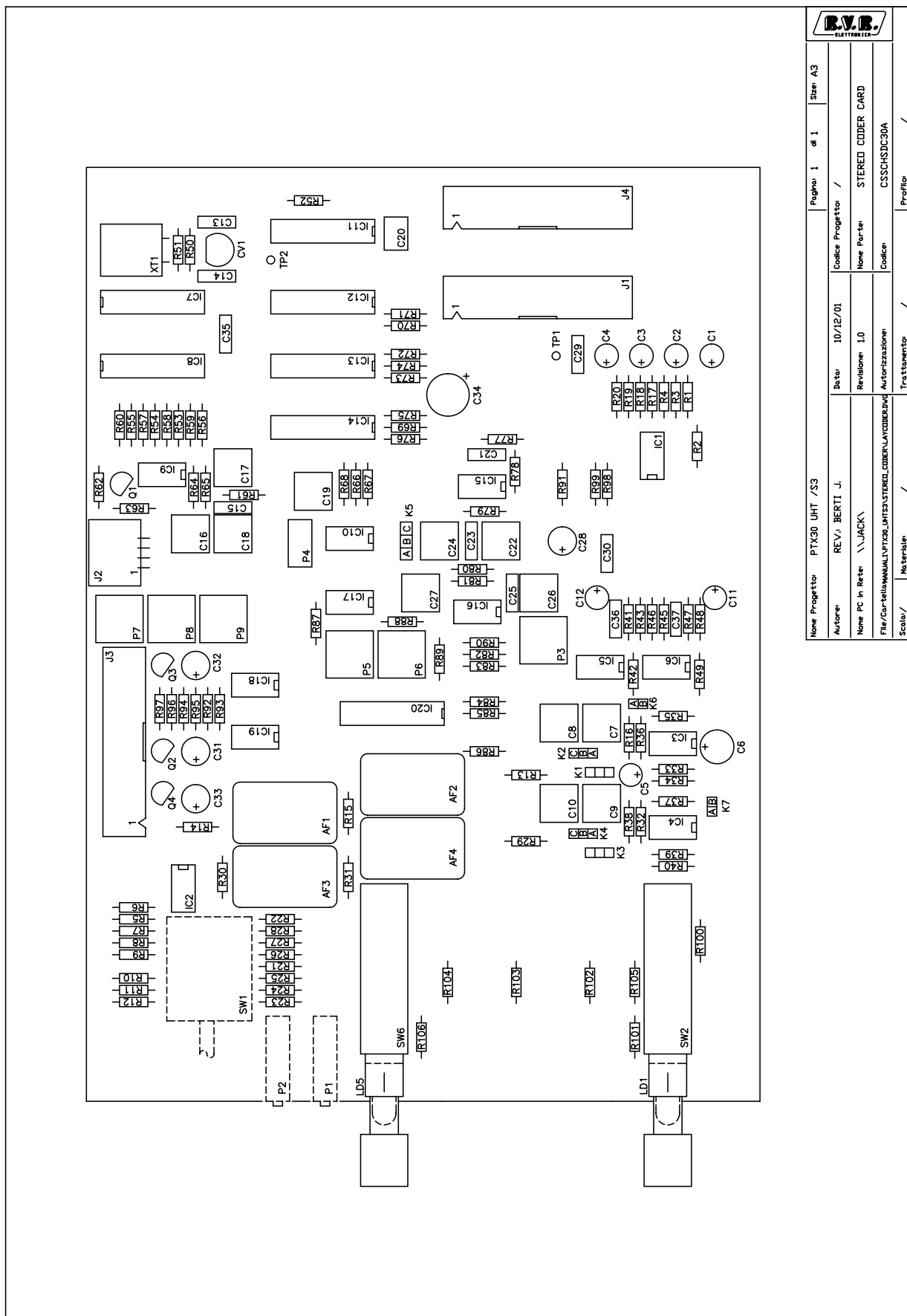




SLSDC30A002 Bill Of Materials Page1

Item	Quantity	Reference	Part
1	1	COD1	IRV30CT
2	7	C1, C25, C26, C27, C45, C46, C47	10uF
3	18	C2, C5, C10, C11, C12, C13, C20, C21, C23, C28, C29, C32, C37, C38, C43, C44, C49, C52	0.1uF
4	4	C3, C4, C48, C54	47uF
5	6	C6, C7, C8, C9, C31, C53	100uF
6	2	C17, C14	1nF
7	2	C18, C15	2n2
8	2	C19, C16	100pF
9	3	C22, C24, C36	2.2uF
10	1	C30	220uF
11	3	C33, C34, C35	10nF
12	2	C39, C40	47pF
13	1	C41	CV40pF
14	1	C42	CV20pF
15	2	C50, C51	22pF
16	2	D1, D5	LED- G5
17	9	SW2, R2, D2, SW3, R3, D3, SW4, R4, D4	NC
18	7	D6, D7, D8, D10, D11, D12, D13	1N4148
19	1	D9	4V7
20	6	FIX1, FIX2, FIX3, FIX4, FIX5, FIX6	FIX35
21	1	HY1	IRV30FT
22	2	JP1, JP2	CN26PD
23	1	JP3	CN10PD
24	13	JP4, JP5, JP6, JP7, JP8, JP9, JP10, JP11, JP12, JP13, JP15, JP16, JP17	STM03S
25	1	JP18	JSM03
26	4	J1, J3, J5, J6	JSM0
27	3	J2, J4, J7	JSMDC
28	2	Q1, Q6	BC547
29	4	Q3, Q4, Q5P, Q7	BC557
30	2	RV4, RV1	1K
31	2	RV2, RV3	20K
32	1	RV5	5K
33	2	RV8, RV6	50K
34	1	RV7	10K
35	2	R1, R5	1K8
36	45	R6, R7, R19, R26, R31, R32, R33, R34, R37, R38, R39, R40, R51, R52, R53, R61, R62, R63, R64, R66, R71, R72, R73, R75, R77, R82, R83, R84, R85, R86, R87, R88, R91, R92, R93, R94, R97, R99, R105, R107, R108, R113, R125, R126, R129	10K0
37	3	R8, R106, R114	1K0
38	4	R9, R12, R13, R16	14K7
39	17	R10, R11, R14, R15, R17, R21, R24, R28, R41, R42, R48, R50, R59, R60, R65, R74, R90	4K99

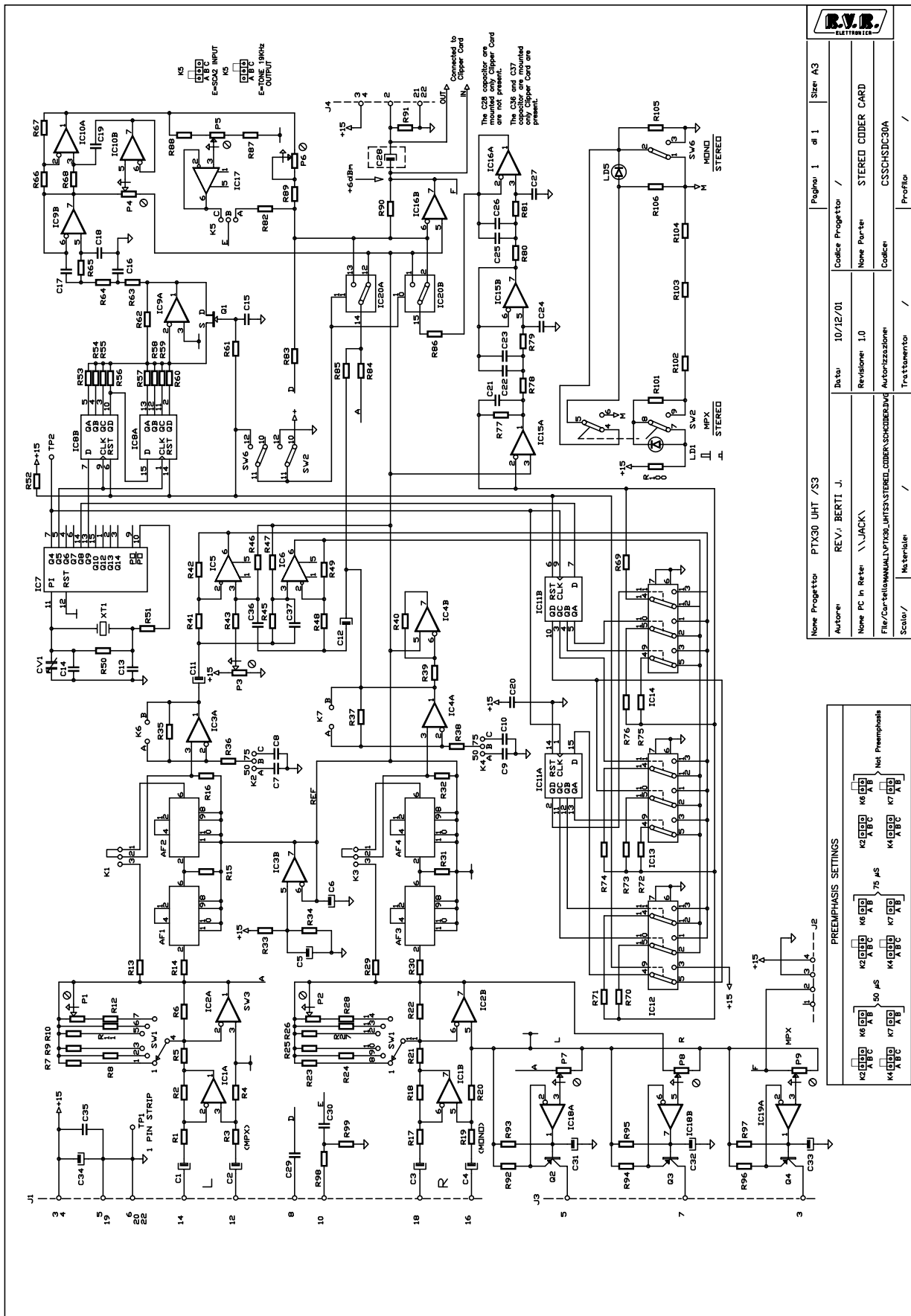
40	3	R18, R25, R58	14K0
41	2	R27, R20	7K15
42	2	R29, R22	2K49
43	2	R30, R23	1K78
44	2	R35P, R36	82K5
45	2	R45, R43	22K1
46	2	R46, R44	680H0
47	3	R47, R49, R81	470K0
48	3	R54, R55, R115	8K20
49	3	R56, R57, R116	39K0
50	3	R67, R68, R69	49K9
51	1	R70	124K0
52	3	R76, R95, R96	47K0
53	3	R78, R79, R80	22K0
54	1	R89	4K42
55	3	R98, R100, R112	2K20
56	1	R101	3K30
57	2	R102, R109	100K0
58	1	R103	56K0
59	1	R104	2M20
60	2	R117, R118	604H0
61	4	R119, R120, R122, R123	10H0
62	2	R127, R128	1M0
63	2	SW1, SW5	SWWP4_2
64	1	SW6	SW5940P
65	18	TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18	TP
66	7	U1, U2, U3, U5, U6, U10, U13	TL072
67	3	U4, U8, U9	4053
68	2	U11, U7	LM393
69	1	U12	CA3096
70	1	U14	LM358N



Nome Progetto: PTX30 UHT /S3		Pagina: 1	di 1	Size: A3
Autore: REV. BERTI J.	Data: 10/12/01	Codice Progetto: /		
Nome PC in Rete: \JACK\	Revisione: 1.0	Nome Parte: STEREO CODER CARD		
File/Cartella: \MULTI\PTX30_UHT\STEREO_CODER_CARD\CODER.DWG	Autore: /	Codice: CSSCHSDC30A		
Scala: /	Modulo: /	Testamento: /		
		Profilo: /		

