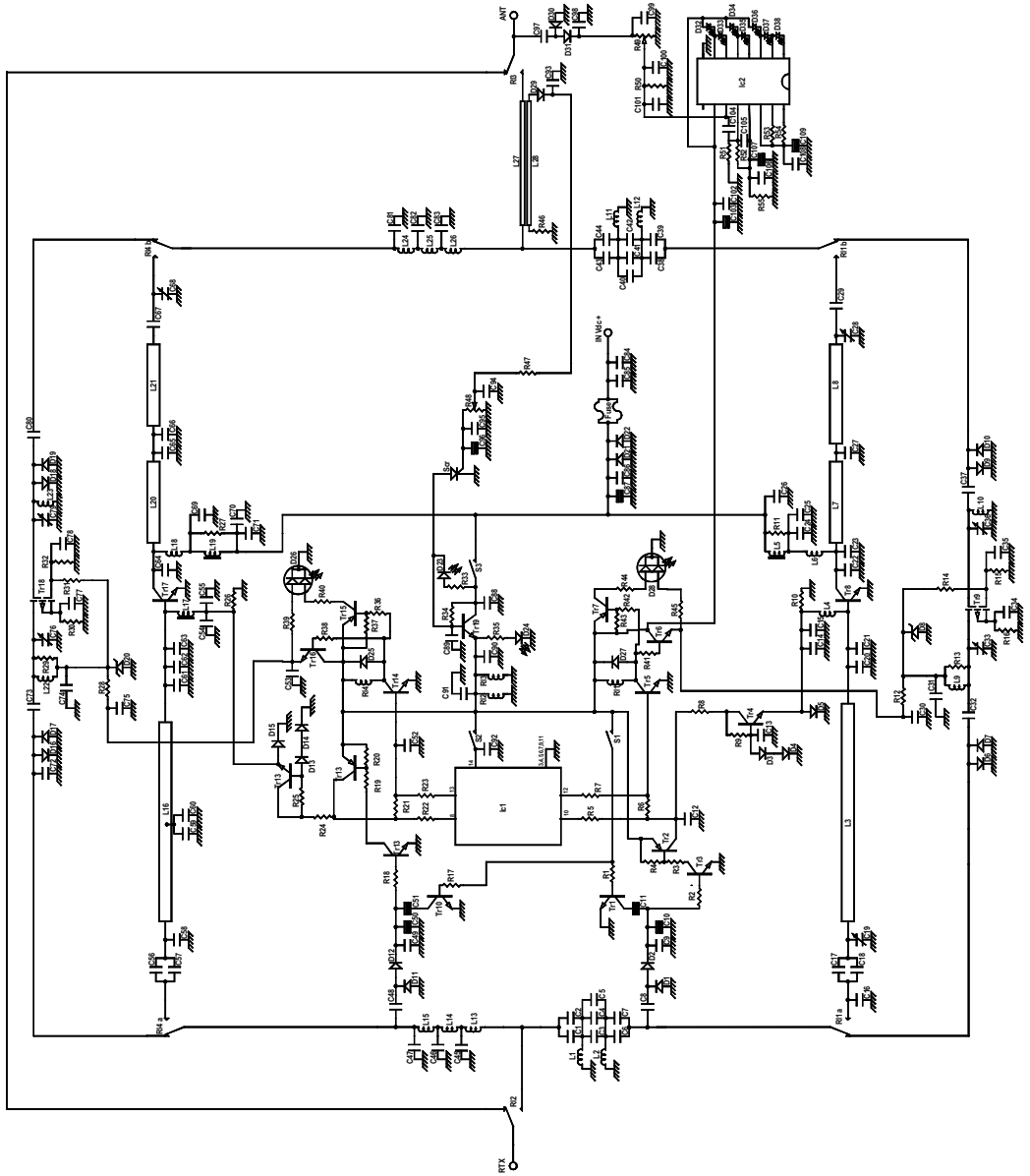
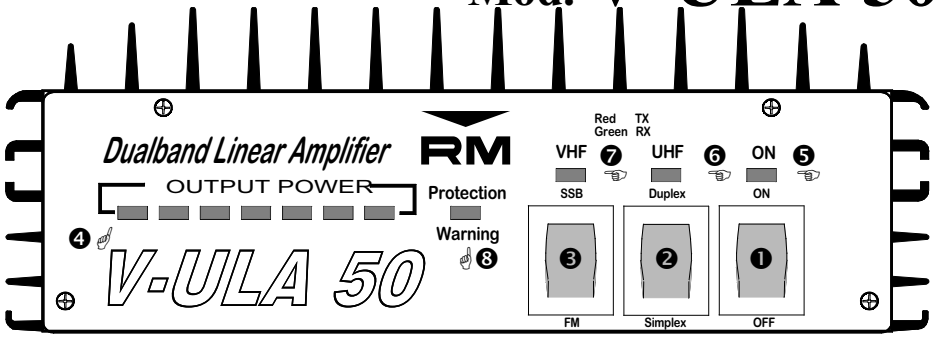


http://www.rmitaly.com

AMPLIFICATORE LINEARE BIBANDA
DUAL BAND LINEAR AMPLIFIER
AMPLIFICATEUR LINEAIRE BIBANDE V/UHF
VHF/UHF LINEARVERSTÄRKER DUO-BAND
AMPLIFICADORES LINEAL BIBANDA VHF/UHF

CE

Mod. V-ULA 50



❶ Interruttore ON OFF lineare - Amplifier ON OFF switch - Interrupteur ON OFF - Schalter EIN-AUS für Linearverstärker- Interruptor ON OFF del amplificador

❷ Interruttore selezione modo Simplex o Duplex - Switch to select simplex or duplex mode - Interruptor Simplex/Cross-bande - Schalter für Simplex oder Duplex - Interruptor de selección de Simplex o Duplex

❸ Interruttore SSB FM - SSB FM switch - Interrupteur FM/SSB CW - Betriebsartenschalter SSB FM - Interruptor SSB FM

❹ Indicatore potenza d'uscita - output power meter - Indicateur de puissance de sortie - Ausgangs leistung-anzeige -Indicador de potencia de salida

❺ Led indicatore di accensione lineare - Amplifier switching on led indicator - Led temoin de mise sous tension - Verstärker LED Anzeige - Led indicador de encendido del amplificador.

❻ Led indicatore di stato amplificatore UHF (Rosso TX Verde RX) - LED indicating UHF amplifier status (red TX, green RX) - LED temoin de bande UHF (rouge TX, vert RX) - LED-anzeige für UHF-frequenz (rot = TX grün = RX) - Led indicador de la posición del amplificador UHF (Rojo TX - Verde RX)

❼ Led indicatore di stato amplificatore VHF (Rosso TX Verde RX) - LED indicating VHF amplifier status (red TX, green RX) - LED temoin de bande VHF (rouge TX, vert RX) - LED-anzeige für VHF-frequenz (rot = TX grün = RX) - Led indicador de la posición del amplificador VHF (Rojo TX - Verde RX)

❽ Indicatore di stato di protezione - Protection state indicator - LED temoin de mise en service de la protection - Überlastungschutz LED - Indicador de protec ción

	VHF		UHF
Frequenza - Frequency - Fréquence - Frequenz - Frecuencia	144 - 148	/	430 - 440 MHz
Alimentazione - Supply - Alimentation - Versorgungsspannung - Alimentación	12 - 14 Volt cc		
Assorbimento - Input energy - Courant - Stromaufnahme - Consumo	3 - 10 Amp		
Potenza d'ingresso - Input power - Puissance d'entrée - Ansteuerung - Potencia de entrada	0,5 - 8W		
Potenza d'uscita - Output power - Puissance de sortie - Ausgangsleistung -Potencia de salida	70 W	/	50 W Max
ROS ingrsso - Input SWR - TOS d'entrée -SWR Betrieb bis -ROE de entrada	1.1 - 1.5		
Funzionamento - Mode - Functionnement - Funktionen - Modos de emisión	FM SSB		
Preamplificatore - Preamplifier - Préamplificateur - Empfangsverstärker kann - Preamplificador	18 - 22	/	10 - 18 dB
fusibile - Fuse - Fusible - Sicherung - Fusible	2 x 5A		

Ⓘ Commutazione elettronica.
Protezione contro l'inversione di polarità.
Protezione contro ROS eccessivo.

CONSIGLI D'USO

Per un corretto uso dell'amplificatore **V-ULA 50** si consiglia di posizionarlo in modo che sia assicurato un sufficiente flusso di aria al radiatore di calore, utilizzare cavi di alimentazione il più corti possibile e comunque non più lunghi di 3 m., possibilmente collegati direttamente alla batteria e di sezione non inferiore a 2,5 mm².

