TB1012 DIGITAL SERVICES SIMULATOR

This unit enables the direct connection of two synchronous devices having the CCITT X.21 (V11) interface. The TB1012 has four data speeds selectable by internal jumper socket links. The full duplex connection is identical in both directions which means that the unit may be connected either way way round in a circuit without affecting its operation. Thus both interface connectors are identical so are not labelled by number.

USE

1. Disconnect from the mains supply.
2. Remove four screws and cover to gain access to the speed setting links.
3. Set the data speed to one of the four values 48, 56, 64 or 128 kbps by setting the internal socket links as shown in figures 1 and 3.
4. Replace the cover and four fixing screws.
5. Connect the unit to a suitable mains supply. This is normally 240v 50HZ, but units are available for other mains voltages if specified at the time of ordering.
6. Front panel momentary action push button switches are used to set the receive data outputs to the mark idle state and to delete the signal timing outputs as indicated on the front panel legend.
   When in the mark idle state a receive data output has pin 4 high and pin 11 low. In the deleted state a timing output has pin 13 high and pin 6 low.

MAINTENANCE

The mains fuse is housed in a PCB mounted fuseholder shown on figure 1.
To replace the fuse first disconnect from the mains supply then remove the four screws and outer cover.
The fuse is a 20mm 250ma A/S (SLO BLOW) type.

Any other maintenance should only be carried out by suitably trained staff or by returning the unit to the supplier.