Versione precedente, solo per riferimento

Former version, for reference only



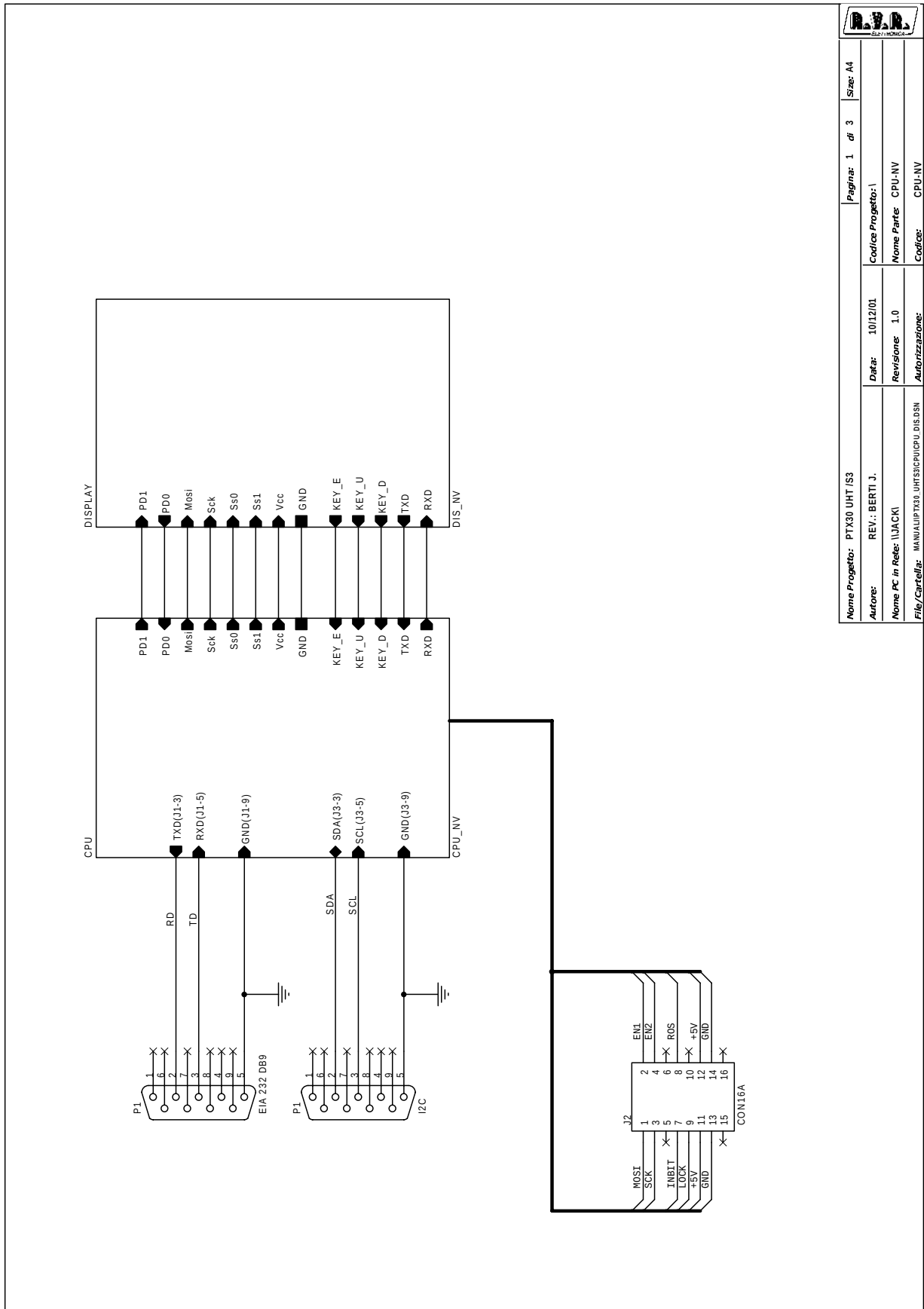
PTX30-UHT-S

Bill Of Materials

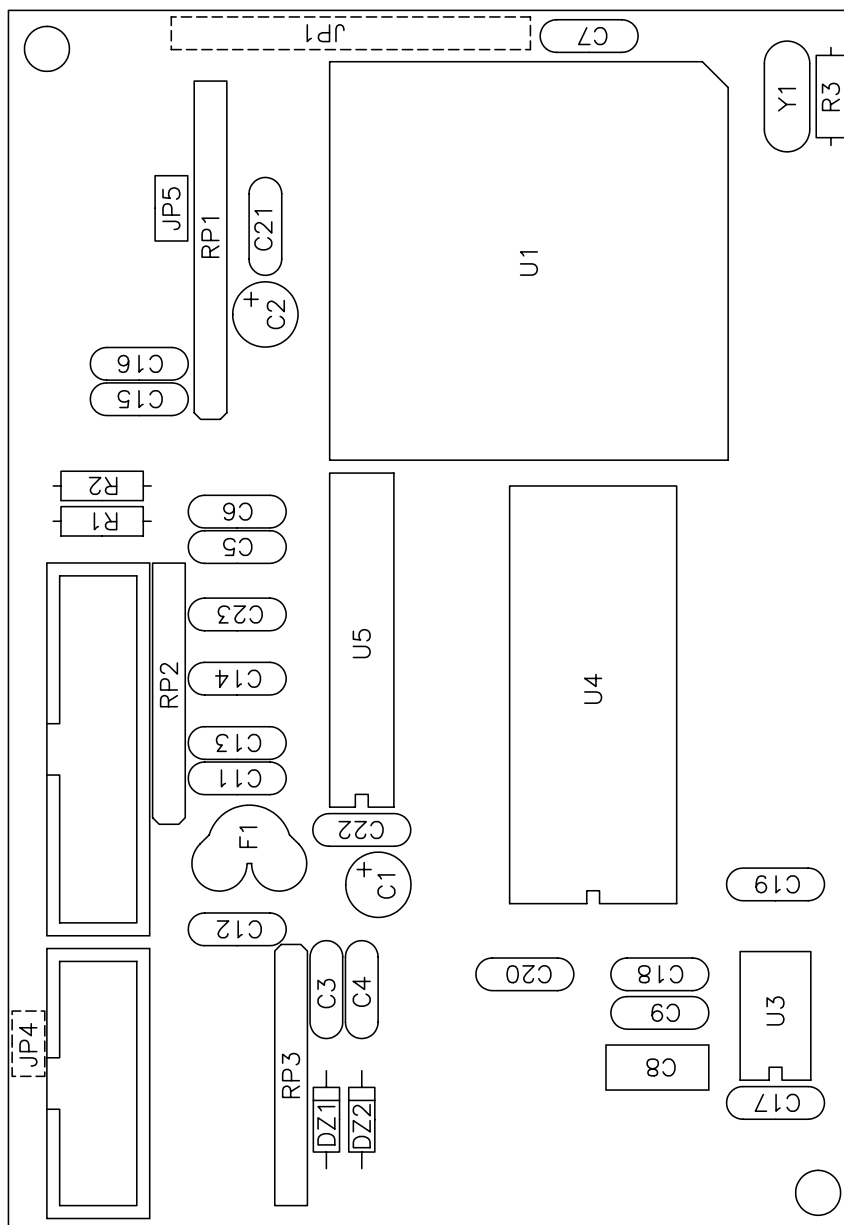
Page 1

Item	Quantity	Reference	Part	Description	Part Order Code
1	1	R98	100	RESISTOR 1/4W 5%	
2	5	R46, R47, R101, R105, R106	200 1%	RESISTOR 1/4W 1%	
3	1	R51	330	RESISTOR 1/4W 5%	
4	2	R78, R79	464 1%	RESISTOR 1/4W 1%	
5	1	R87	499 1%	RESISTOR 1/4W 1%	
6	2	R36, R38	750 1%	RESISTOR 1/4W 1%	
7	1	R100	1K	RESISTOR 1/4W 5%	
8	1	R45	1K13 2%	RESISTOR 1/4W 2%	
9	4	R12, R28, R80, R81	1K78 1%	RESISTOR 1/4W 1%	
10	5	R5, R11, R21, R27, R85	2K49 1%	RESISTOR 1/4W 1%	
11	6	R62, R63, R64, R65, R66, R67	3K83 1%	RESISTOR 1/4W 1%	
12	1	R84	4K42 1%	RESISTOR 1/4W 1%	
13	2	R14, R30	4K64 1%	RESISTOR 1/4W 1%	
14	10	R3, R4, R10, R19, R20, R26, R39, R40, R86, R90	5K11 1%	RESISTOR 1/4W 1%	
15	2	R13, R29	5K90 1%	RESISTOR 1/4W 1%	
16	2	R9, R25	7K15 1%	RESISTOR 1/4W 1%	
17	2	R16, R32	7K50 1%	RESISTOR 1/4W 1%	
18	1	R88	9K09 1%	RESISTOR 1/4W 1%	
19	9	R8, R24, R33, R34, R41, R48, R92, R94, R96	10K0 1%	RESISTOR 1/4W 1%	
20	1	R99	10K	RESISTOR 1/4W 5%	
21	1	R77	12K7 1%	RESISTOR 1/4W 1%	
22	6	R1, R2, R7, R17, R18, R23	14K7 1%	RESISTOR 1/4W 1%	
23	1	R52	15K	RESISTOR 1/4W 5%	
24	2	R42, R49	17K8 1%	RESISTOR 1/4W 1%	
25	1	R68	20K0 1%	RESISTOR 1/4W 1%	
26	2	R35, R37	21K5 1%	RESISTOR 1/4W 1%	
27	2	R82, R83	24K9 1%	RESISTOR 1/4W 1%	
28	2	R15, R31	33K	RESISTOR 1/4W 5%	
29	1	R89	40K2 1%	RESISTOR 1/4W 1%	
30	1	R91	47K	RESISTOR 1/4W 5%	
31	4	R56, R57, R72, R73	64K9 1%	RESISTOR 1/4W 1%	
32	4	R55, R58, R71, R74	75K0 1%	RESISTOR 1/4W 1%	
33	1	R50	100K	RESISTOR 1/4W 5%	
34	4	R54, R59, R70, R75	115K 1%	RESISTOR 1/4W 1%	
35	2	R43, R61	150K	RESISTOR 1/4W 5%	
36	4	R53, R60, R69, R76	324K 1%	RESISTOR 1/4W 1%	
37	3	R93, R95, R97	470K	RESISTOR 1/4W 5%	
38	2	R6, R22	1M	RESISTOR 1/4W 5%	
39	1	P5	TC1K	TR. REG. V. CERMET	
40	2	P3, P6	TC20K	TR. REG. V. CERMET	
41	3	P7, P8, P9	TC50K	TR. REG. V. CERMET	
42	2	P1, P2	M20K	TRIMMER MULTIGIRI	
43	1	P4	TM5K	TR. MULTIGIRI REG.V.	
44	1	CV1	T8PF	TRIMMER CAPACITOR	
45	1	C14	8P2	CERAMIC CAP. NP0	
46	1	C23	27PF	CERAMIC CAP. NP0	
47	3	C13, C21, C25	47PF	CERAMIC CAP. NP0	
48	2	C36, C37	68PF	CERAMIC CAP. NP0	
49	1	C27	100PFP 1%	POLYESTER CAP. 1%	
50	2	C18, C19	150PFP 1%	POLYESTER CAP. 1%	
51	3	C16, C24, C26	1NFP 1%	POLYESTER CAP. 1%	
52	1	C22	1N5FP 1%	POLYESTER CAP. 1%	