Il cavo di discesa a 50 Ω, deve essere di buona qualità, adeguato alla frequenza ed alla potenza di lavoro e di lunghezza minima necessaria in quanto introduce una sensibile attenuazione in trasmissione con perdita di potenza e soprattutto in ricezione peggiorando il rapporto segnale-rumore, utilizzare un'antenna che accetti largamente la potenza dell'amplificatore, e che abbia ROS non superiore a 1.5 alla massima potenza, i connettori devono essere di alta qualità in teflon.
Il collegamento tra RTX e Lineare deve essere effettuato con cavo a 50 Ω, lungo 70 cm.
Non rimanere in trasmissione per lungo tempo senza intervalli ragionevoli per permettere il raffreddamento dei transistors. In caso di utilizzo in stazione base si consiglia l'utilizzo di una batteria con caricabatteria in tampone .
L'accensione del LED ❽ indica l'intervento della protezione per livello eccessivo di onde stazionarie (ROS), per il ripristino della funzionalità del lineare spegnere e riaccendere l'interruttore ❸ dopo aver eliminato il motivo di intervento della protezione.

L'amplificatore **V-ULA 50** è un amplificatore bibanda 2m. e 70 cm. FULL-DUPLEX ed è dotato di due distinti circuiti composti da un amplificatore e preamplificatore accoppiati con opportuni duplexer circolari el motivo que provoco el funcionamiento de circuito de protección.

El amplificador V-ULA 50 es un bibanda para 2m y 70 cm. FULL Duplex, y dotado de dos circuitos distintos, compuestos de amplificador y preamplificador acoplados con su correspondientes duplexores circulares.
Posición SIMPLEX

El amplificador reconoce automáticamente la banda que se utiliza, y se posiciona en ella ya sea en recepción o transmisión, comportándose como un amplificador normal «habla-escucha». In trasmisión, se indica la banda utilizada por medio de la conmutación de verde a rojo de uno de los LED para este efecto (❻ ó ❼).
Posición DUPLEX

El amplificador, se posiciona automáticamente en transmisión en la banda en que transmite el transceptor, y en recepción, en la banda opuesta, operando así en FULL DUPLEX. La condición en que trabaja, viene indicada por los colores de los dos LED ❻ y ❼, rojo para TX y verde para RX.

La luz verde de los dos LED ❻ y ❼, indica el funcionamiento del preamplificador de antena.

Garantía de 24 meses desde la fecha de la factura..

Recordamos que el uso de los amplificadores lineales esta regulado por leyes especificas. La firma constructora declina cualquier responsabilidad derivada de un uso incorrecto.

La no observancia de las instrucciones descritas, anula la garantía que en ningún caso cubre los transistores finales y las partes decorativas.

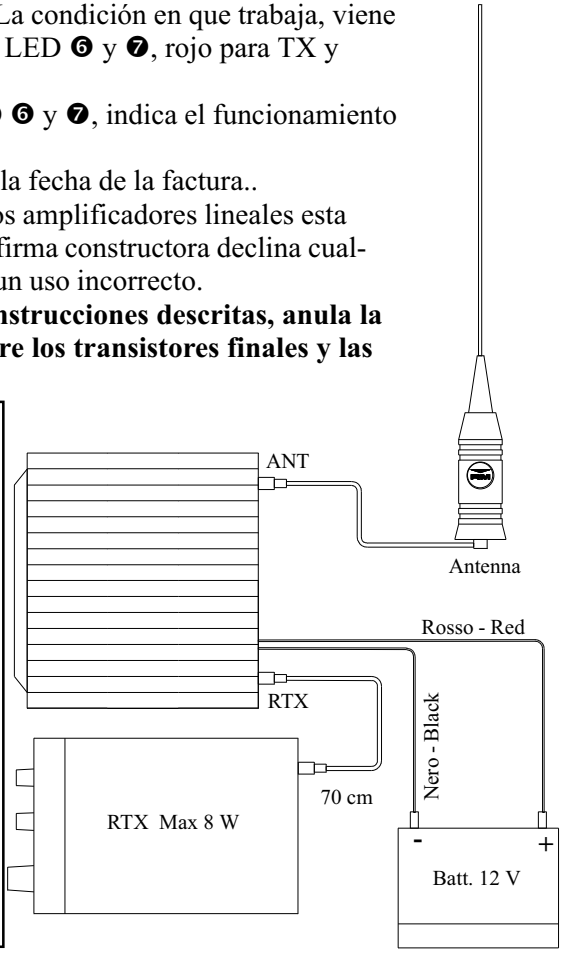
CE

RM ITALY

EC Certificate of conformity
(to EMC Directive 89/336/EEC)

This is to certify that:
The linear amplifier **Mod V-ULA 50** complies with the provisions of the Directive of the Council of the European Communities on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC Directive 89/336/EEC).

This declaration of conformity of European Communities is the result of an examination carried out by the Quality Assurance Department of
RM Costruzioni elettroniche
in accordance with European Telecommunicatons Standards ETS 300 684 - 300 339, of December 1995.



Machen sie keine zu langen Durchgänge, um den Verstärker nicht zu erhitzen ! Bei max. Leistung Stationärbeitreb achten Sie bitte darauf, daß ein stabilisiertes Netzteil mit ausreichender Stromstärke benutzt wird!
LED (❽) zeigt ein schlechtes SWR an, TX ist sofort zu unterbrechen.
Position: SIMPLEX

Der Verstärker erkennt und arbeitet automatisch in dem von Ihnen gewählten Frequenzbereich.
Position: DUPLEX

der Verstärker wechselt automatisch in das von Ihnen gewünschte Band und erkennt den Empfänger automatisch.

Die grüne LED zeigt an, das Empfangssignal ebenfalls Verstärkt wird.

Nach dem Kauf wird eine Garantie von 24 Monaten gewährt. Auf Endstufe und andere Halbleiter wird keine Garantie gewährt !!!

Achten Sie darauf, dass der Verstärker nur von Befugten in Betrieb genommen werden darf. Bei Nichtbeachtung droht Geld-oder Haftstrafe.

(E) Conmutación electrónica.

Protección contra la inversión de polaridad.

Protección contra una R.O.E. excesiva

CONSEJOS PARA SU USO

Para un correcto uso del amplificador V-ULA 50, es aconsejable situarlo de manera que quede asegurado un suficiente flujo de aire hacia el radiador de calor, utilizar asimismo un cable de alimentación lo más corto posible, en ningún caso mayor de 3 m., y a ser posible, conectado directamente a la batería, con una sección no inferior a 1,5 mm².

La bajada de antena de 50 Ω, debe ser de buena calidad, adecuado a la frecuencia y potencia de trabajo. Dicho cable, deberá tener el mínimo largo necesario para evitar la sensible atenuación y la consiguiente pérdida de potencia, y sobre todo en recepción al empeorar la relación señal-ruido. Utilizar también una antena que permita ampliamente la potencia del amplificador, con una R.O.E. no superior a 1/1,5 en la máxima potencia. Los conectores deberán ser de alta calidad, a ser posible en teflón.

En enlace entre el transceptor y el lineal, debe ser efectuado con cable de 50 Ω, de una medida de 70 cm.

No permanecer en transmisión mucho tiempo sin un espacio razonable que permita el enfriamiento de los transistores. En caso de uso en estación base se aconseja usar una batería con carga permanente.

En encendido del LED ❽, indica el funcionamiento de protección por un excesivo nivel de R.O.E.. Para reiniciar la operación y el funcionamiento del amplificador, apagar y encender el interruptor ❶, después de haber eliminado

Posizione **SIMPLEX:**

L'amplificatore riconosce automaticamente la banda utilizzata e si posiziona in essa sia in ricezione che in trasmissione e quindi si comporta come un normale amplificatore "parla-ascolta". In trasmissione la banda utilizzata viene evidenziata tramite le commutazione da verde a rosso di uno dei due Led preposti (❻ e ❼).
Posizione **DUPLEX**

L'amplificatore si posiziona automaticamente in trasmissione nella banda comandata dal ricetrasmettitore ed in ricezione nella banda opposta operando quindi in FULL-DUPLEX, la condizione è evidenziata dal colore dei due Led 6 e 7 (rosso TX - verde RX).

La luce verde dei due Led ❻ e ❼ indica il funzionamento del preamplificatore d'antenna

Garanzia mesi 24 dalla data dello scontrino o ricevuta.

Si ricorda che l'utilizzo degli amplificatori lineari è regolato da leggi specifiche e quindi se ne consiglia la visione prima dell'utilizzo e comunque la ditta costruttrice declina ogni responsabilità derivata da un non corretto uso rispetto le norme vigenti.

La non osservanza delle istruzioni sopra scritte annulla ogni forma di garanzia che comunque non include i transistors finali e le parti estetiche.

(GB) Electronic switch.

Inversion polarity protection.

Protection against excessive SWR.

Suggestion of use

For the correct use of the AMPLIFIER V-ULA 50 it is advised to position it in such a way to assure a sufficient flow of air to the heat-radiator. Use as short as possible feeding cables, however not longer than 3 meters, directly connected to the battery with a section of 2,5 mm² minimum

The descend cable 50 Ω has to be of good quality, suitable to the frequency and to the power of job and with the minimum required length as it introduces a sensitive attenuation in transmission with loss of power and especially in receipt worsening the relationship signal-noise.