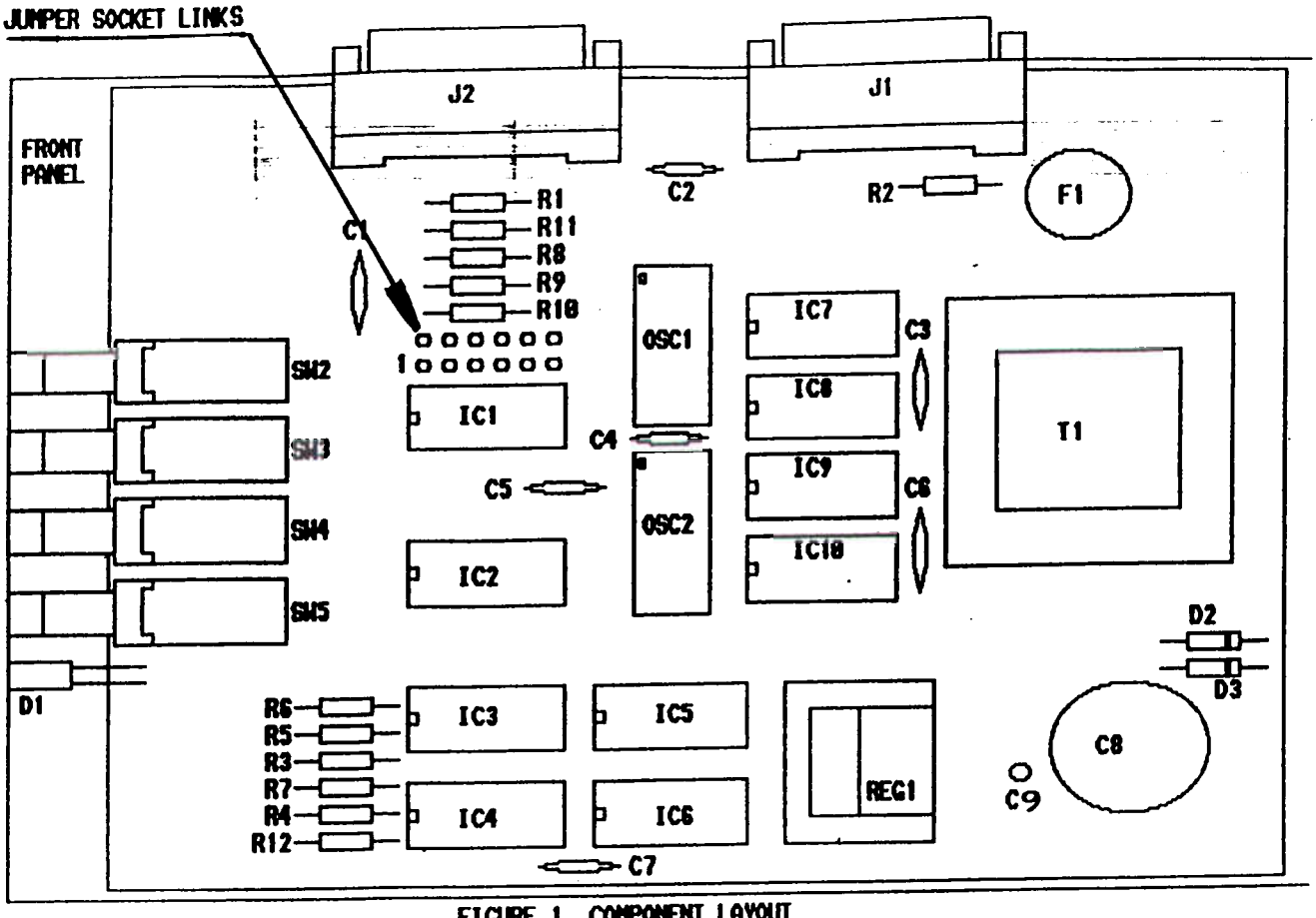


FIGURE 1 COMPONENT LAYOUT

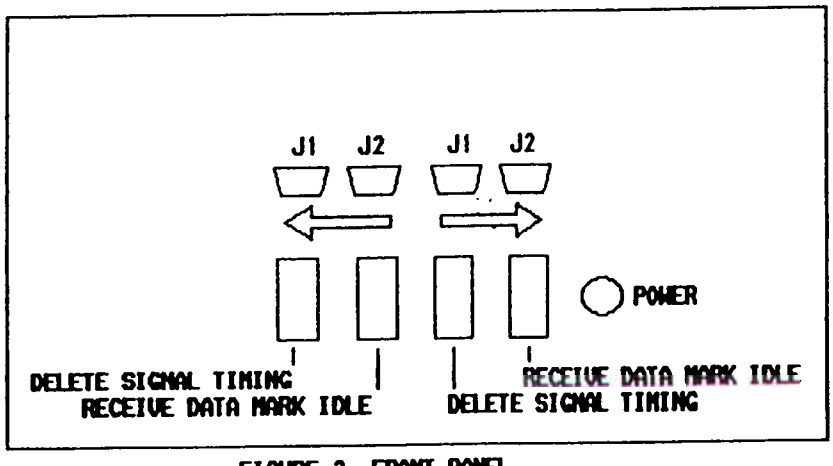
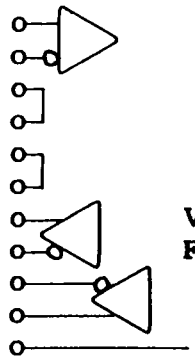


FIGURE 2 FRONT PANEL

ORIENTATION OF UNIT AS IN FIGURE 1
FIGURE 3 JUMPER SOCKET LINK SETTINGS

DATA IN	TRANSMIT A	2	8	1
DATA IN	TRANSMIT B	9		
	CONTROL A	3		
	INDICATION A	5		
	CONTROL B	10	15	10
	INDICATION B	12		
DATA OUT	RECEIVE A	4	VIEW OF CONNECTOR	
DATA OUT	RECEIVE B	11	FROM OUTSIDE	
CLOCK OUT	SIG TIMING A	6		
CLOCK OUT	SIG TIMING B	13		
	GROUND	8		



Both connectors are identical DB15S female

Figure 4 Interface connectors

SPECIFICATION

Weight:	1.3 kg
Dimensions:	200mm x 115mm x 65mm overall
Mains supply:	240 VAC + - 10% 50 HZ 6 VA Other values available
Ambient Temperature:	0 to 40 degrees C
Relative humidity:	5 to 95 % non condensing
Connectors:	Two DB15S female
Interface:	X21 (V11)
Speed:	48, 56, 64, 128 Kbps