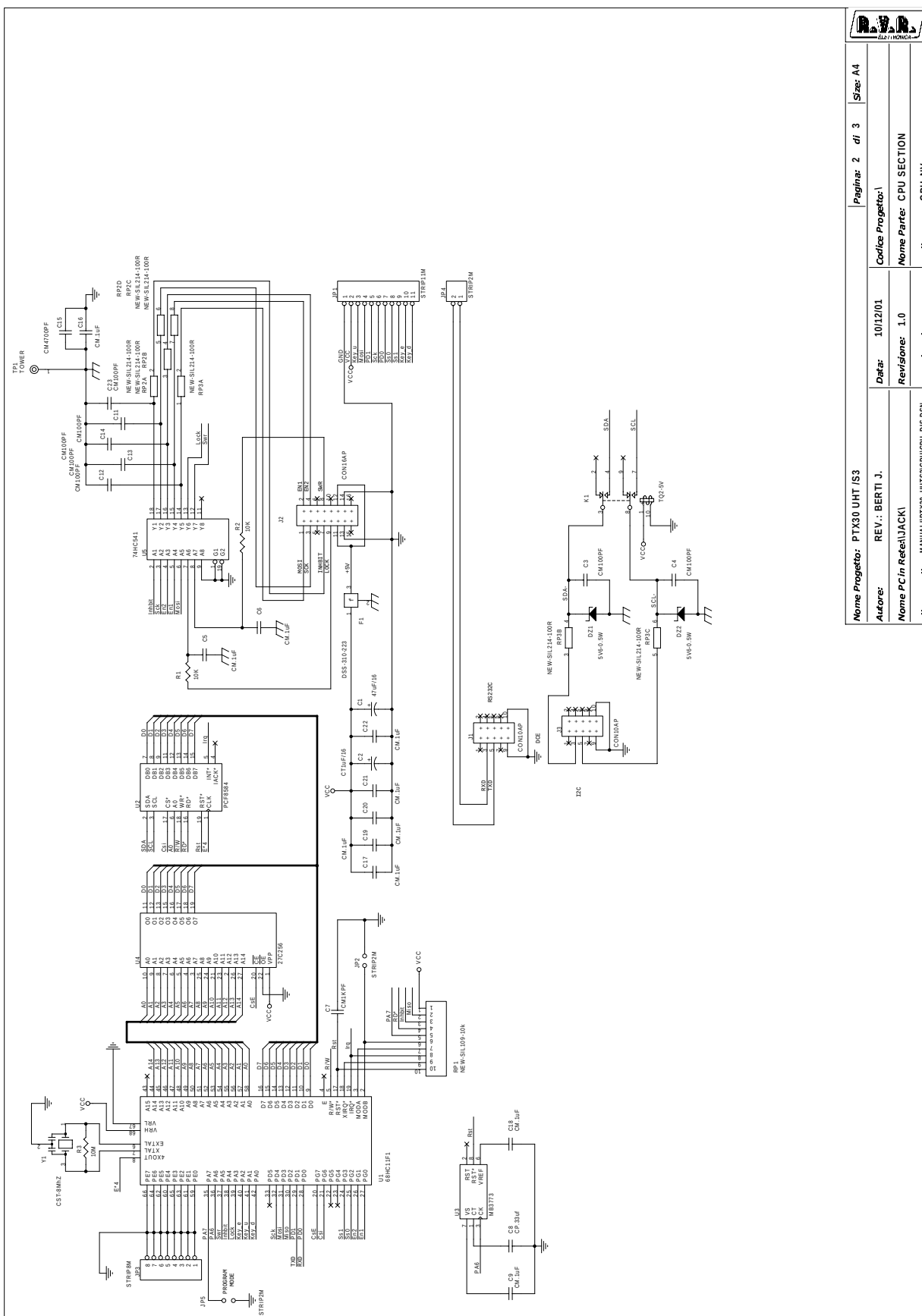
53	2	C7, C9	2N2P 1%	POLIELSTER CAP.
54	1	C17	2N7P 1%	POLIELSTER CAP. 1%
55	2	C8, C10	3N3P 1%	POLIELSTER CAP. 1%
56	4	C15, C20, C29, C30	0.1UF	CERAMIC CAP.
57	1	C35	0.47UF	POLIELSTER CAP.
58	3	C31, C32, C33	2.2UF	ELECTROLYTIC CAP.
59	1	C5	10UF	ELECTROLYTIC CAP.
60	7	C1, C2, C3, C4, C6, C11, C12	100UF	ELECTROLYTIC CAP.
61	2	C28, C34	220UF	ELECTROLYTIC CAP.
62	4	AF1, AF2, AF3, AF4	LPF19K	FLP 19KHZ
63	2	TP1, TP2	1 PIN STRIP	STRIP M 1 PIN
64	2	K6, K7	2 PIN STRIP	STRIP M P2.54 2PIN
65	5	K1, K2, K3, K4, K5	3 PIN STRIP	STRIP M P2.54 3PIN
66	1	J2	4 PIN STRIP	STRIP M P2.54 4PIN
67	3	J1, J4, J6	26 PIN CONN.	CONN. M 2*13 P2.54
68	1	XT1	Q9.728MHZ	CRYSTAL
69	1	SW1	SW2V6P	COMM. 2V. 6P. FEME
70	2	SW2, SW6	SWSPDT-4	COMM. 4 VIE 2 POS
71	2	LD1, LD5	LED-G5	GREEN LED DIODE
72	3	Q2, Q3, Q4	BC557	PNP TRANSISTOR
73	1	Q1	MPF4393	JFET SWITC. N-CH.
74	2	IC18, IC19	LM393	DOUBLE COMPARATOR
75	8	IC1, IC2, IC3, IC4, IC9, IC10, IC15, IC16	LF353	DOUBLE OP. AMP.
76	3	IC5, IC6, IC17	LF356	JPFET IN. OP. AMPL.
77	2	IC8, IC11	4015	SHIFT REGISTER
78	4	IC12, IC13, IC14, IC20	4053	TRIPLE 2CH.AN.MUL.PLEX
79	1	IC7	4060	CMOS BIN DIVIDER
80	3	R102, R103, R104	WIRE	COLLEGAMENTO A FILO



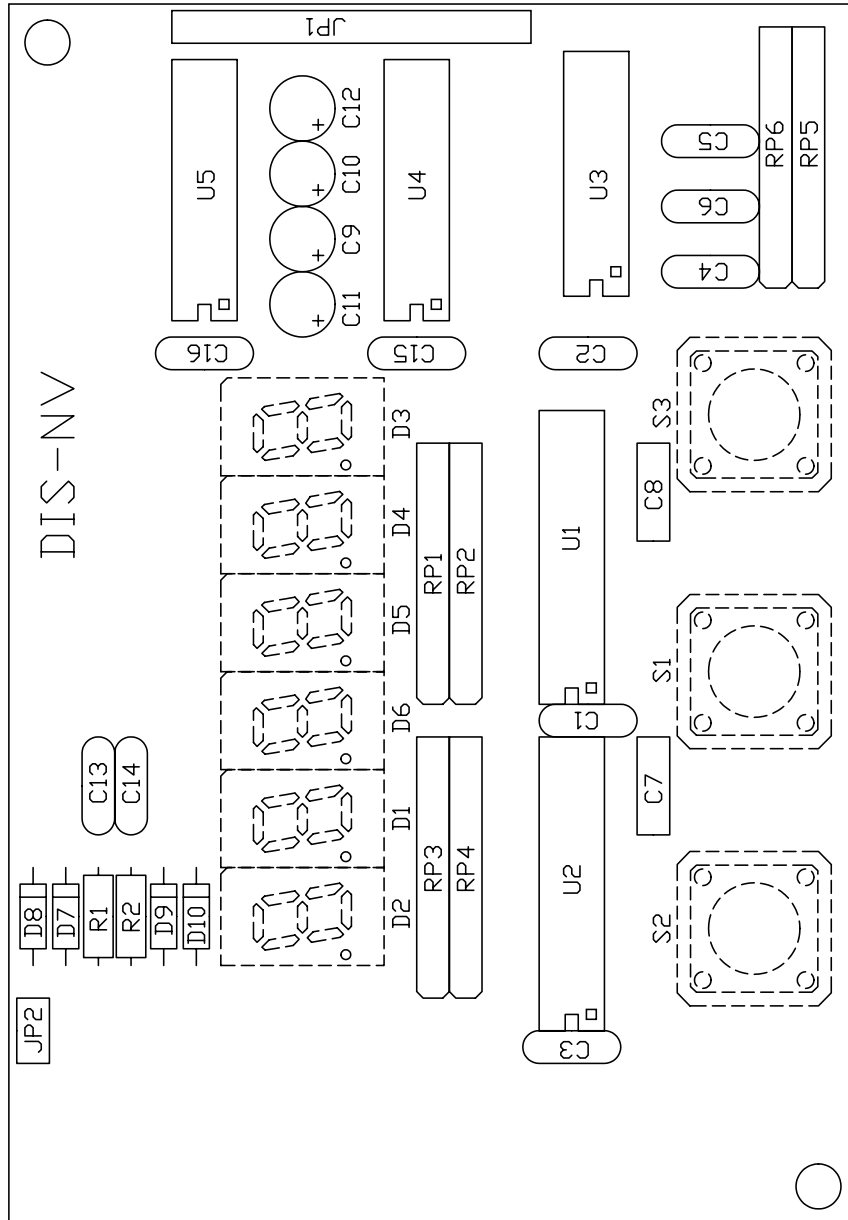
R.V.R. ELETTRONICA		Pagina: 1	di 3	Size: A4
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Autore: REV.: BERTI J.		Data: 10/12/01		
Nome PC in Rete: \\JACKI		Revisione: 1.0		
File/Cartella: MANUALE PTX30 UHTS3CPU/CPU DIS.DSN		Autore: CPU-NV		
		Codice: CPU-NV		



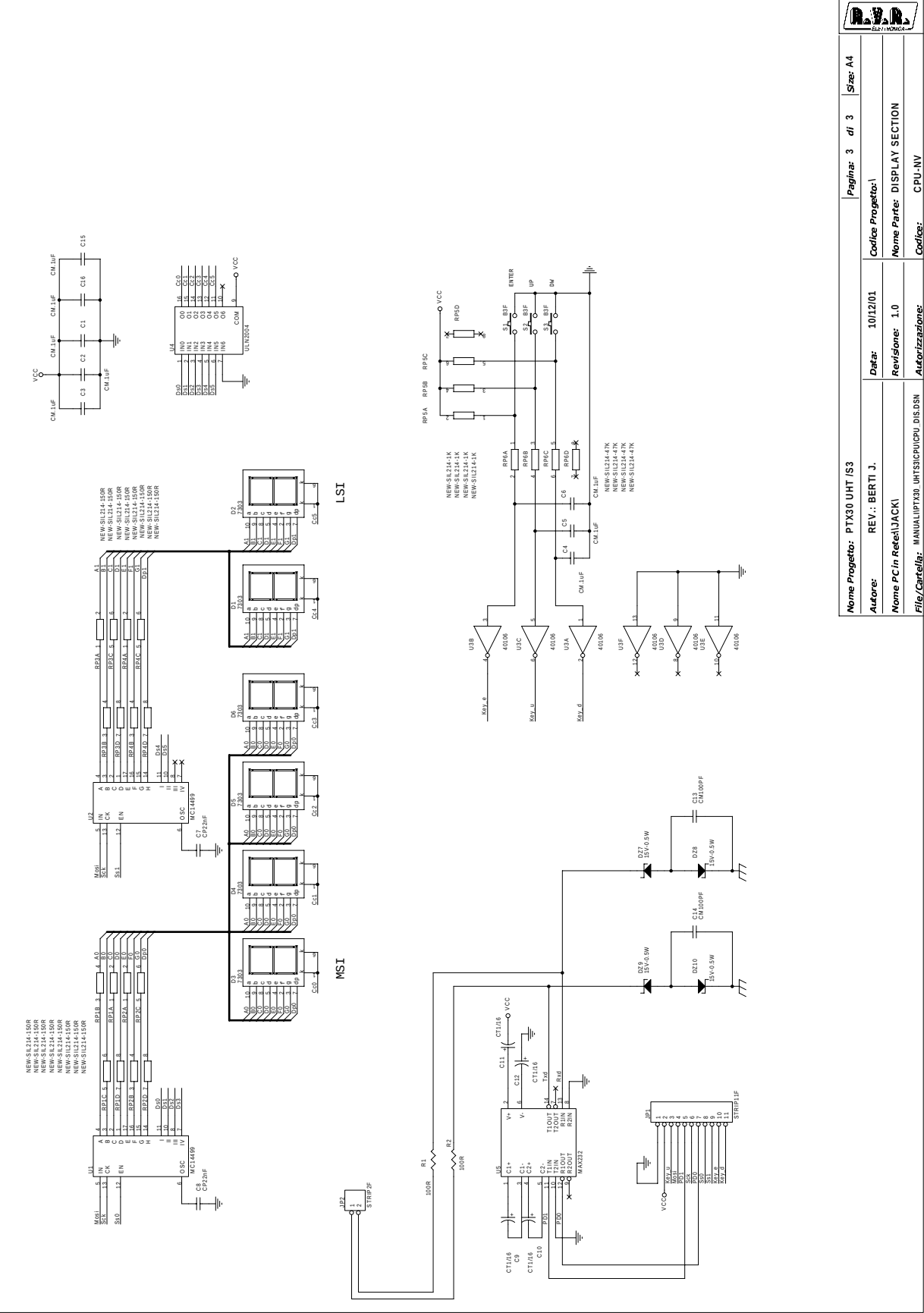
Nome Progetto: PTX30 UHT /S3		Pagina: 2 di 2		Size: A4
Autore:	REV.: BERTI J.	10/12/01	Condice Progetto:	/
Nome PC in Rete:	\\JACK\	Revisione: 1.0	Nome Parte:	CPU SECTION
File/Caricelli:	MANUAL\PTX30_UHT\SS3\CPU\LAVER.DWG	Autore:	Condice:	CPU-NV
Scalari:	Materiali:	Totale componenti:	/	