Use a spar largely accepting the power of AMPLIFIER and having SWR not exceeding 1.5 at the max power. Use high quality Teflon connectors.

The connection between RTX and AMPLIFIER has to be effected with 50 Ω cable 70 cm. long.

Do not remain in transmission for long time without reasonable intervals to allow the cooling of the transistors. In case of use in basic station it is recommended the use of a battery with battery charge in buffer.

The lighting of led ❽ indicates the intervention of protection for excessive level of SWR, to restore the functionality of the AMPLIFIER switch

OFF and ON ❶ after eliminating the reason calling for protection.

V-ULA 50 amplifier, is a 2 m. 70 cm. full duplex dual band amplifier, provided with two distinct circuits compost of amplifier and preamplifier coupled by means of proper round duplexers.

Position **SIMPLEX.**

The amplifier automatically recognized the used band and set itself on it either in reception and in transmission, so it acts as regular "Speak-listen" amplifier. When transmitting the band is evidenced by the commute green to red of one of the two apposite leds.

Position **DUPLEX.**

The amplifier automatically sets itself in transmission in the band required by ricetranceiver and in reception in the opposite band, so that working in full duplex; This status is evidence by the colour of the two leds ❻ and ❼ red TX and green RX.

The green light indicate the operating status of the antenna preamplifier.

24 months warranty from date of receipt.

Please note that the use of LINEAR AMPLIFIER is ruled by specific laws, that are to be known by the user, anyway the manufacturer declines any responsibility coming from an uncorrected use.

Any warranty is cancelled if the above instructions are not observed. Final transistor and esthetical parts are not included in the warranty.

(F) Commutation électronique.

Protéction contre les inversion de polarité.

Protection contre le ROS excessif.

Conseils d'installation :

Pour fonctionner correctement, votre amplificateur **V-ULA 50** doit impérativement être installé dans un endroit sec et aéré de manière à ce que la chaleur dégagée par le radiateur soit librement évacuée. Les fils d'alimentation doivent avoir un diamètre d'au-moins 2,5 mm² et être le plus court possible (ne pas excéder 3 m).

Les câbles coaxiaux (50 ohms) utilisés doivent être de bonne qualité et capable de véhiculer la puissance délivrée par le **V-ULA 50**. Leur longueur ne doit par être excessive afin de ne pas induire d'atténuations tant dans la puissance émise que dans les signaux reçus. Des connecteurs type Téflon sont recommandés.

Le ROS ne doit pas excédé 1:1,5 lorsque l'amplificateur délivre sa puissance maximale.

La longueur de câble préconisée entre l'émetteur-récepteur et l'amplificateur est d'environ 70 cm.

Pour une utilisation en fixe, il est vivement recommandé d'utiliser une alimentation très performante et capable de délivrer l'ampérage nécessaire pour un fonctionnement correct du **V-ULA 50**.

Les périodes d'émission ne doivent pas être trop prolongée afin que les transistors de puissance refroidissent normalement.

En cas de ROS anormalement élevé, la protection du **V-ULA 50** ❽ entrera en action. L'amplificateur doit être éteint puis remis sous tension ❸ pour la déverrouiller.

Le **V-ULA 50** est un amplificateur 2 m. et 70 cm. Il s'agit d'un amplificateur double bande «full duplex», construit avec deux circuits distincts composés d'un amplificateur et d'un préamplificateur de réception couplés par un système de duplexeurs.

Position **SIMPLEX**

L'amplificateur reconnaît automatiquement la bande utilisée et bascule directement en émission ou en réception selon si vous parlez ou écoutez. Quand vous transmettez une Led rouge ou verte s'allume correspondant à la bande utilisée.

Position **DUPLEX**

L'amplificateur bascule automatiquement en émission sur la bande utilisée et en réception sur la bande opposée pour travailler en «full duplex». Cette situation est mise en évidence par la couleur des Led ❻ et ❼ (rouge pour TX ou verte pour RX).

Lorsque la Led verte est allumée cela indique le fonctionnement du préamplificateur d'antenne

La période de garanti est de 24 mois, les transistors de puissance ne sont pas couverts par celle-ci.

(D) Elektronischer Schalter.

Polaritätenschutz.

Schutz gegen übermäßiges SWR (Antennenanpassung)

SICHERHEITS-HINWEISE

Für den Betrieb des Verstärkers V-ULA 50 sollte ein gut durchlüfteter Platz zur Montage gesucht werden. Möglichst nicht in der Nähe von Heizungsausgängen betreiben! Für die Stromzuführung nur ein Kabel mit 2,5 mm Durchmesser (Plus und Minus) benutzen, das nicht länger als 3 m ist.

Das verwendete Kabel (50 OHM) sollte möglichst geringe Dämpfung haben, um TX + RX nicht zu verringern!

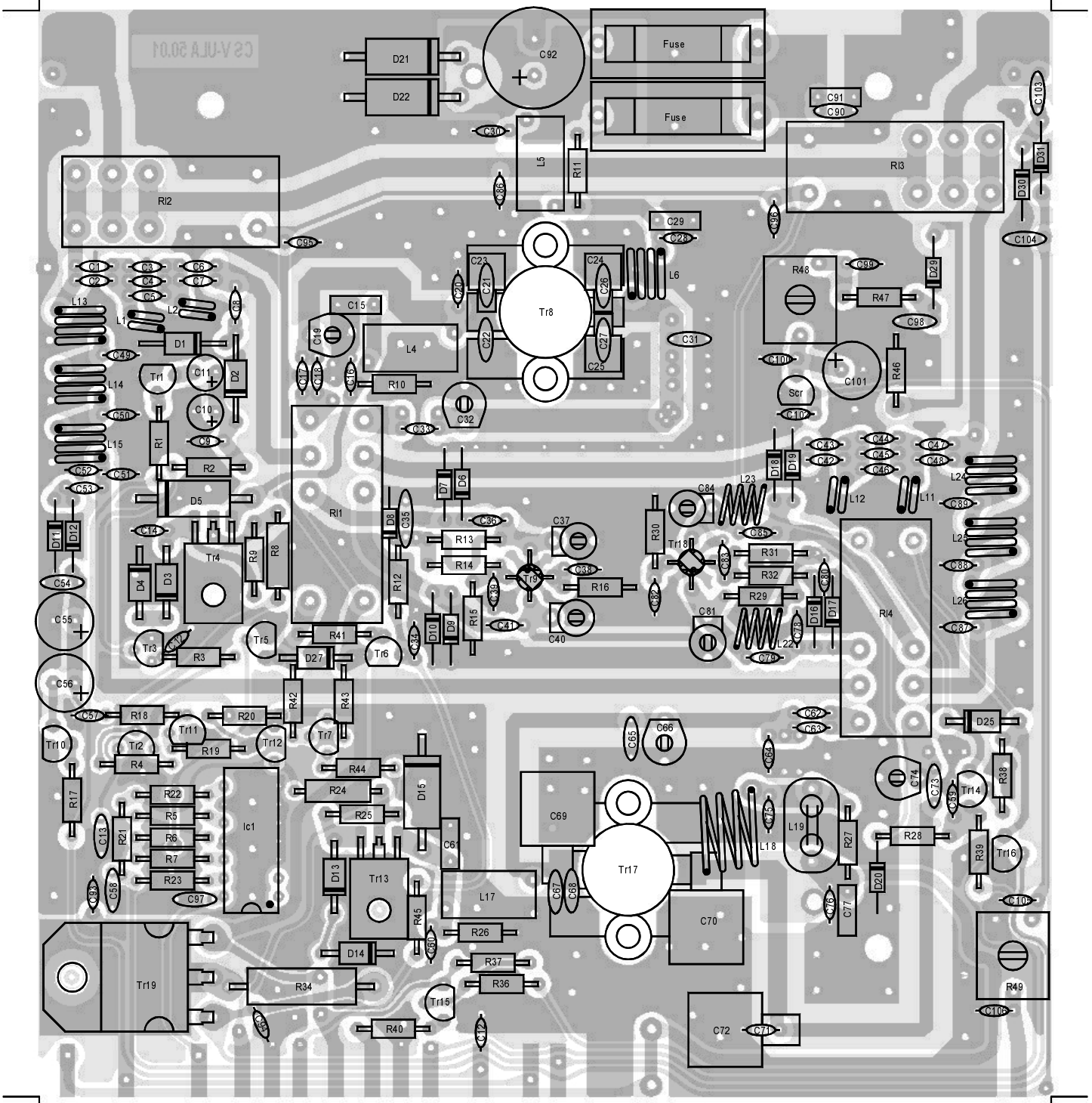
Benutzen Sie nur Verbindungsstecker mit Teflon-Isolator. Die Stecker sollten für die Frequenz des Verstärkers möglichst verlustarm gewählt werden. Achten Sie darauf, dass das SWR unter 1:1,5 ist. Notfalls justieren Sie Ihre verwendete Antenne, um die maximale Leistung abstrahlen zu können.