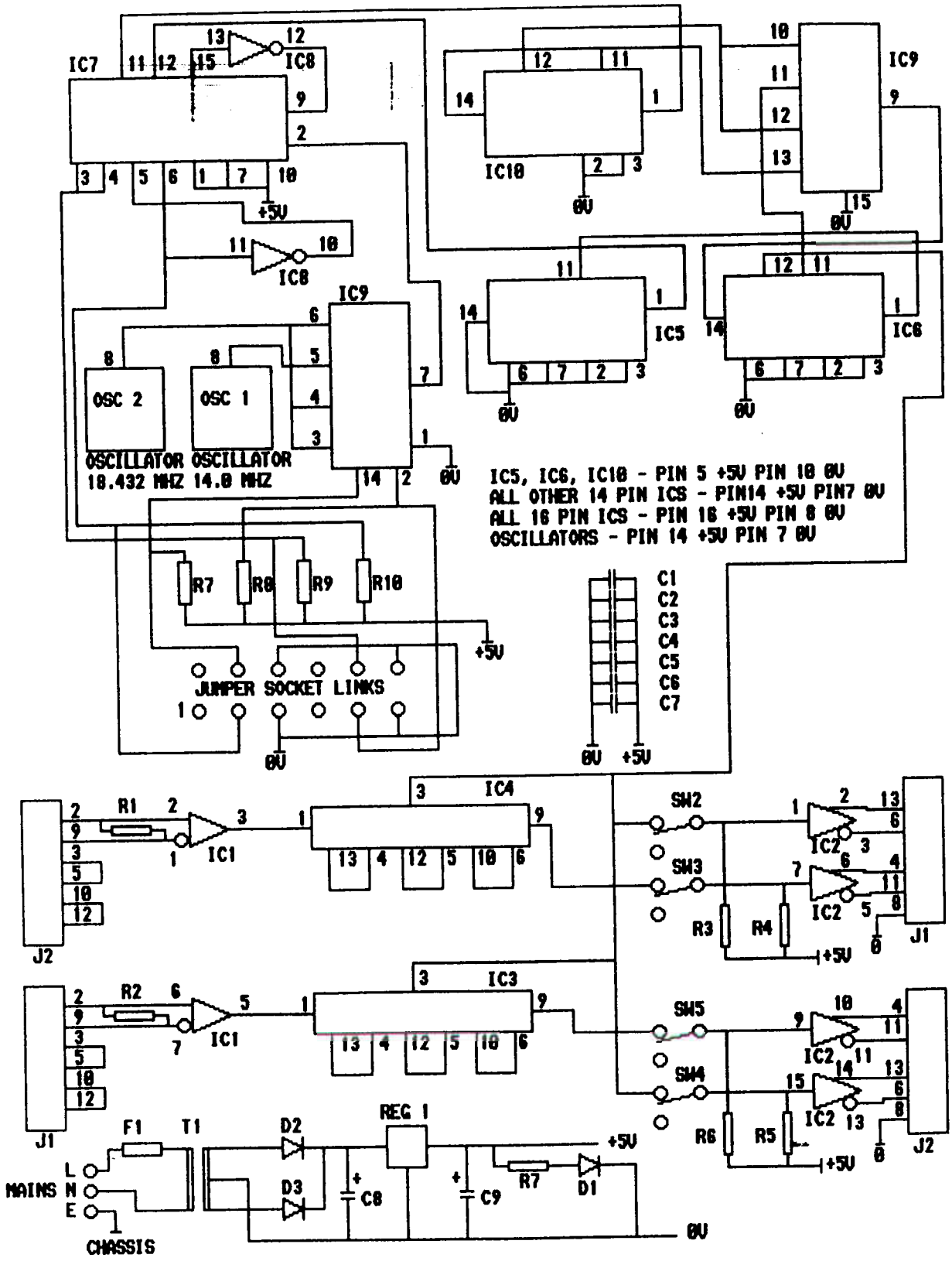


FIGURE 5 CIRCUIT DIAGRAM

PARTS LIST

IC1	26LS32
IC2	26LS31
IC3, IC4	4006
IC5, IC6	74LS90
IC7	74LS161
IC8	74LS04
IC9	74LS153
IC10	74LS93
REG1	REGULATOR 7805
D1	LED RED TIL220
D2, D3	IN4002
C1 TO C7	47N 10V MIN CERAMIC
C8	1000MF 25V ELECTROLYTIC
C9	1MF 10V MIN TANTALUM
R1, R2	120R0 0.25W 1%
R3 TO R6	10K0 0.25W 5%
R7	470R0 0.25W 5%
R8 TO R12	10K0 0.25W 5%
OSC1	14.0 MHZ TTL OUTPUT OSCILLATOR EQX0-1100U
OSC2	18.432 MHZ TTL OUTPUT OSCILLATOR EQX0-1100U
SW2 TO SW5	SWITCH MOMENTARY SUN 2PM
J1, J2	15 WAY D TYPE SOCKET
T1	120V + 120V PRIMARY 9V + 9V SECONDARY 6VA
F1	FUSE 250 MA 20 MM ANTISURGE