Item	Quantity	Reference	Part
1	1	C1	47UF/16
2	1	C2	CT1UF/16
3	7	C3, C4, C11, C12, C13, C14, C23	CM100PF
4	10	C5, C6, C9, C16, C17, C18, C19, C20, C21, C22	CM.1UF
5	1	C7	CM1KPF
6	1	C8	CP.33UF
7	1	C15	CM4700PF
8	2	DZ1, DZ2	5V6-0.5W
9	1	F1	DSS-310-223
10	1	JP1	STRIP11M
11	3	JP2, JP4, JP5	STRIP2M
12	1	JP3	STRIP8M
13	2	J1, J3	CON10AP
14	1	J2	CON16AP
15	1	K1	TQ2-5V
16	1	RP1	NEW-SIL109-10K
17	2	RP2, RP3	NEW-SIL214-100R
18	2	R1, R2	10K
19	1	R3	10M
20	1	TP1	TOWER
21	1	U1	68HC11F1
22	1	U2	PCF8584
23	1	U3	MB3773
24	1	U4	27C256
25	1	U5	74HC541
26	1	Y1	CST-8MHZ



Nome Progetto		PTX30 UHT /S3		Pagina 2 di 2		Size A4	
Autore	REV./	BERTI J.	Data	10/12/01	Codice Progetto	/	
Nome PC in Rete	\\JACK\		Revisione	1.0	Nome Parte	DISPLAY SECTION	
File/Cartella	MANUALI\PTX30_UHTS3_CPU\LAYDISP.DWG		Autorizzazione	CPU-NV		Codice	
Scale/	Metri/	/	Trattamento	/	Profilo	/	



Nome Progetto: PTX30 UHT /S3		Pagina: 3	di 3	Size: A4
Autore: REV.: BERTI J.	Data: 10/12/01	Codice Progetto: 1		
Nome PC in Rete: JACK	Revisione: 1.0	Nome Parte: DISPLAY SECTION		
File/Cartella: MANUALPTX30_UHTS3CPU/CPU DIS.DSN	Autore: CPU-NV	Codice: CPU-NV		

DISPLAY CPU NEW VERSION

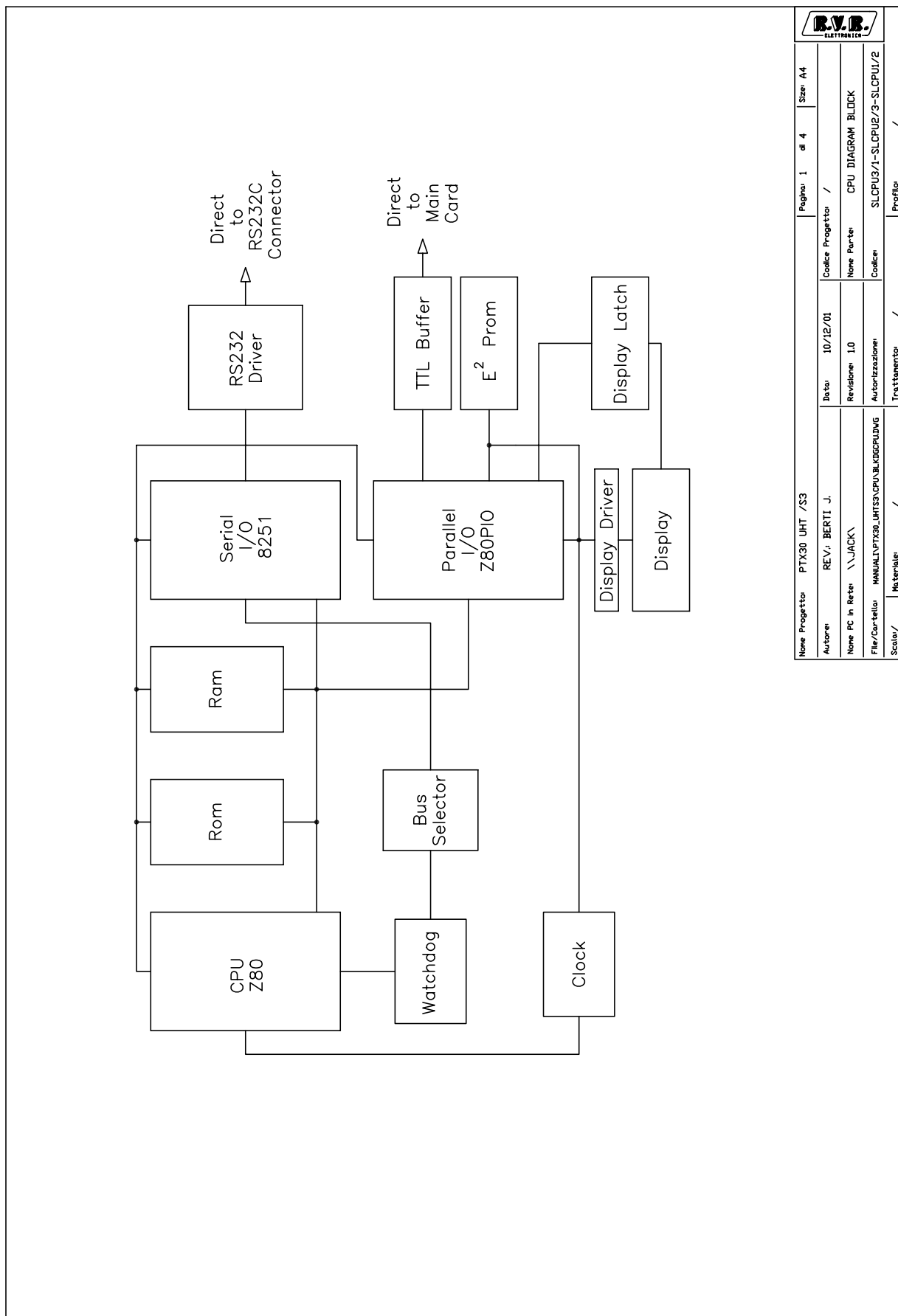
Bill Of Materials

Page 1

Item	Quantity	Reference	Part
1	8	C1, C2, C3, C4, C5, C6, C15, C16	CM.1UF
2	2	C7, C8	CP22NF
3	4	C9, C10, C11, C12	CT1/16
4	2	C13, C14	CM100PF
5	4	DZ7, DZ8, DZ9, DZ10	15V-0.5W
6	6	D1, D2, D3, D4, D5, D6	7303
7	1	JP1	STRIP11F
8	1	JP2	STRIP2F
9	4	RP1, RP2, RP3, RP4	NEW-SIL214-150R
10	1	RP5	NEW-SIL214-1K
11	1	RP6	NEW-SIL214-47K
12	2	R1, R2	100R
13	3	S1, S2, S3	B3F
14	2	U1, U2	MC14499
15	1	U3	40106
16	1	U4	ULN2004
17	1	U5	MAX232

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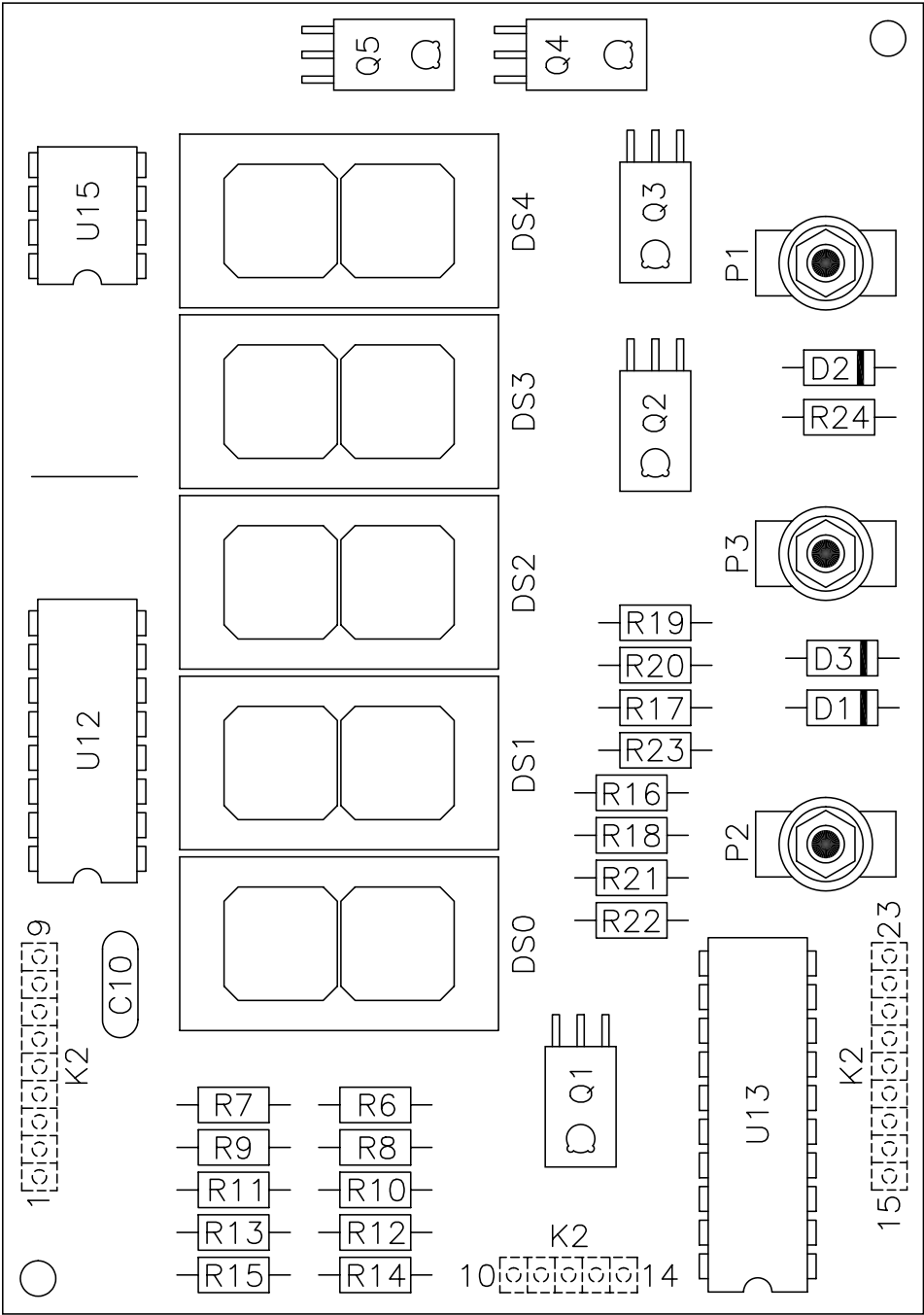
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Nome Progetto				Pagina	1	di	4	Size	A4
Autore				Data		Codice Progetto		CPU DIAGRAM BLOCK	
Nome PC in Rete				Revisione		Nome Parte		SLCPU3/1-SLCPU2/3-SLCPU2/2	
File/Cartella				Autorizzazione		Codice		Profilo	
Scala				Materiale		Trattamento		/	

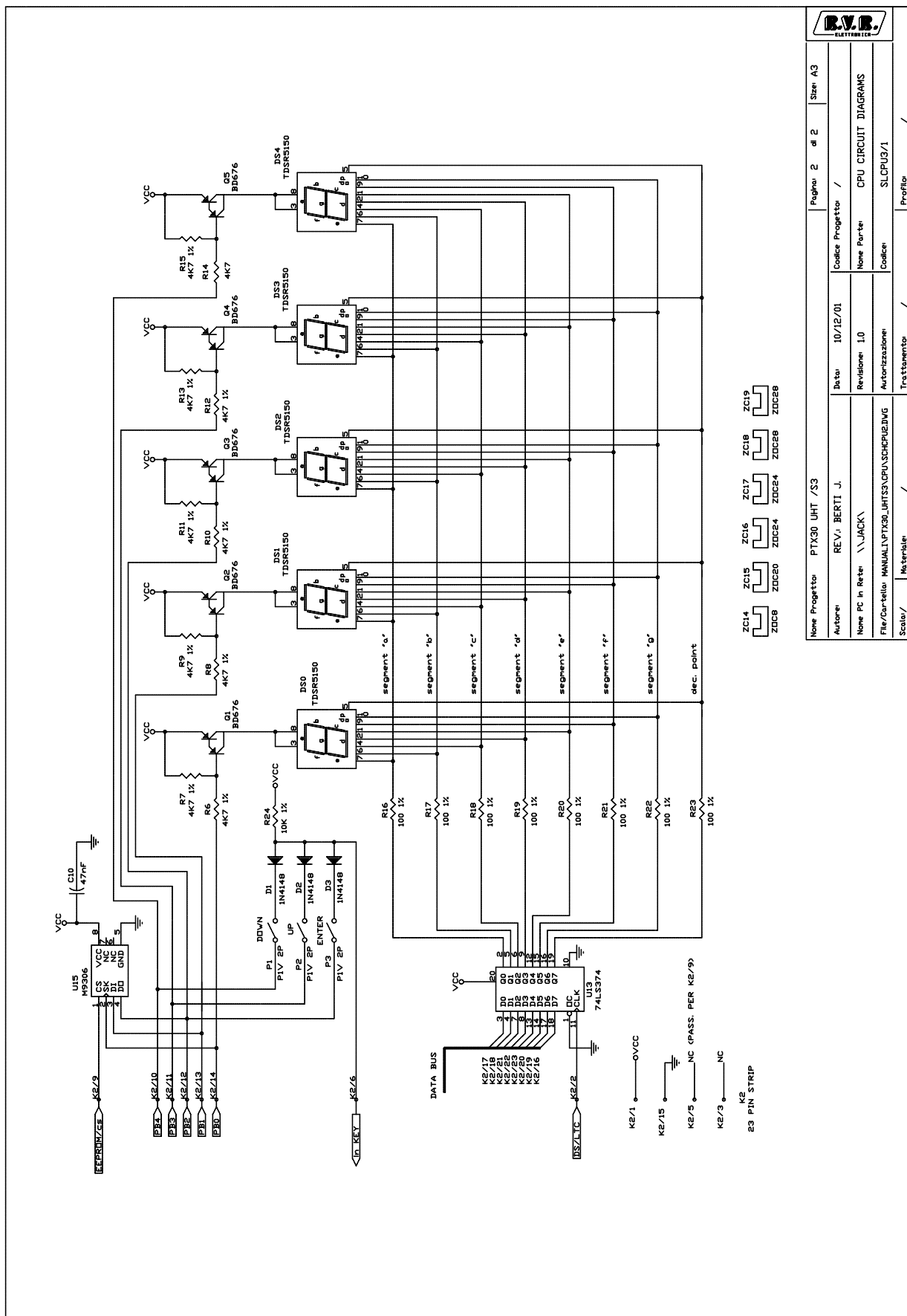
Versione precedente, solo per riferimento