RM Costruzioni Elettroniche
di Marchioni Davide & Daniele s.n.c.

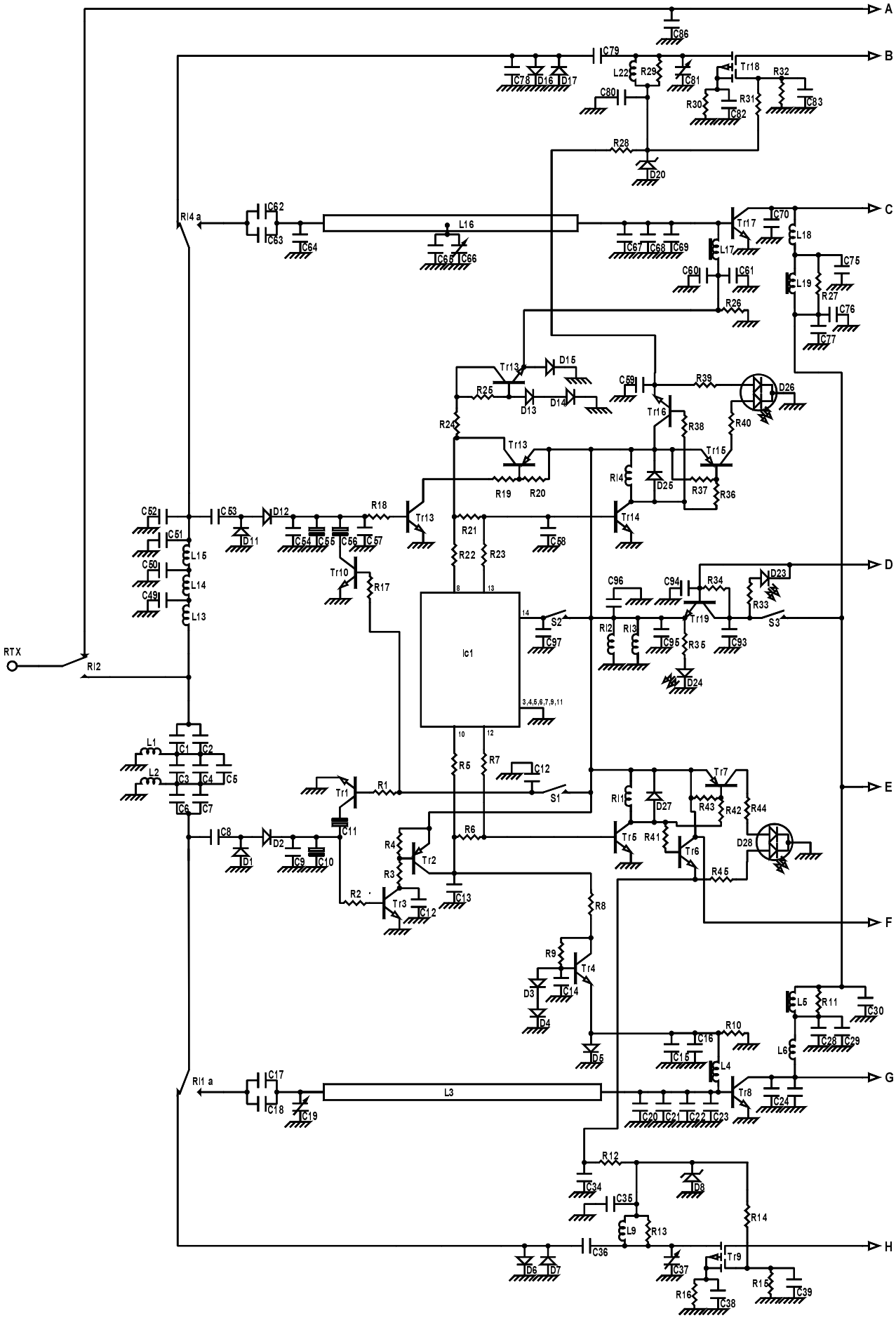
Via IV Novembre 215/5
Casella postale N° 33
40045 Ponte della Venturina (BO) ITALY
Tel +39 0534 60460
Fax +39 0534 60463
E-MAIL ufftec@rmitaly.com
http://www.rmitaly.com

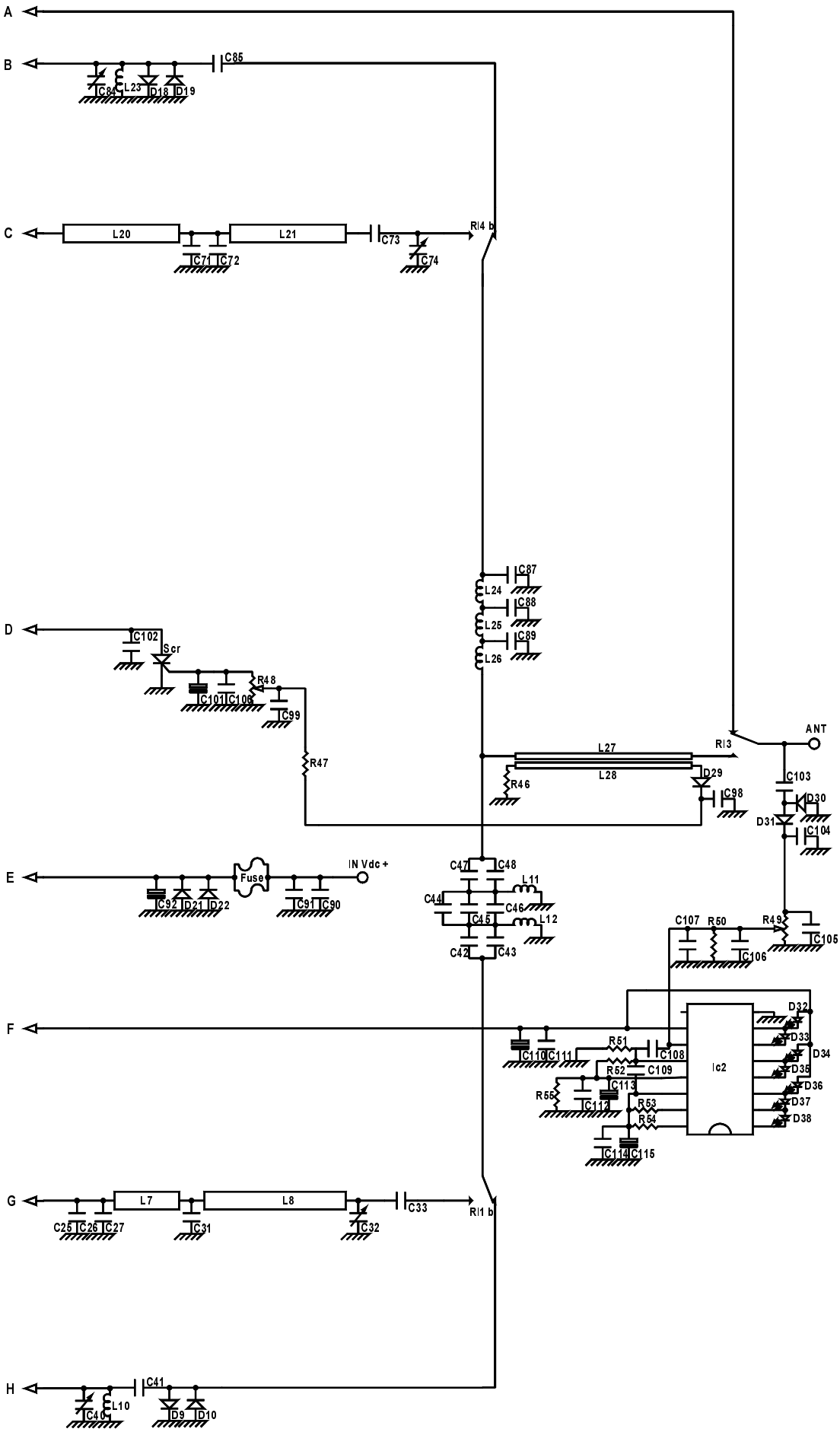
Mod. V-ULA 50 V-UHF linear amplifier

Version 1.01



Schematic diagram




A
B
C85
C84
L23
D18
D19
C
L20
L21
C73
RI4 b
C71
C72
C74
C87
L24
C88
L25
C89
L26
D
C102
Scr
R48
C101
C100
C99
R47
L27
RI3
ANT
L28
D29
R46
C98
C103
D30
D31
C104
E
IN Vdc +
Fuse
C92
D21
D22
C91
C90
C47
C48
L11
C44
C46
C45
L12
C42
C43
C107
R50
R49
C105
C106
F
D32
D33
D34
D35
D36
D37
D38
C110
C111
R51
C108
R52
C109
C113
R55
C112
R53
R54
C114
C115
Ic2
G
L7
L8
C33
RI1 b
C25
C26
C27
C31
C32
H
C41
C40
L10
D9
D10

