

From:

**M. Purnell
28, Edinburgh Road
Little Lever
BOLTON
BL3 1TG
Tel: 01204 792295**

To:

**John Lamb
Viamed Limited
15, Station Road
Cross Hills
Keighley
West Yorkshire
BD20 7DT**

Dear John,

Enclosed you will find 6 TMS77C82 chips.

Over the years I have never had any problems programming the chips. Suddenly the last 3 deliveries have resulted in the inability to program those enclosed, which is an approximate 10% failure rate. I follow standard anti-static procedures as always but am at a loss to understand the reason. Perhaps it is a series of batch problems. Could I suggest we change our supplier to a different make via, say Farnell.

I doubt whether RS will change the chips but it does leave me short to complete the order of 50 presently being made.

I hope yourself and Jean are well and have a good new year.

Regards,



Malcolm

Programming Service

A service covering Programmable Logic, Memory and Microcontroller families. Devices can be programmed at the time of order or alternatively the customer can provide their own chips for programming to individual requirements. (A charge of £0.50 each will be made for devices supplied by the customer which require erasing). Please specify clearly file names and format when submitting information to the programming department. Information to include configuration - Binary - Hex - etc., appropriate checksum and reference to code protection. Trade Counter orders accepted subject to prior arrangement.

All packages and correspondence should be addressed for the attention of:

The Programming Department,
Farnell Ltd,
Castleton Road,
Leeds,
LS12 2EN.

Fax: 0113 234 7174

Minimum Order Charge £20.00

Priority 24 hour despatch £30.00 (subject to prior arrangement).

MASTER PROM/FLOPPY DISK

Set-Up Charge per Program	Devices Supplied by Farnell at the Time of Programming	Devices Supplied by Customer at the Time of Programming	Other Charges
1+ £10.00	£0.50 (1+) £0.35 (25+) £0.20 (100+) £0.15 (300+) £0.12 (1K+)	£1.25 per device	NONE
5+ £5.00			

TRUTH TABLE

Set-Up Charge per Program	Devices Supplied by Farnell at the Time of Programming	Devices Supplied by Customer at the Time of Programming	Other Charges
£10.00	£0.50 (1+) £0.35 (25+) £0.20 (100+) £0.15 (300+) £0.12 (1K+)	£1.25 per device	£4.75 per 32 x 8-bit word block irrespective of bits programmed

HEXADECIMAL LISTING

Set-Up Charge per Program	Devices Supplied by Farnell at the Time of Programming	Devices Supplied by Customer at the Time of Programming	Other Charges
£10.00	£0.50 (1+) £0.35 (25+) £0.20 (100+) £0.15 (300+) £0.12 (1K+)	£1.25 per device	£2.50 per 32 x 8-bit word block irrespective of bits programmed

PROGRAMMABLE FUSE LOGIC ARRAYS

Set-Up Charge per Program	Devices Supplied by Farnell at the Time of Programming	Devices Supplied by Customer at the Time of Programming	Other Charges
£10.00	£0.50 (1+) £0.35 (25+) £0.20 (100+) £0.15 (300+) £0.12 (1K+)	£1.25 per device	£3.50 per 32 lines

EPROMs, EEPROMs and FLASH Memory

EPROMs and PROMs (OTP)