Former version, for reference only



P.V.E. ELTETRONICA									
Nome Progetto		PTX30 UHT /S3		Pagina		2 di 4		Size A3	
Autore		REV.: BERTI J.		Data		10/12/01		Codice Progetto /	
Nome PC in Rete		\\JACK		Revisione		1.0		Nome Parte C.P.U. COMPONENT	
File/Cartella		MANUALPTX30_UHTS3CPU1AYCPU1DVG		Autorizzazione		/		Codice SLCPU3/1	
Scala/		Materiale /		Trattamento		/		Profilo /	

Versione precedente, solo per riferimento
Former version, for reference only



Versione precedente, solo per riferimento

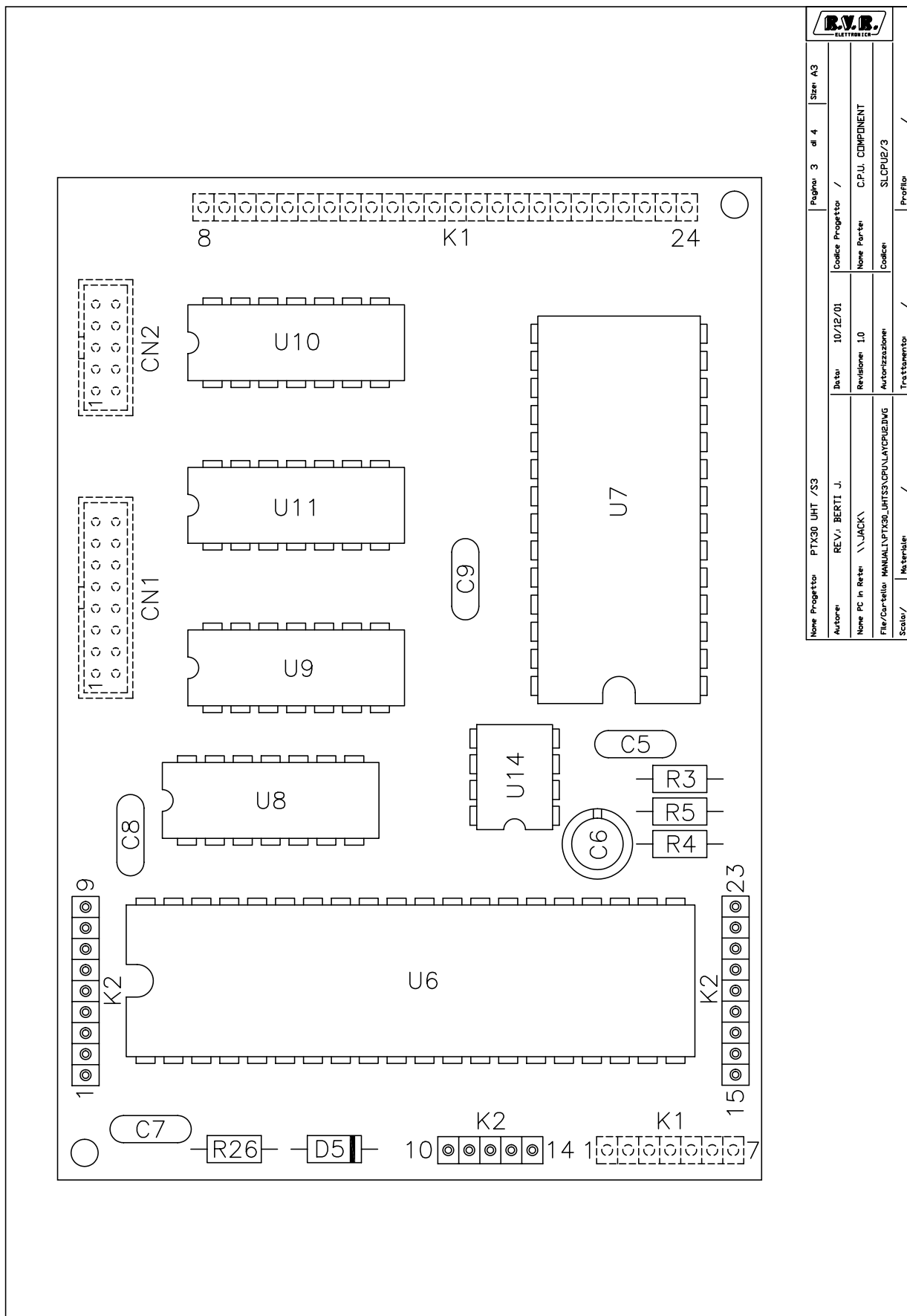
Former version, for reference only

CONTROL CPU (DISPLAY)

Bill Of Materials

Page 1

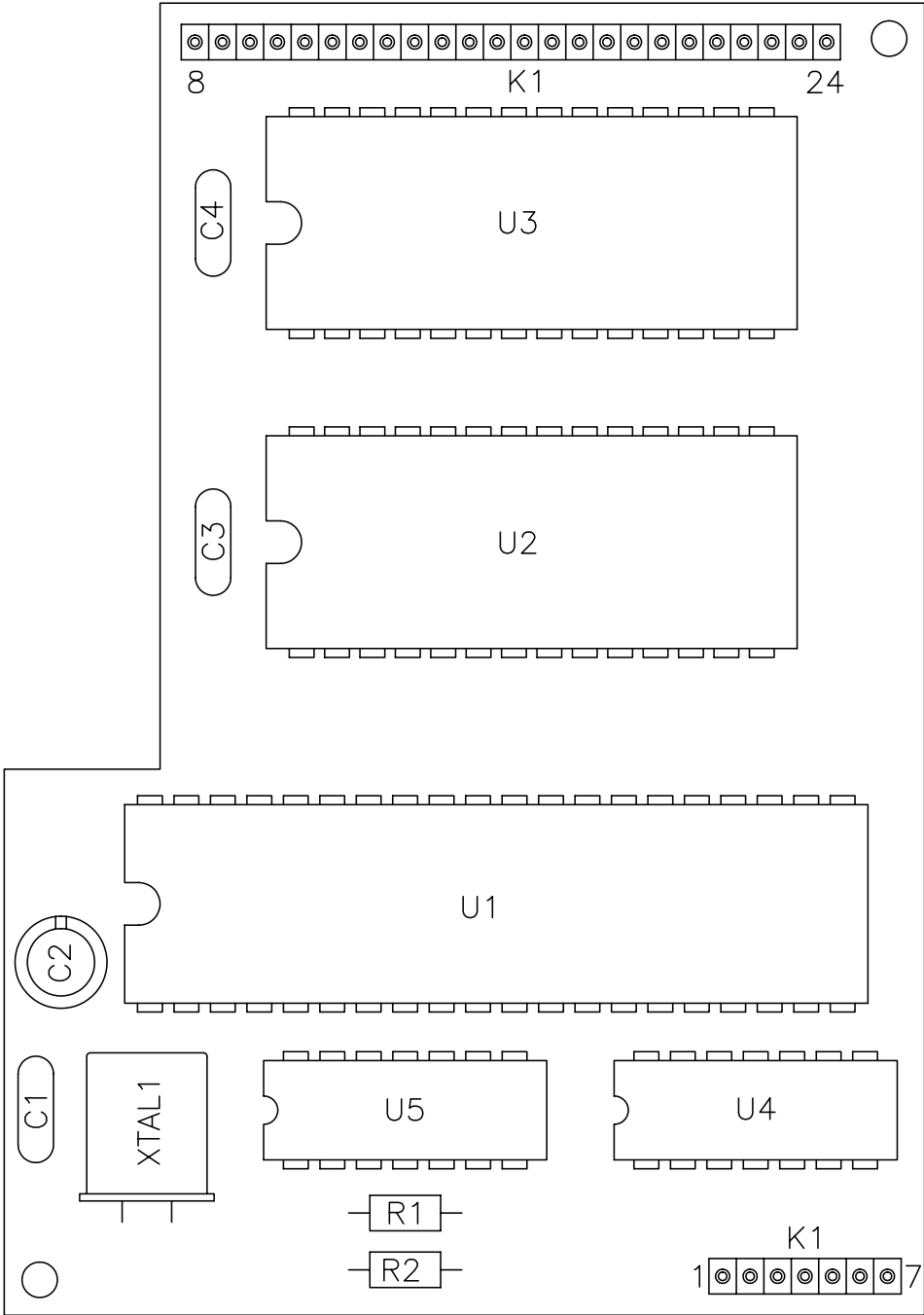
Item	Quantity	Reference	Part	Description	Part Order Code
1	8	R16, R17, R18, R19, R20, R21, R22, R23	100 1%	RESISTOR 1/4W 1%	RSM1/4FH0100
2	1	R14	4K7	RESISTOR 1/4W 5%	RSC1/4JK04, 7
3	9	R6, R7, R8, R9, R10, R11, R12, R13, R15	4K7 1%	RESISTOR 1/4W 1%	RSM1/4FK04, 7
4	1	R24	10K 1%	RESISTOR 1/4W 1%	RSM1/4FK0010
5	1	C10	47NF	CERAMIC CAPACITOR	CKM473BK600P
6	1	K2	23 PIN STRIP	STRIP M P 2.54 23PIN CNTSTRIPMCS	
7	3	P1, P2, P3	P1V 2P	PULS. 1 VIA 2 POS	PLS1V11M03CS
8	3	D1, D2, D3	1N4148	SILICON DIODE	DIS1N4148
9	5	DS1, DS2, DS3, DS4, DS0	TDSR5150	7 SEGM. DISPLAY	DSPAC14R0
10	5	Q1, Q2, Q3, Q4, Q5	BD676	PNP DARLINGTON	TRNBD676
11	1	U13	74LS374	TTL LATCH	CID74LS374
12	1	U15	M9306	EEPROM 256BIT	CIDM9306
13	1	ZC14	ZOC8	ZOCCOLO INT. 8 PIN ZIN08	
14	1	ZC15	ZOC20	ZOCCOLO INT.20 PIN ZIN20	
15	2	ZC16, ZC17	ZOC24	ZOCCOLO INT.24 PIN ZIN24	
16	2	ZC18, ZC19	ZOC28	ZOCCOLO INT.28 PIN ZIN28	



Nome Progetto: PTX30 UHT /S3		Pagina: 3	di 4	Size: A3
Autore: REV. BERTI J.	Data: 10/12/01	Codice Progetto: /		
Nome PC in Rete: \JACK\	Revisione: 1.0	Nome Parte: C.P.U. COMPONENT		
File/Cartella: MANUAL\PTX30_UHT\S3\CPULAYCPU2JVG	Autore: /	Codice: SLCPU2/3		
Scala: /	Materiali: /	Trattamento: /	Profilo: /	