List of components

C 1	=	3,9 pF	50 V	NP0
C 2	=	3,9 pF	50 V	NP0
C 3	=	2,2 pF	50 V	NP0
C 4	=	2,2 pF	50 V	NP0
C 5	=	1,8 pF	50 V	NP0
C 6	=	3,9 pF	50 V	NP0
C 7	=	3,9 pF	50 V	NP0
C 8	=	1,8 pF	50 V	NP0
C 9	=	1,0 nF	50 V	
C 10	=	4,7 µF	16 V	
C 11	=	33 µF	16 V	
C 12	=	1,0 nF	50 V	
C 13	=	1,0 nF	50 V	
C 14	=	1,0 nF	50 V	
C 15	=	220 nF	63 V	Multilayer
C 16	=	1,0 nF	50 V	
C 17	=	47 pF	50 V	NP0
C 18	=	47 pF	50 V	NP0
C 19	=	Trimmer 5 - 20 pF		NP0
C 20	=	10 pF	50 V	NP0
C 21	=	10 pF	50 V	NP0
C 22	=	6,8 pF	50 V	NP0
C 23	=	33 pF	300 V	Mica
C 24	=	33 pF	300 V	Mica
C 25	=	33 pF	300 V	Mica
C 26	=	12 pF	500 V	NP0
C 27	=	15 pF	500 V	NP0
C 28	=	100 pF	500 V	NP0
C 29	=	220 nF	63 V	Multilayer
C 30	=	1,0 nF	50 V	
C 31	=	8,2 pF	500 V	NP0
C 32	=	Trimmer 3 - 10 pF		NP0
C 33	=	47 pF	500 V	NP0
C 34	=	1,0 nF	50 V	
C 35	=	1,0 nF	50 V	
C 36	=	2,2 pF	50 V	NP0
C 37	=	Trimmer 2 - 5 pF		NP0
C 38	=	1,0 nF	50 V	
C 39	=	1,0 nF	50 V	
C 40	=	Trimmer 2 - 5 pF		NP0
C 41	=	2,2 pF	50 V	NP0
C 42	=	3,9 pF	50 V	NP0
C 43	=	3,9 pF	50 V	NP0
C 44	=	1,8 pF	50 V	NP0
C 45	=	2,2 pF	50 V	NP0
C 46	=	2,2 pF	50 V	NP0
C 47	=	3,9 pF	50 V	NP0
C 48	=	3,9 pF	50 V	NP0
C 49	=	18 pF	50 V	NP0
C 50	=	18 pF	50 V	NP0
C 51	=	18 pF	50 V	NP0
C 52	=	22 pF	50 V	NP0
C 53	=	2,2 pF	50 V	NP0
C 54	=	1,0 nF	50 V	
C 55	=	4,7 µF	25 V	
C 56	=	33 µF	25 V	
C 57	=	10 nF	50 V	
C 58	=	1,0 nF	50 V	
C 59	=	1,0 nF	50 V	
C 60	=	1,0 nF	50 V	
C 61	=	220 nF	63 V	Multilayer
C 62	=	100 pF	50 V	NP0
C 63	=	100 pF	50 V	NP0
C 64	=	22 pF	50 V	NP0
C 65	=	56 pF	500 V	NP0
C 66	=	Trimmer 5 - 20 pF		NP0
C 67	=	100 pF	500 V	NP0
C 68	=	100 pF	500 V	NP0
C 69	=	390 pF	500 V	Mica
C 70	=	390 pF	500 V	Mica
C 71	=	22 pF	500 V	NP0
C 72	=	100 pF	500 V	Mica
C 73	=	2,2 nF	500 V	
C 74	=	Trimmer 5 - 20 pF		NP0
C 75	=	2,2 nF	500 V	
C 76	=	1,0 nF	50 V	
C 77	=	220 nF	63 V	Multilayer
C 78	=	4,7 pF	50 V	NP0
C 79	=	4,7 pF	50 V	NP0
C 80	=	1,0 nF	50 V	
C 81	=	Trimmer 3 - 10 pF		NP0
C 82	=	1,0 nF	50 V	
C 83	=	1,0 nF	50 V	
C 84	=	Trimmer 3 - 10 pF		NP0
C 85	=	3,9 pF	50 V	NP0
C 86	=	3,9 pF	50 V	NP0
C 87	=	18 pF	50 V	NP0
C 88	=	18 pF	50 V	NP0
C 89	=	18 pF	50 V	NP0
C 90	=	100 nF	50 V	
C 91	=	220 nF	63 V	Multilayer
C 92	=	470 µF	25V	
C 93	=	1,0 nF	50 V	
C 94	=	1,0 nF	50 V	
C 95	=	1,0 nF	50 V	
C 96	=	1,0 nF	50 V	
C 97	=	1,0 nF	50 V	

C 98	=	1,0 nF	50 V	
C 99	=	1,0 nF	50 V	
C 100	=	1,0 nF	50 V	
C 101	=	10 µF	25 V	
C 102	=	1,0 nF	50 V	
C 103	=	2,2 pF	50 V	NP0
C 104	=	1,0 nF	50 V	
C 105	=	1,0 nF	50 V	
C 106	=	1,0 nF	50 V	
C 107	=	10 nF	50 V	
C 108	=	10 nF	50 V	
C 109	=	10 nF	50 V	
C 110	=	10 µF	25 V	
C 111	=	10 nF	50 V	
C 112	=	10 nF	50 V	
C 113	=	4,7 µF	25 V	
C 114	=	10 nF	50 V	
C 115	=	10 nF	50 V	
R 1	=	12 KΩ	¼ W	
R 2	=	2,2 KΩ	¼ W	
R 3	=	1,0 KΩ	¼ W	
R 4	=	100 Ω	¼ W	
R 5	=	12 KΩ	¼ W	
R 6	=	2,2 KΩ	¼ W	
R 7	=	2,2 KΩ	¼ W	
R 8	=	1,0 Ω	½ W	
R 9	=	1,2 KΩ	¼ W	
R 10	=	6,8 Ω	¼ W	
R 11	=	10 Ω	¼ W	
R 12	=	470 Ω	¼ W	
R 13	=	1,0 KΩ	¼ W	
R 14	=	6,8 KΩ	¼ W	
R 15	=	3,3 KΩ	¼ W	
R 16	=	10 Ω	¼ W	
R 17	=	12 KΩ	¼ W	
R 18	=	2,2 KΩ	¼ W	
R 19	=	1,0 KΩ	¼ W	
R 20	=	100 Ω	¼ W	
R 21	=	2,2 KΩ	¼ W	
R 22	=	12 KΩ	¼ W	
R 23	=	2,2 KΩ	¼ W	
R 24	=	1,0 Ω	½ W	
R 25	=	1,2 KΩ	¼ W	
R 26	=	4,7 Ω	¼ W	
R 27	=	10 Ω	¼ W	
R 28	=	470 Ω	¼ W	
R 29	=	1,0 KΩ	¼ W	
R 30	=	220 Ω	¼ W	
R 31	=	6,8 KΩ	¼ W	
R 32	=	3,3 KΩ	¼ W	
R 33	=	1,0 KΩ	¼ W	
R 34	=	330 Ω	2 W	
R 35	=	1,0 KΩ	¼ W	
R 36	=	12KΩ	¼ W	
R 37	=	1,0 KΩ	¼ W	
R 38	=	2,2 KΩ	¼ W	
R 39	=	1,0 KΩ	¼ W	
R 40	=	1,0 KΩ	¼ W	
R 41	=	2,2 KΩ	¼ W	
R 42	=	12 KΩ	¼ W	
R 43	=	1,0 KΩ	¼ W	
R 44	=	1,0 KΩ	¼ W	
R 45	=	1,0 KΩ	¼ W	
R 46	=	100 Ω	¼ W	
R 47	=	2,2 KΩ	¼ W	
R 48	=	Trimmer 4,7 KΩ		
R 49	=	Trimmer 220 KΩ		
R 50	=	470 Ω¼ W		
R 51	=	1,0 KΩ	¼ W	
R 52	=	1,0 KΩ	¼ W	
R 53	=	22 KΩ	¼ W	
R 54	=	10 KΩ	¼ W	
R 55	=	1,0 KΩ	¼ W	
D 1	=	1N 4148		
D 2	=	OA 118		
D 3	=	1N 4004		
D 4	=	1N 4004		
D 5	=	1N 5400		
D 6	=	1N 4148		
D 7	=	1N 4148		
D 8	=	Zener 5,1 V ½ W		
D 9	=	1N 4148		
D 10	=	1N 4148		
D 11	=	1N 4148		
D 12	=	1N 4148		
D 13	=	1N 4004		
D 14	=	1N 4004		
D 15	=	1N 5400		
D 16	=	1N 4148		
D 17	=	1N 4148		
D 18	=	1N 4148		
D 19	=	1N 4148		
D 20	=	Zener 5,1 V ½W		
D 21	=	1N 5400		
D 22	=	1N 5400		
D 23	=	Red LED		
D 24	=	Green LED		
D 25	=	1N 4004		

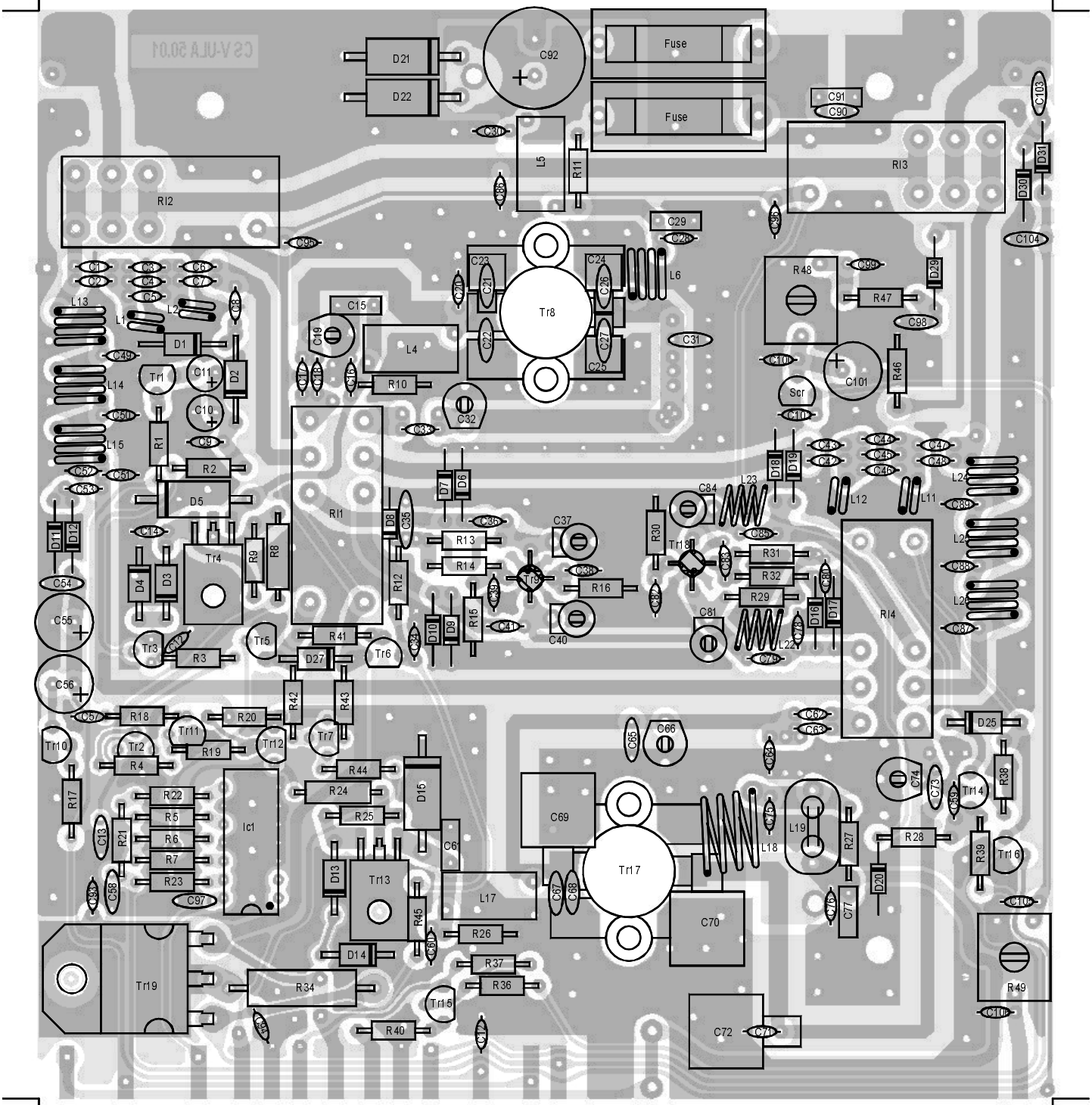
D 26 = Bicolor LED
D 27 = 1N 4004
D 28 = Bicolor LED
D 29 = 1N 4148
D 30 = 1N 4148
D 31 = 1N 4148
D 32 = Green LED
D 33 = Green LED
D 34 = Green LED
D 35 = Green LED
D 36 = Green LED
D 37 = Green LED
D 38 = Green LED
Tr 1 = BC 547
Tr 2 = BC 327
Tr 3 = BC 547
Tr 4 = BD 179
Tr 5 = BC 547
Tr 6 = BC 337
Tr 7 = BC 557
Tr 8 = BLU 45/12
Tr 9 = BF 966 S
Tr 10 = BC 547
Tr 11 = BC 547
Tr 12 = BC 327
Tr 13 = BD 179
Tr 14 = BC 547
Tr 15 = BC 557
Tr 16 = BC 337
Tr 17 = SD 1477
Tr 18 = BF 966 S
Tr 19 = TIP 142
Scr = P0102
Fuse = 2 x 6 A
IC 1 = CD 4013
IC 2 = KA 2288
L 1 = 2 turns wire ϕ 1 mm on ϕ 3 mm
L 2 = 2 turns wire ϕ 1 mm on ϕ 3 mm
L 3 = Strip line
L 4 = VK 200
L 5 = VK 200
L 6 = 2 turns wire ϕ 1 mm on ϕ 6 mm
L 7 = Strip line
L 8 = Strip line
L 9 = Strip line
L 10 = Strip line
L 11 = 2 turns wire ϕ 1 mm on ϕ 3 mm
L 12 = 2 turns wire ϕ 1 mm on ϕ 3 mm
L 13 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 14 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 15 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 16 = Strip line
L 17 = VK 200
L 18 = 3 turns wire ϕ 1,5 mm on ϕ 8 mm
L 19 = 2 turns wire ϕ 1,3 mm on ½ Balum
L 20 = Strip line
L 21 = Strip line
L 22 = 4 turns wire ϕ 0,8 mm on ϕ 5 mm
L 23 = 4 turns wire ϕ 0,8 mm on ϕ 5 mm
L 24 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 25 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 26 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 27 = Strip line
L 28 = Strip line
Rl 1 = 4052-12
Rl 2 = 4052-12
Rl 3 = 4052-12
Rl 4 = 4052-12
S 1 = Switch 3A (FM - SSB)
S 2 = Switch 3A (Simplex - Duplex)
S 3 = Switch 3A (ON - OFF)

RM Costruzioni Elettroniche
di Marchioni Davide & Daniele s.n.c.

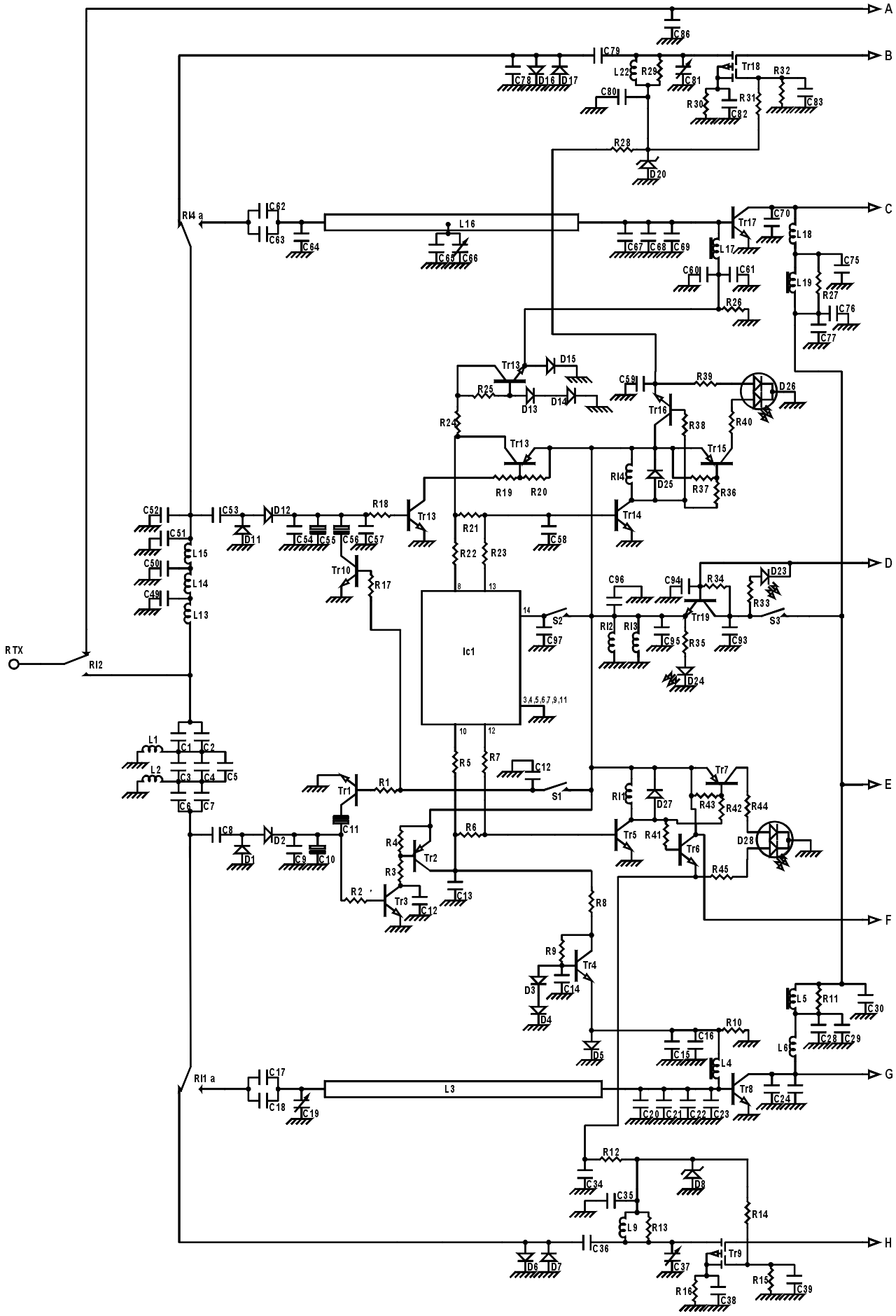
Via IV Novembre 215/5
Casella postale N° 33
40045 Ponte della Venturina (BO) ITALY
Tel +39 0534 60460
Fax +39 0534 60463
E-MAIL ufftec@rmitaly.com
http://www.rmitaly.com