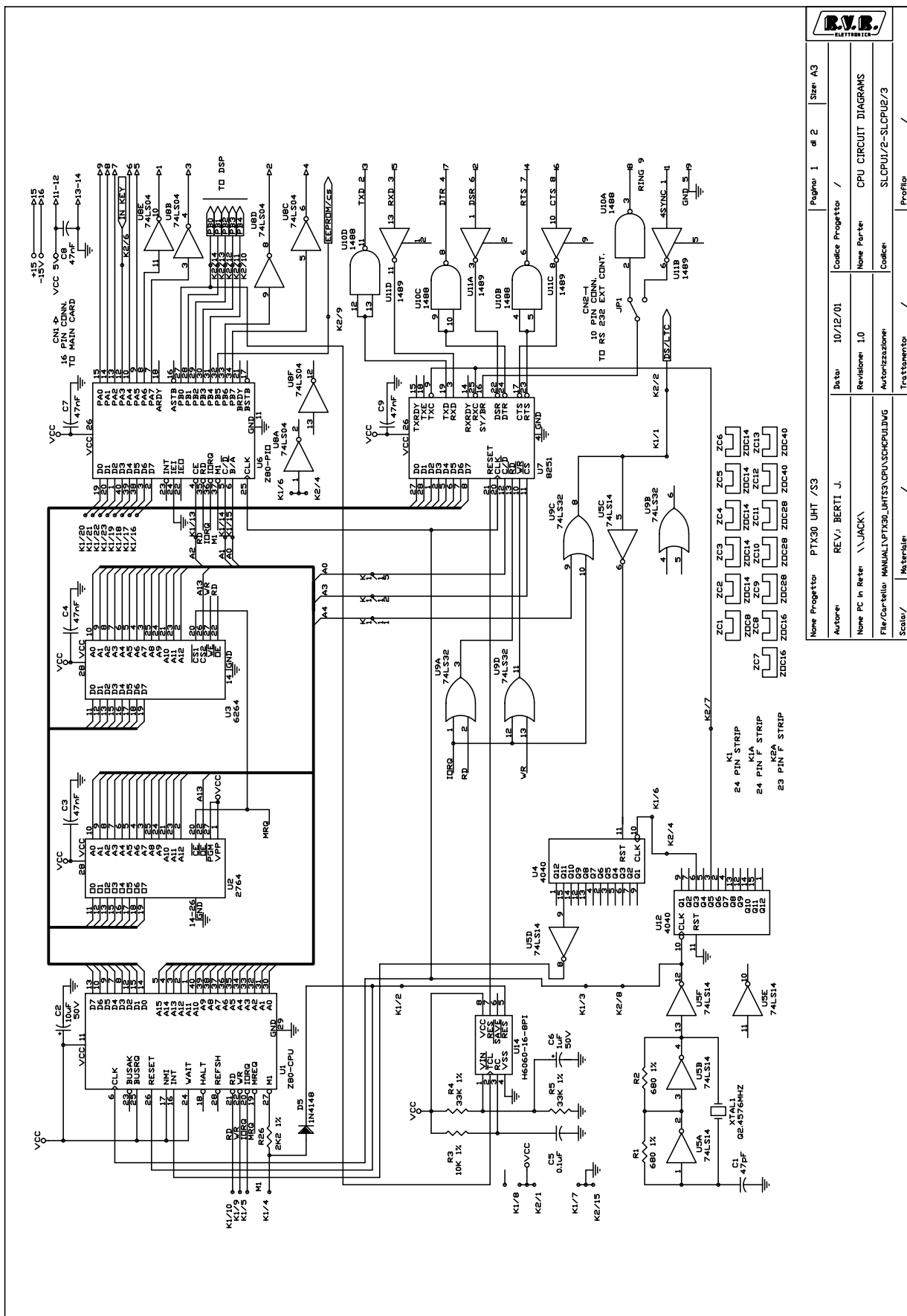
Versione precedente, solo per riferimento

Former version, for reference only



P.V.E. ELETTROTECH										
Nome Progetto		PTX30 UHT /S3		Pagina		4	di	4	Size	A3
Autore		REV.: BERTI J.		Data:		10/12/01		Codice Progetto		/
Nome PC in Rete		\\JACK\		Revisione		1.0		Nome Parte		C.P.U. COMPONENT
File/Cartella		MANUAL\PTX30_UHT\S3\UPUNLAYCPU3.DWG		Autore/azione				Codice		SLCPU1/2
Scala/		/		Trattamento		/		Profilo		/
Materiale										

Versione precedente, solo per riferimento
Former version, for reference only



Versione precedente, solo per riferimento

Former version, for reference only

CONTROL CPU (CPU)

Bill Of Materials

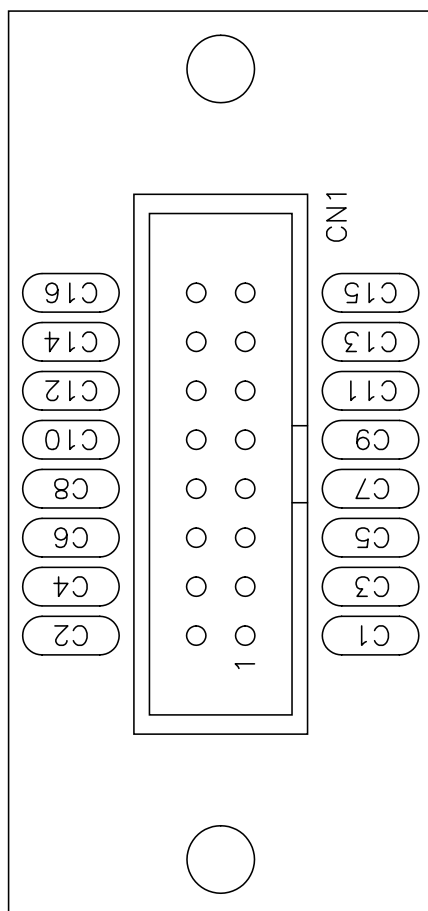
Page 1

Item	Quantity	Reference	Part	Description	Part Order Code
1	2	R1, R2	680 1%	RESISTOR 1/4W 1%	
2	1	R26	2K2 1%	RESISTOR 1/4W 1%	
3	1	R3	10K 1%	RESISTOR 1/4W 1%	
4	2	R4, R5	33K 1%	RESISTOR 1/4W 1%	
5	1	C1	47PF	CERAMIC CAP. NP0	
6	5	C3, C4, C7, C8, C9	47NF	CERAMIC CAP.	
7	1	C5	0.1UF	CERAMIC CAP.	
8	1	C6	1UF	ELECT. CAP.	
9	1	C2	10UF	ELECT. CAP.	
10	1	K1	24 PIN STRIP	STRIP M P 2.54 24P.	
11	1	K2A	23 PIN F STRIP	STRIP F P 2.54 23P.	
12	1	K1A	24 PIN F STRIP	STRIP F P 2.54 24P.	
13	1	CN2	10 PIN CONN.	CON. M 2*5 P 2.54	
14	1	CN1	16 PIN CONN.	CON. M 2*8 P 2.54	
15	1	XTAL1	Q2.4576MHZ	CRYSTAL	
16	1	D5	1N4148	SILICON DIODE	
17	1	U10	1488	LEV. SHIFTER TTL RS232	
18	1	U11	1489	LEV. SHIFTER RS232 TTL	
19	2	U4, U12	4040	CMOS DIVIDER	
20	1	U8	74LS04	TTL HEX INVERTER	
21	1	U5	74LS14	TTL HEX INV. TRIGGER	
22	1	U9	74LS32	TTL QUAD OR	
23	1	U1	Z80-CPU	CPU	
24	1	U6	Z80-PIO	PARALLEL I/O PORT	
25	1	U7	8251	SERIAL I/O PORT	
26	1	U3	6264	RAM MEMORY 8KBYTE	
27	1	U2	2764	EPROM MEMORY 8KBYTE	

28	1	U14	H6060-16-8PI	STANDALONE WATCHDOG
29	1	ZC1	ZOC8	ZOCCOLO INT. 8PIN
30	5	ZC2, ZC3, ZC4, ZC5, ZC6	ZOC14	ZOCCOLO INT. 14PIN
31	2	ZC7, ZC8	ZOC16	ZOCCOLO INT. 16PIN
32	3	ZC9, ZC10, ZC11	ZOC28	ZOCCOLO INT. 28PIN
33	2	ZC12, ZC13	ZOC40	ZOCCOLO INT. 40PIN
34	1	JP1	N.C.	NOT CONNECTED

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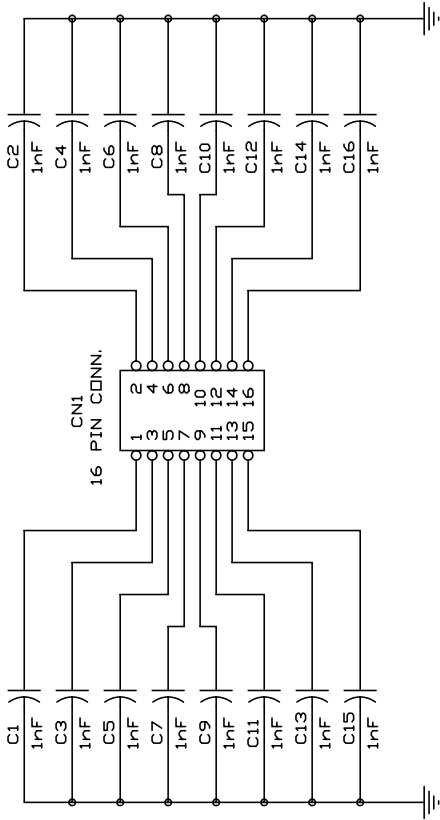
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Nome Progetto		PTX30 UHT /S3	Pagina	1	di	1	Size	A4
Autore	REV.	BERTI J.	Code	Progetto	/			
Nome PC in Rete	\\JACK\	Revisione	1.0	Nome	Parte	FILTER CARD		
File/Cartella	MANUALPTX30_UHTS3\FILTER\LAYOUT.DWG	Autore	<Code>		Code	/		
Scala	/	Materiali	/		Trattamento	/		

Versione precedente, solo per riferimento

Former version, for reference only



Nome Progetto: PTX30 UHT /S3		Pagina: 1	di 1	Size: A4
Autore:	REV.: BERTI J.	Codice Progetto: /		
Nome PC in Rete:	\\JACK\	Nome Parte: FILTER CARD		
File/Car-tella:	MANUAL\PTX30_UHTS3\FILTER\SCHFIL.TJVG	Codice: <Code>		
Scala:	Materiale: /	Trattamento: /		Profilo: /

Versione precedente, solo per riferimento
Former version, for reference only

Filter Card Circuit Diagram

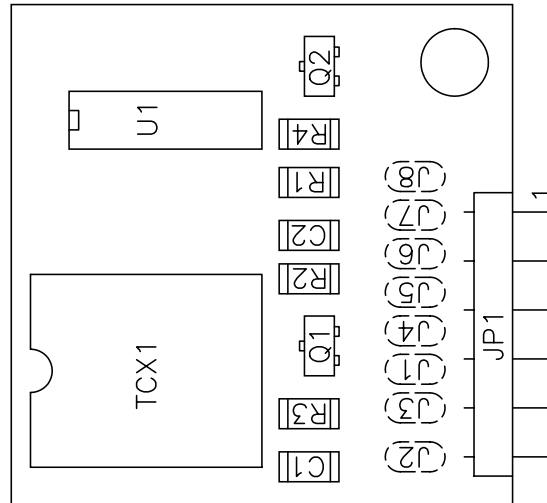
Bill Of Materials

Page 1

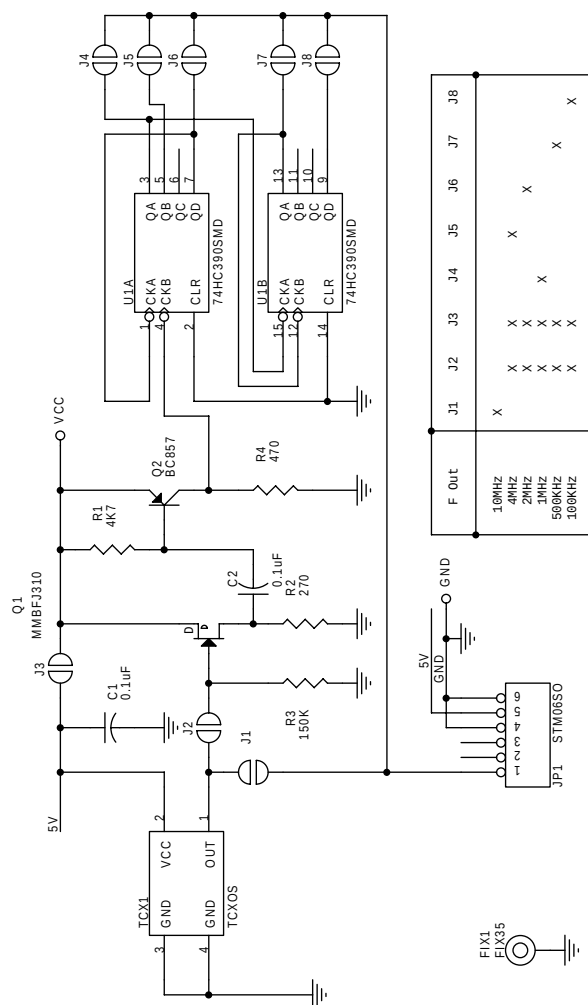
Item	Quantity	Reference	Part	Description	Part Order Code
1	16	C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16	1NF	CERAMIC CAPACITOR	
2	1	CN1	16 PIN CONN.	CONN. M 2*8 P 2.54	

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Nome Progetto		PTX30 UHT /S3		Pagina 1 di 1		Size A4	
Autore	D'ALESSIO D.	Data	10/12/01	Codice Progetto	/		
Nome PC in Rete	\\JACK\	Revisione	1.0	Nome Part	SCHEDA TCXD		
File/Cartella	MANUALI\PTX30_UHT\S3\TCXD\LAYOUT\BOM	Autorizzazione		Codice	CSTCX002		
Scala	/	Trattamento	/	Profilo	/		



		Size: A4	
Nome Progetto: PTX30 UHT /S3		Pag/nat: 1 di 1	
Autore: REV.: BERT J.		Codice Progetto: I	
Nome PC in Rete: \JAOK\		Data: 10/12/01	
		Revisione: 1.0	

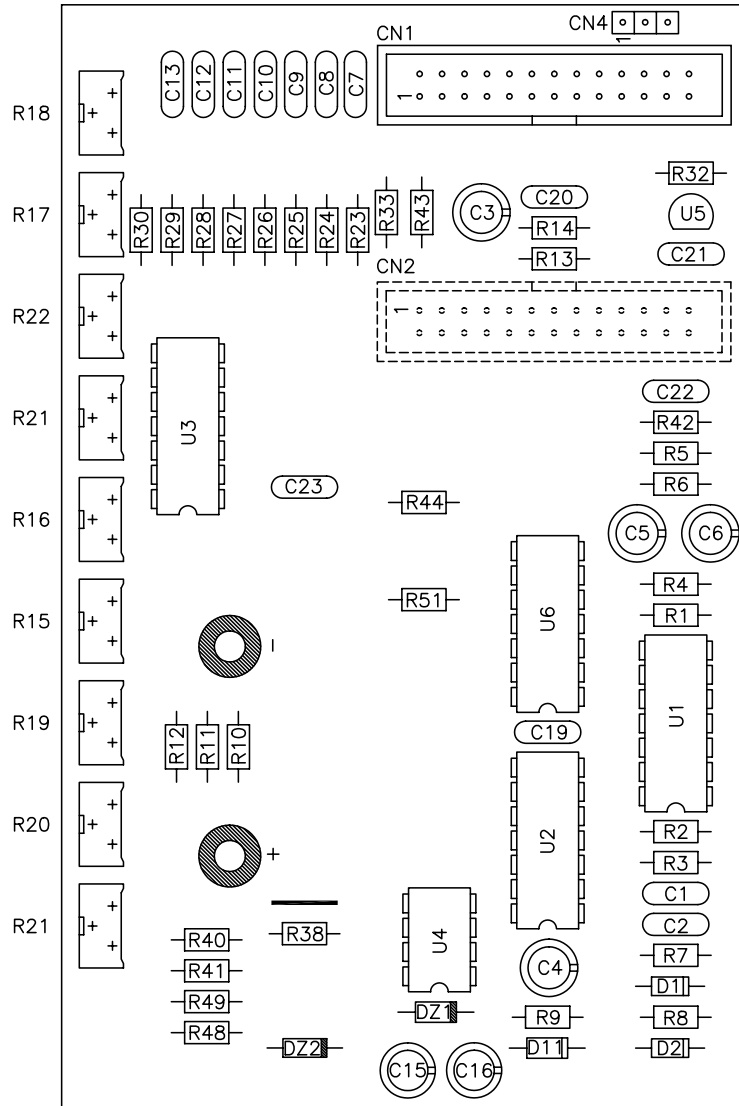
TCX010MHZ

Bill Of Materials

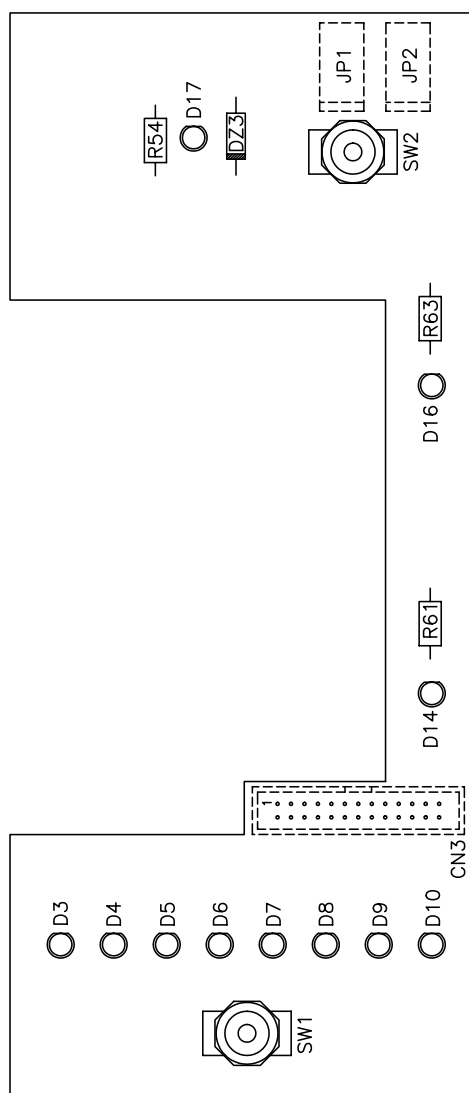
Page 1

Item	Quantity	Reference	Part
1	2	C1, C2	0.1uF
2	1	FIX1	FIX35
3	1	JP1	STM06S0
4	8	J1, J2, J3, J4, J5, J6, J7, J8	JSMD
5	1	Q1	MMBFJ310
6	1	Q2	BC857
7	1	R1	4K7
8	1	R2	270
9	1	R3	150K
10	1	R4	470
11	1	TCX1	TCX0S
12	1	U1	HC390SMD

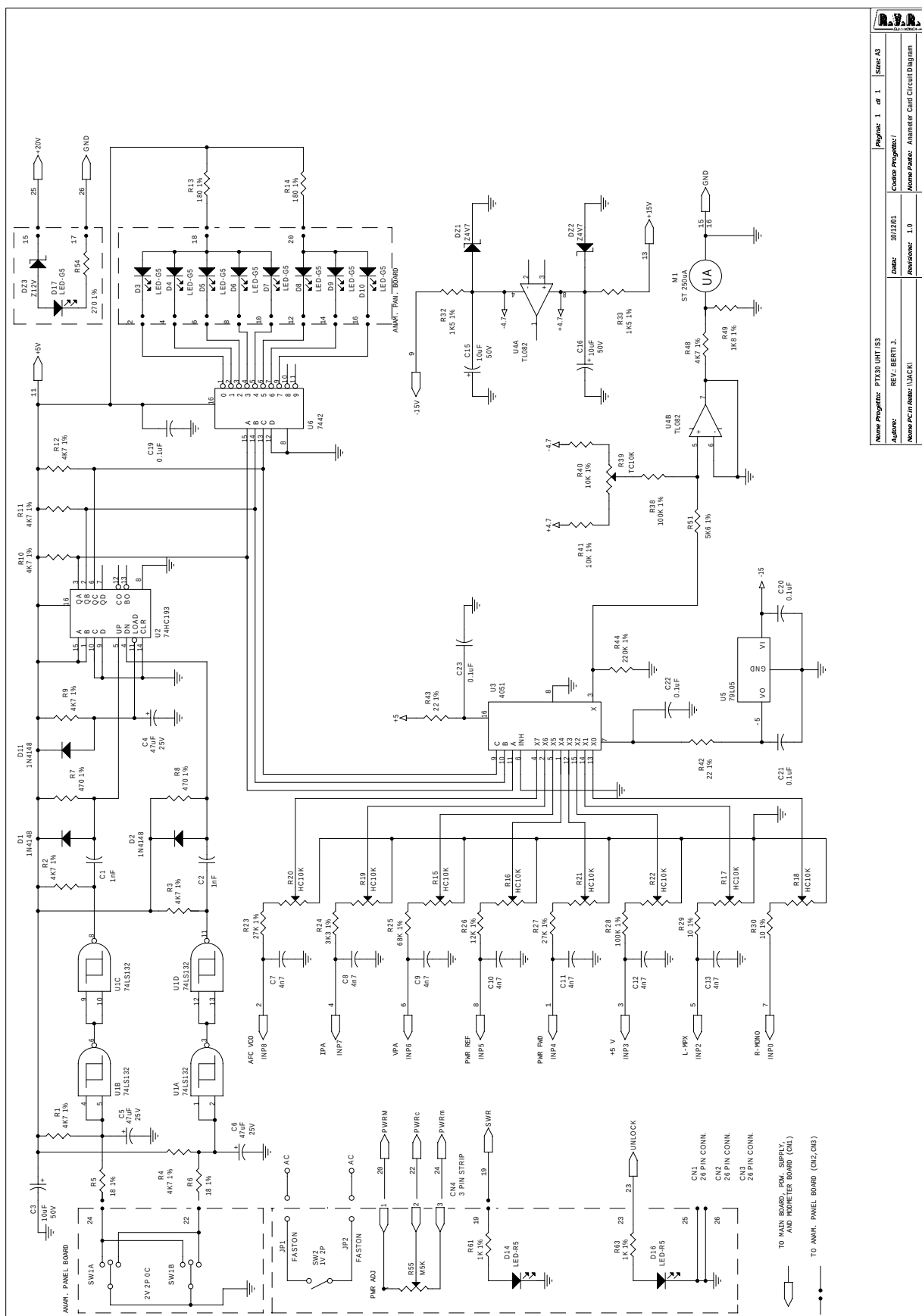
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Nome Progetto		Pagina		di		Size	
PTX30 UHT /S3		1		2		A3	
Autore	REV. BERTI J.	Data		10/12/01		Codice Progetto	
Nome PC in Rete	\\JACK\	Revisione		1.0		Nome Parte	
File/Cartella	MANUAL\PTX30_UHT\S3\ANAMETER\LAYMAN\JING	Autorizzazione		/		Codice	
Scala	/	Trattamento		/		SLANA1PTX3S3	
		Profilo		/			



Nome Progetto		PTX30 UHT / S3		Pagina 2 di 2		Size A3
Autore		REV.: BERTI J.		Codice Progetto /		Nome Part-nuemer. (Panel Card) Component Layout
Nome PC in Rete		\\JACK\		Data 10/12/01		
File/Cartello MANUALE PTX30_UHTS3		MANUALE\ALYANAME\JING		Revisione 1.0		
Scrittore /		Macchina /		Autore		Codice
Tecnica /		Tecnica /		Tecnica /		SLANAPTX33



Anameter Card Circuit Diagram

Revised: July 18, 1996

Revision:

Bill Of Materials

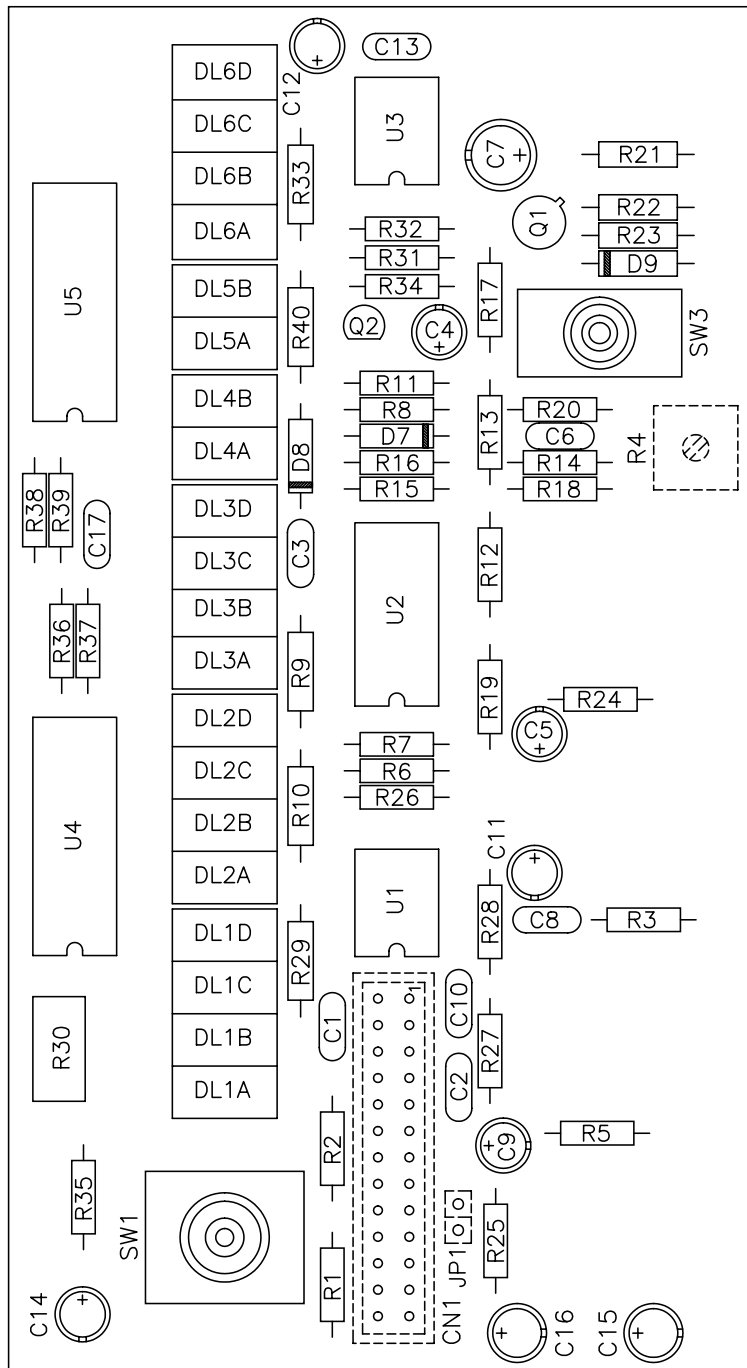
July 19, 1996

7:21:25

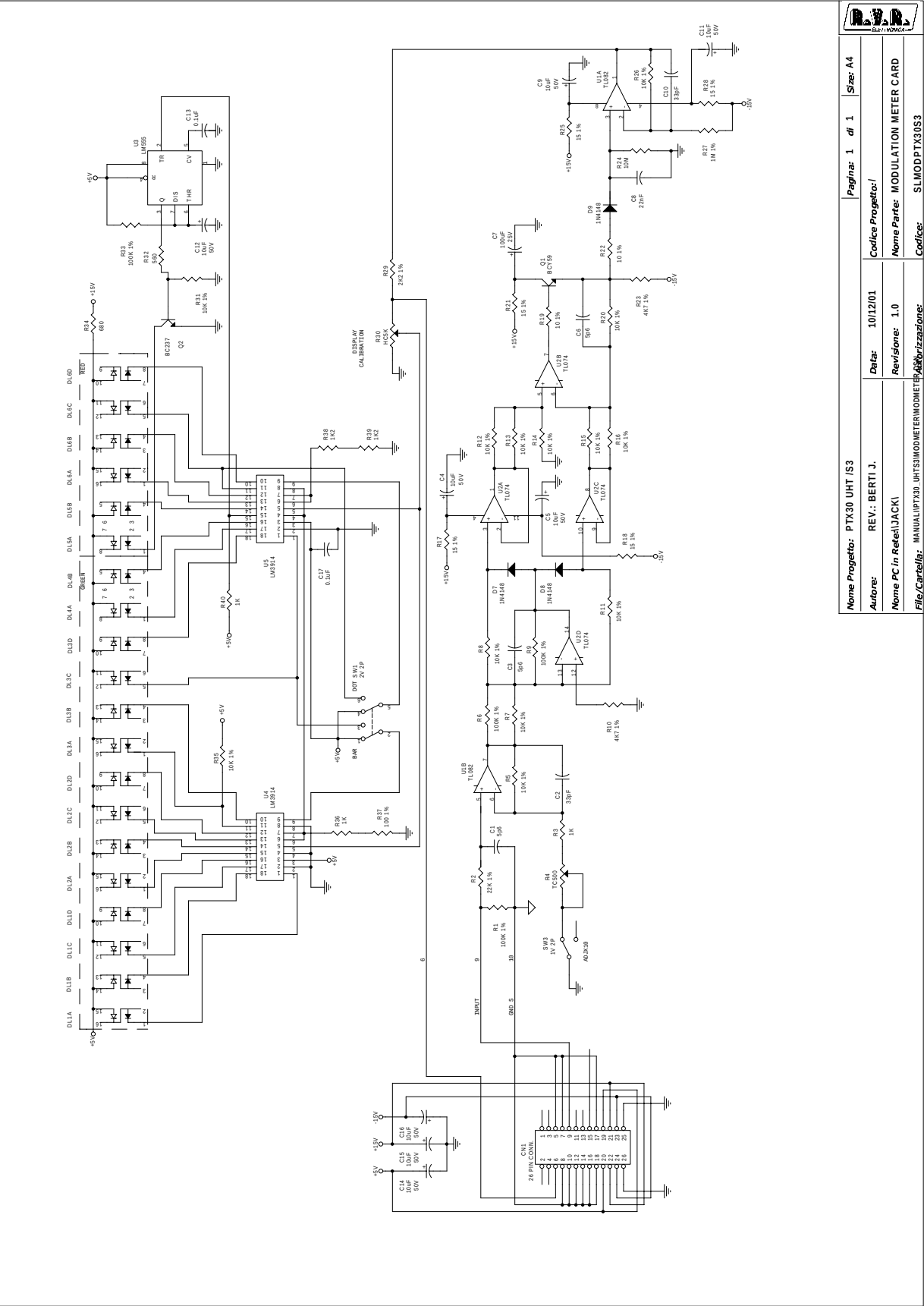
Page

1

Item	Quantity	Reference	Part	Description	Part Order Code
1	2	R29, R30	10 1%	RESISTOR 1/4W 1%	
2	2	R5, R6	18 1%	RESISTOR 1/4W 1%	
3	2	R42, R43	22 1%	RESISTOR 1/4W 1%	
4	2	R13, R14	180 1%	RESISTOR 1/4W 1%	
5	1	R54	270 1%	RESISTOR 1/4W 1%	
6	2	R7, R8	470 1%	RESISTOR 1/4W 1%	
7	2	R61, R63	1K 1%	RESISTOR 1/4W 1%	
8	2	R32, R33	1K5 1%	RESISTOR 1/4W 1%	
9	1	R49	1K8 1%	RESISTOR 1/4W 1%	
10	1	R24	3K3 1%	RESISTOR 1/4W 1%	
11	9	R1, R2, R3, R4, R9, R10, R11, R12, R48	4K7 1%	RESISTOR 1/4W 1%	
12	1	R51	5K6 1%	RESISTOR 1/4W 1%	
13	2	R40, R41	10K 1%	RESISTOR 1/4W 1%	
14	1	R26	12K 1%	RESISTOR 1/4W 1%	
15	2	R23, R27	27K 1%	RESISTOR 1/4W 1%	
16	1	R25	68K 1%	RESISTOR 1/4W 1%	
17	2	R28, R38	100K 1%	RESISTOR 1/4W 1%	
18	1	R44	220K 1%	RESISTOR 1/4W 1%	
19	1	R39	TC10K	TR.REG.VERT.CERMET	
20	8	R15, R16, R17, R18, R19, R20, R21, R22	HC10K	TR.REG.ORIZ.CERMET	
21	1	R55	M5K	TRIMMER MULTIGIRI	
22	1	SUPPTRIM	SUPTM	SUP.TELAIO TR.MULTI	
23	2	C1, C2	1NF	CERAMIC CAPACITOR	
24	7	C7, C8, C9, C10, C11, C12, C13	4N7	CERAMIC CAPACITOR	
25	5	C19, C20, C21, C22, C23	0.1UF	CERAMIC CAPACITOR	
26	3	C3, C15, C16	10UF	ELECTROLYTIC CAP.	
27	3	C4, C5, C6	47UF	ELECTROLYTIC CAP.	
28	1	M1	ST 250UA	STRUMENTO 250ua	
29	1	CN4	3 PIN STRIP	STRIP M P 2.54 3PIN	
30	2	JP1, JP2	FASTON	CON.FASTON M CIR.ST.	
31	3	CN1, CN2, CN3	26 PIN CONN.	CON. M 2*13 P 2.54	
32	1	SW2	1V 2P	DEV.1 VIA 2 POS	
33	1	SW1	2V 2P 0C	DEV.2 VIE 2 POS 0C.	
34	3	D1, D2, D11	1N4148	SILICON DIODE	
35	2	D14, D16	LED-R5	RED LED DIODE	
36	9	D3, D4, D5, D6, D7, D8, D9, D10, D17	LED-G5	GREEN LED DIODE	
37	2	DZ1, DZ2	Z4V7	ZENER DIODE 4.7V 0.4W	
38	1	DZ3	Z12V	ZENER DIODE 12V 0.4W	
39	1	U5	79L05	NEG. STABILIZER 100mA	
40	1	U4	TL082	DOUBLE OP. AMP.	
41	1	U3	4051	ANALOG MULTIPLEXER	
42	1	U6	7442	TTL BCD DECODER	
43	1	U1	74LS132	TTL QUAD NAND TRIG.	
44	1	U2	74HC193	CMOS BIN COUNTER	



Nome Progetto		Pagina		di		Size	
PTX30 UHT /S3		1		1		A3	
Autore		Codice Progetto		Nome Parte		Revisione	
REV. BERTI J.		/		HDMETER CARD		1.0	
Nome PC in Rete		Autore		Codice		Trattamento	
MANUALPTX30_UHTS3_HDMETERLAYHDMING		/		SLMODPTX30S3		/	
Scala		Materiale		Profilo		/	



Item	Quantity	Reference	Part	Description	Part Order Code
1	2	R19, R22	10 1%	RESISTOR 1/4W 1%	
2	5	R17, R18, R21, R25, R28	15 1%	RESISTOR 1/4W 1%	
3	1	R37	100 1%	RESISTOR 1/4W 1%	
4	1	R32	560	RESISTOR 1/4W 5%	
5	1	R34	680	RESISTOR 1/4W 5%	
6	3	R3, R36, R40	1K	RESISTOR 1/4W 5%	
7	2	R38, R39	1K2	RESISTOR 1/4W 5%	
8	1	R29	2K2 1%	RESISTOR 1/4W 1%	
9	2	R10, R23	4K7 1%	RESISTOR 1/4W 1%	
10	13	R5, R7, R8, R11, R12, R13, R14, R15, R16, R20, R26, R31, R35	10K 1%	RESISTOR 1/4W 1%	
11	1	R2	22K 1%	RESISTOR 1/4W 1%	
12	4	R1, R6, R9, R33	100K 1%	RESISTOR 1/4W 1%	
13	1	R27	1M 1%	RESISTOR 1/4W 1%	
14	1	R24	10M	RESISTOR 1/4W 5%	
15	1	R4	TC500	TR.REG.VERT.CERMET	
16	1	R30	HC5K	TR.REG.ORIZ.CERMET	
17	3	C1, C3, C6	5P6	CERAMIC CAP. NP0	
18	2	C2, C10	33PF	CERAMIC CAP. NP0	
19	1	C8	22NF	CERAMIC CAPACITOR	
20	2	C13, C17	0.1UF	CERAMIC CAPACITOR	
21	8	C4, C5, C9, C11, C12, C14, C15, C16	10UF	ELECTROLYTIC CAP.	
22	1	C7	100UF	ELECTROLYTIC CAP.	
23	1	CN1	26 PIN CONN.	CON.M 2*13 P 2.54	
24	1	SW3	1V 2P	DEV. 1 VIA 2 POS	
25	1	SW1	2V 2P	DEV. 2 VIE 2 POS	
26	3	D7, D8, D9	1N4148	SILICON DIODE	
27	1	DL5	HLMP2600	2 RED LED DIODE	
28	1	DL6	HLMP2620	4 RED LED DIODE	
29	1	DL4	HLMP2800	2 GREEN LED DIODE	
30	3	DL1, DL2, DL3	HLMP2820	4 GREEN LED DIODE	
31	1	Q2	BC237	NPN TRANSISTOR	
32	1	Q1	BCY59	NPN TRANSISTOR	
33	1	U1	TL082	DOUBLE OP. AMP.	
34	1	U2	TL074	QUAD OP. AMP.	
35	1	U3	LM555	TIMER	
36	2	U4, U5	LM3914	BAR DOT LED DRIVER	

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