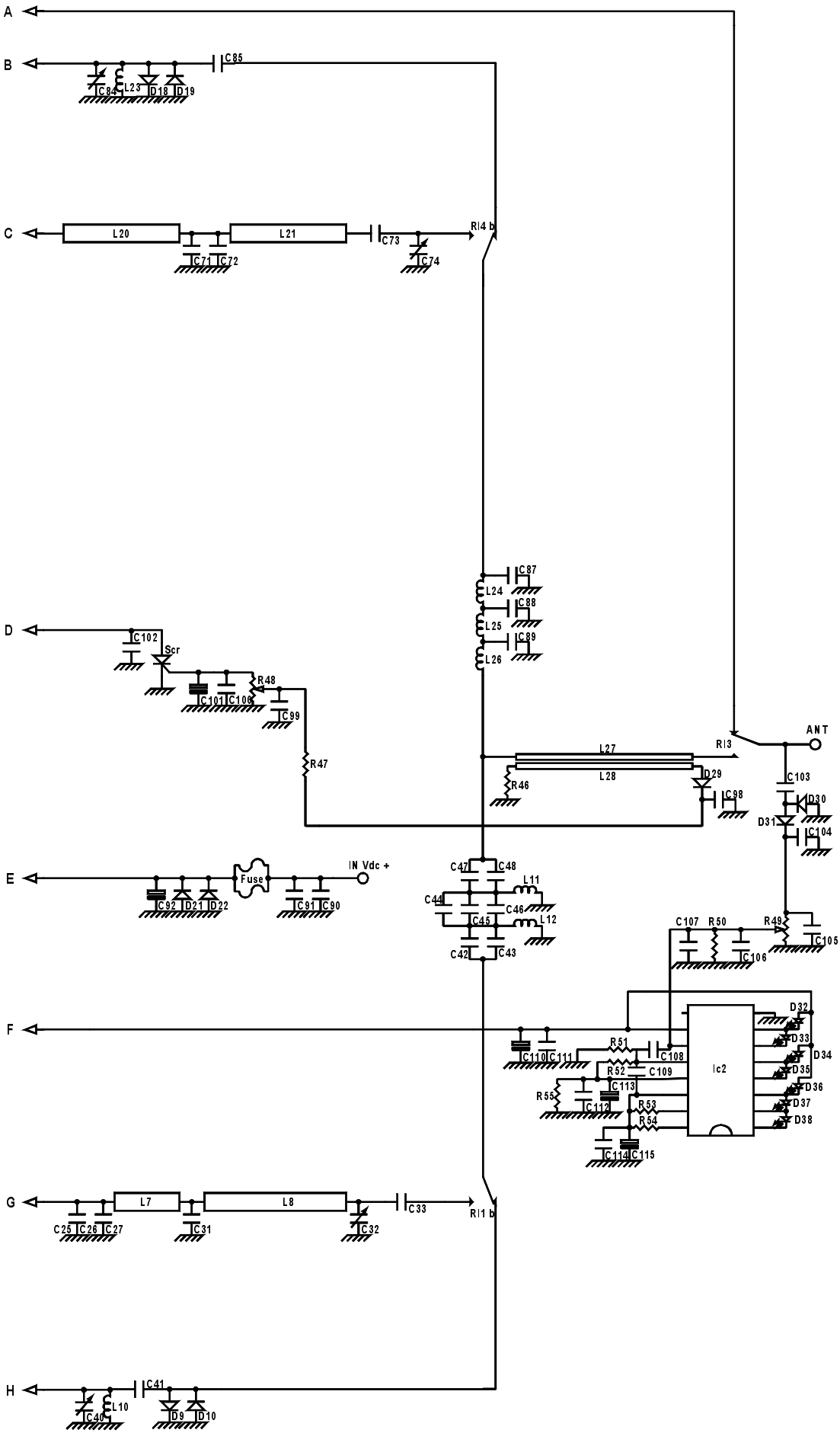
Mod. V-ULA 50 V-UHF linear amplifier

Version 1.02



Schematic diagram




A
B
C
D
E
F
G
H
C85
C84
L23
D18
D19
L20
L21
C73
C71
C72
C74
RI4 b
C87
L24
C88
L25
C89
L26
C102
Scr
R48
C101
C100
C99
R47
L27
L28
R46
D29
C98
RI3
ANT
C103
D30
D31
C104
IN Vdc +
Fuse
C92
D21
D22
C91
C90
C47
C48
L11
C44
C46
C45
L12
C42
C43
C107
R50
R49
C105
C106
D32
D33
D34
D35
D36
D37
D38
Ic2
R51
C108
R52
C109
C113
R55
C112
R53
R54
C110
C111
C114
C115
L7
L8
C33
C25
C26
C27
C31
C32
RI1 b
C41
L10
C40
D9
D10

List of components

C 1	=	3,9 pF	50 V	NP0
C 2	=	3,9 pF	50 V	NP0
C 3	=	2,2 pF	50 V	NP0
C 4	=	2,2 pF	50 V	NP0
C 5	=	1,8 pF	50 V	NP0
C 6	=	3,9 pF	50 V	NP0
C 7	=	3,9 pF	50 V	NP0
C 8	=	1,8 pF	50 V	NP0
C 9	=	1,0 nF	50 V	
C 10	=	4,7 µF	16 V	
C 11	=	33 µF	16 V	
C 12	=	1,0 nF	50 V	
C 13	=	1,0 nF	50 V	
C 14	=	1,0 nF	50 V	
C 15	=	220 nF	63 V	Multilayer
C 16	=	1,0 nF	50 V	
C 17	=	47 pF	50 V	NP0
C 18	=	47 pF	50 V	NP0
C 19	=	Trimmer 5 - 20 pF		NP0
C 20	=	10 pF	50 V	NP0
C 21	=	6,8 pF	50 V	NP0
C 22	=	6,8 pF	50 V	NP0
C 23	=	33 pF	300 V	Mica
C 24	=	33 pF	300 V	Mica
C 25	=	33 pF	300 V	Mica
C 26	=	12 pF	500 V	NP0
C 27	=	15 pF	500 V	NP0
C 28	=	100 pF	500 V	NP0
C 29	=	220 nF	63 V	Multilayer
C 30	=	1,0 nF	50 V	
C 31	=	8,2 pF	500 V	NP0
C 32	=	Trimmer 3 - 10 pF		NP0
C 33	=	47 pF	500 V	NP0
C 34	=	1,0 nF	50 V	
C 35	=	1,0 nF	50 V	
C 36	=	2,2 pF	50 V	NP0
C 37	=	Trimmer 2 - 5 pF		NP0
C 38	=	1,0 nF	50 V	
C 39	=	1,0 nF	50 V	
C 40	=	Trimmer 2 - 5 pF		NP0
C 41	=	2,2 pF	50 V	NP0
C 42	=	3,9 pF	50 V	NP0
C 43	=	3,9 pF	50 V	NP0
C 44	=	1,8 pF	50 V	NP0
C 45	=	2,2 pF	50 V	NP0
C 46	=	2,2 pF	50 V	NP0
C 47	=	3,9 pF	50 V	NP0
C 48	=	3,9 pF	50 V	NP0
C 49	=	18 pF	50 V	NP0
C 50	=	18 pF	50 V	NP0
C 51	=	18 pF	50 V	NP0
C 52	=	22 pF	50 V	NP0
C 53	=	2,2 pF	50 V	NP0
C 54	=	1,0 nF	50 V	
C 55	=	4,7 µF	25 V	
C 56	=	33 µF	25 V	
C 57	=	10 nF	50 V	
C 58	=	1,0 nF	50 V	
C 59	=	1,0 nF	50 V	
C 60	=	1,0 nF	50 V	
C 61	=	220 nF	63 V	Multilayer
C 62	=	100 pF	50 V	NP0
C 63	=	100 pF	50 V	NP0
C 64	=	22 pF	50 V	NP0
C 65	=	56 pF	500 V	NP0
C 66	=	Trimmer 5 - 20 pF		NP0
C 67	=	82 pF	500 V	NP0
C 68	=	100 pF	500 V	NP0
C 69	=	390 pF	500 V	Mica
C 70	=	390 pF	500 V	Mica
C 71	=	22 pF	500 V	NP0
C 72	=	100 pF	500 V	Mica
C 73	=	2,2 nF	500 V	
C 74	=	Trimmer 5 - 20 pF		NP0
C 75	=	2,2 nF	500 V	
C 76	=	1,0 nF	50 V	
C 77	=	220 nF	63 V	Multilayer
C 78	=	4,7 pF	50 V	NP0
C 79	=	4,7 pF	50 V	NP0
C 80	=	1,0 nF	50 V	
C 81	=	Trimmer 3 - 10 pF		NP0
C 82	=	1,0 nF	50 V	
C 83	=	1,0 nF	50 V	
C 84	=	Trimmer 3 - 10 pF		NP0
C 85	=	3,9 pF	50 V	NP0
C 86	=	3,9 pF	50 V	NP0
C 87	=	18 pF	50 V	NP0
C 88	=	18 pF	50 V	NP0
C 89	=	18 pF	50 V	NP0
C 90	=	100 nF	50 V	
C 91	=	220 nF	63 V	Multilayer
C 92	=	470 µF	25V	
C 93	=	1,0 nF	50 V	
C 94	=	1,0 nF	50 V	
C 95	=	1,0 nF	50 V	
C 96	=	1,0 nF	50 V	
C 97	=	1,0 nF	50 V	

C 98	=	1,0 nF	50 V	
C 99	=	1,0 nF	50 V	
C 100	=	1,0 nF	50 V	
C 101	=	10 µF	25 V	
C 102	=	1,0 nF	50 V	
C 103	=	2,2 pF	50 V	NP0
C 104	=	1,0 nF	50 V	
C 105	=	1,0 nF	50 V	
C 106	=	1,0 nF	50 V	
C 107	=	10 nF	50 V	
C 108	=	10 nF	50 V	
C 109	=	10 nF	50 V	
C 110	=	10 µF	25 V	
C 111	=	10 nF	50 V	
C 112	=	10 nF	50 V	
C 113	=	4,7 µF	25 V	
C 114	=	10 nF	50 V	
C 115	=	10 nF	50 V	
R 1	=	12 KΩ	¼ W	
R 2	=	2,2 KΩ	¼ W	
R 3	=	1,0 KΩ	¼ W	
R 4	=	100 Ω	¼ W	
R 5	=	12 KΩ	¼ W	
R 6	=	2,2 KΩ	¼ W	
R 7	=	2,2 KΩ	¼ W	
R 8	=	1,0 Ω	½ W	
R 9	=	1,2 KΩ	¼ W	
R 10	=	6,8 Ω	¼ W	
R 11	=	10 Ω	¼ W	
R 12	=	470 Ω	¼ W	
R 13	=	1,0 KΩ	¼ W	
R 14	=	6,8 KΩ	¼ W	
R 15	=	3,3 KΩ	¼ W	
R 16	=	10 Ω	¼ W	
R 17	=	12 KΩ	¼ W	
R 18	=	2,2 KΩ	¼ W	
R 19	=	1,0 KΩ	¼ W	
R 20	=	100 Ω	¼ W	
R 21	=	2,2 KΩ	¼ W	
R 22	=	12 KΩ	¼ W	
R 23	=	2,2 KΩ	¼ W	
R 24	=	1,0 Ω	½ W	
R 25	=	1,2 KΩ	¼ W	
R 26	=	4,7 Ω	¼ W	
R 27	=	10 Ω	¼ W	
R 28	=	470 Ω	¼ W	
R 29	=	1,0 KΩ	¼ W	
R 30	=	220 Ω	¼ W	
R 31	=	6,8 KΩ	¼ W	
R 32	=	3,3 KΩ	¼ W	
R 33	=	1,0 KΩ	¼ W	
R 34	=	330 Ω	2 W	
R 35	=	1,0 KΩ	¼ W	
R 36	=	12KΩ	¼ W	
R 37	=	1,0 KΩ	¼ W	
R 38	=	2,2 KΩ	¼ W	
R 39	=	1,0 KΩ	¼ W	
R 40	=	1,0 KΩ	¼ W	
R 41	=	2,2 KΩ	¼ W	
R 42	=	12 KΩ	¼ W	
R 43	=	1,0 KΩ	¼ W	
R 44	=	1,0 KΩ	¼ W	
R 45	=	1,0 KΩ	¼ W	
R 46	=	100 Ω	¼ W	
R 47	=	2,2 KΩ	¼ W	
R 48	=	Trimmer 4,7 KΩ		
R 49	=	Trimmer 220 KΩ		
R 50	=	470 Ω¼ W		
R 51	=	1,0 KΩ	¼ W	
R 52	=	1,0 KΩ	¼ W	
R 53	=	22 KΩ	¼ W	
R 54	=	10 KΩ	¼ W	
R 55	=	1,0 KΩ	¼ W	
D 1	=	1N 4148		
D 2	=	OA 118		
D 3	=	1N 4004		
D 4	=	1N 4004		
D 5	=	1N 5400		
D 6	=	1N 4148		
D 7	=	1N 4148		
D 8	=	Zener 5,1 V ½ W		
D 9	=	1N 4148		
D 10	=	1N 4148		
D 11	=	1N 4148		
D 12	=	1N 4148		
D 13	=	1N 4004		
D 14	=	1N 4004		
D 15	=	1N 5400		
D 16	=	1N 4148		
D 17	=	1N 4148		
D 18	=	1N 4148		
D 19	=	1N 4148		
D 20	=	Zener 5,1 V ½W		
D 21	=	1N 5400		
D 22	=	1N 5400		
D 23	=	Red LED		
D 24	=	Green LED		
D 25	=	1N 4004		

D 26 = Bicolor LED
D 27 = 1N 4004
D 28 = Bicolor LED
D 29 = 1N 4148
D 30 = 1N 4148
D 31 = 1N 4148
D 32 = Green LED
D 33 = Green LED
D 34 = Green LED
D 35 = Green LED
D 36 = Green LED
D 37 = Green LED
D 38 = Green LED
Tr 1 = BC 547
Tr 2 = BC 327
Tr 3 = BC 547
Tr 4 = BD 179
Tr 5 = BC 547
Tr 6 = BC 337
Tr 7 = BC 557
Tr 8 = BLU 45/12
Tr 9 = BF 966 S
Tr 10 = BC 547
Tr 11 = BC 547
Tr 12 = BC 327
Tr 13 = BD 179
Tr 14 = BC 547
Tr 15 = BC 557
Tr 16 = BC 337
Tr 17 = SD 1477
Tr 18 = BF 966 S
Tr 19 = TIP 142
Scr = P0102
Fuse = 2 x 6 A
IC 1 = CD 4013
IC 2 = KA 2288
L 1 = 2 turns wire ϕ 1 mm on ϕ 3 mm
L 2 = 2 turns wire ϕ 1 mm on ϕ 3 mm
L 3 = Strip line
L 4 = VK 200
L 5 = VK 200
L 6 = 2 turns wire ϕ 1 mm on ϕ 6 mm
L 7 = Strip line
L 8 = Strip line
L 9 = Strip line
L 10 = Strip line
L 11 = 2 turns wire ϕ 1 mm on ϕ 3 mm
L 12 = 2 turns wire ϕ 1 mm on ϕ 3 mm
L 13 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 14 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 15 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 16 = Strip line
L 17 = VK 200
L 18 = 3 turns wire ϕ 1,5 mm on ϕ 8 mm
L 19 = 2 turns wire ϕ 1,3 mm on ½ Balum
L 20 = Strip line
L 21 = Strip line
L 22 = 4 turns wire ϕ 0,8 mm on ϕ 5 mm
L 23 = 4 turns wire ϕ 0,8 mm on ϕ 5 mm
L 24 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 25 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 26 = 4 turns wire ϕ 1 mm on ϕ 5 mm
L 27 = Strip line
L 28 = Strip line
Rl 1 = 4052-12
Rl 2 = 4052-12
Rl 3 = 4052-12
Rl 4 = 4052-12
S 1 = Switch 3A (FM - SSB)
S 2 = Switch 3A (Simplex - Duplex)
S 3 = Switch 3A (ON - OFF)