16K	Mfrs.	Pins	Description	Vcc = 5V±	Mfrs. List No.	Order Code	1+	25+	100+	300+
2716	ST	24	16K (2K x 8) EPROM - 450ns Access. 25V VPP	5%	M2716F1	393-721	8.61	5.38	3.59	---
27C16	FCH	24	16K (2K x 8) CMOS EPROM - 150ns Access. 12.75V VPP	10%	NMC27C16BQ150	246-700	2.76	2.07	1.77	---
27C16	FCH	24	16K (2K x 8) CMOS EPROM - 200ns Access. 12.75V VPP	10%	NMC27C16BQ200	3V 246-712	2.75	2.00	1.69	---
32K										
2732	ST	24	32K (4K x 8) EPROM - 250ns Access. 21V VPP	5%	M2732AF1	393-794	10.81	6.49	3.86	---
2732	ST	24	32K (4K x 8) EPROM - 200ns Access. 21V VPP	5%	M2732AF1	393-800	7.70	5.20	3.60	---
27C32	FCH	24	32K (4K x 8) CMOS EPROM - 150ns Access. 12.75V VPP	10%	NMC27C32BQ150	3V 393-824	3.67	2.75	2.20	---
27C32	FCH	24	32K (4K x 8) CMOS EPROM - 200ns Access. 12.75V VPP	10%	NMC27C32BQ200	3V 393-836	3.14	2.44	2.00	---
64K										
2764	ST	28	64K (8K x 8) EPROM - 300ns Access. 12.5V VPP	5%	M2764A3F1	393-897	4.95	3.20	2.50	---
2764	ST	28	64K (8K x 8) EPROM - 250ns Access. 12.5V VPP	5%	M2764AF1	393-915	6.65	4.16	2.77	---
27C64	AMD	28	64K (8K x 8) CMOS EPROM - 70ns Access. 12.75V VPP	10%	AM27C64-70DC	671-423	5.94	4.57	3.56	---
27C64	AMD	28	64K (8K x 8) CMOS EPROM - 90ns Access. 12.75V VPP	10%	AM27C64-90DC	671-435	3.75	2.38	2.20	---
27C64	AMD	32	64K (8K x 8) CMOS OTP PROM - 90ns Access. 12.75V VPP (PLCC)	10%	AM27C64-90JC	671-447	3.24	2.12	2.02	---
27C64	AMD	28	64K (8K x 8) CMOS OTP PROM - 90ns Access. 12.75V VPP (PLCC)	10%	AM27C64-90PC	671-459	4.18	2.75	2.35	---
27C64	AMD	28	64K (8K x 8) CMOS EPROM - 120ns Access. 12.75V VPP	10%	AM27C64-120DC	203-920	2.95	1.96	1.82	---
27C64	AMD	32	64K (8K x 8) CMOS OTP PROM - 120ns Access. 12.75V VPP	10%	AM27C64-120JC	671-400	2.81	1.87	1.73	---
27C64	AMD	32	64K (8K x 8) CMOS OTP PROM - 120ns Access. 12.75V VPP	10%	AM27C64-120PC	563-020	3.30	2.53	2.21	---
27C64	AMD	28	64K (8K x 8) CMOS EPROM - 150ns Access. 12.75V VPP	10%	AM27C64-150DC	203-385	3.81	2.75	2.27	---
27C64	AMD	28	64K (8K x 8) CMOS OTP PROM - 150ns Access. 12.75V VPP	10%	AM27C64-150PC	671-411	2.50	1.73	1.65	---
27C64	ST	28	64K (8K x 8) CMOS EPROM - 150ns Access. 12.5V VPP	10%	M27C64A15F1	594-489	5.32	3.19	1.90	---
27C64	ST	28	64K (8K x 8) CMOS EPROM - 200ns Access. 12.5V VPP	10%	M27C64A20F1	270-416	3.52	2.35	1.62	---
27C64	ST	28	64K (8K x 8) CMOS EPROM - 200ns Access. 12.5V VPP (IND TEMP)	10%	M27C64A20F6	705-287	3.73	2.48	1.72	---
27C64	ST	28	64K (8K x 8) CMOS EPROM - 250ns Access. 12.5V VPP	10%	M27C64A25F1	270-428	5.32	3.19	1.90	---
27C64	FCH	28	64K (8K x 8) CMOS OTP PROM - 150ns Access. 12.5V VPP	10%	NMC27C64N150	3V NEW283-733	1.57	1.22	1.00	---
27C64	FCH	28	64K (8K x 8) CMOS OTP PROM - 200ns Access. 13V VPP	10%	NMC27C64N200	3V 393-952	1.37	1.10	0.92	---
27C64	FCH	28	64K (8K x 8) CMOS EPROM - 150ns Access. 13V VPP	10%	NMC27C64Q15	3V 393-976	2.64	1.98	1.59	---
27C64	FCH	28	64K (8K x 8) CMOS EPROM - 200ns Access. 13V VPP	10%	NMC27C64Q20	3V 393-988	2.27	1.76	1.44	---
128K										
27128	INTEL	28	128K (16K x 8) EPROM - 200ns Access. 12.5V VPP	5%	D27128A2	394-129†	4.80	4.36	3.43	---
27128	ST	28	128K (16K x 8) EPROM - 250ns Access. 12.5V VPP	5%	M27128AF1	394-142	5.54	3.69	2.56	---
27128	ST	28	128K (16K x 8) EPROM - 200ns Access. 12.5V VPP	5%	M27128AF1	394-154	8.38	5.03	2.99	---
27C128	AMD	28	128K (16K x 8) CMOS EPROM - 70ns Access. 12.75V VPP	10%	AM27C128-70DC	703-205	4.46	3.16	2.80	---
27C128	AMD	28	128K (16K x 8) CMOS EPROM - 90ns Access. 12.75V VPP	10%	AM27C128-90DC	703-217	3.95	2.57	2.25	---
27C128	AMD	32	128K (16K x 8) CMOS OTP PROM - 90ns Access. 12.75V VPP (PLCC)	10%	AM27C128-90JC	671-230	3.24	2.40	2.05	---
27C128	AMD	32	128K (16K x 8) CMOS OTP PROM - 90ns Access. 12.75V VPP	10%	AM27C128-90PC	671-241	4.90	3.67	2.88	---
27C128	AMD	28	128K (16K x 8) CMOS EPROM - 120ns Access. 12.75V VPP	10%	AM27C128-120DC	203-932	3.15	2.20	2.00	---
27C128	AMD	32	128K (16K x 8) CMOS OTP PROM - 120ns Access. 12.75V VPP (PLCC)	10%	AM27C128-120JC	787-450	2.95	1.90	1.75	---
27C128	AMD	28	128K (16K x 8) CMOS OTP PROM - 120ns Access. 12.75V VPP	10%	AM27C128-120PC	562-993	3.74	3.10	2.38	---
27C128	AMD	28	128K (16K x 8) CMOS EPROM - 150ns Access. 12.75V VPP	10%	AM27C128-150DC	203-403	4.07	2.53	2.21	---
27C128	AMD	32	128K (16K x 8) CMOS OTP PROM - 150ns Access. 12.75V VPP (PLCC)	10%	AM27C128-150JC	671-216	3.74	2.20	1.84	---
27C128	AMD	28	128K (16K x 8) CMOS OTP PROM - 150ns Access. 12.75V VPP	10%	AM27C128-150PC	671-228	4.07	2.53	2.21	---
27C128	AMD	28	128K (16K x 8) CMOS EPROM - 200ns Access. 12.75V VPP	10%	AM27C128-200DC	203-397	3.96	2.42	2.16	---
27C128	CYP	28	128K (16K x 8) CMOS OTP PROM - 70ns Access. 12.5V VPP	10%	CY27C128-70PC	571-416	3.08	2.24	1.90	---
27C128	CYP	28	128K (16K x 8) CMOS EPROM - 70ns Access. 12.5V VPP	10%	CY27C128-70WC	571-404	3.28	2.39	2.02	---
27C128	FCH	28	128K (16K x 8) CMOS EPROM - 120ns Access. 12.75V VPP	10%	NM27C128Q120	NEW283-812	2.06	1.65	1.37	---
27C128	FCH	28	128K (16K x 8) CMOS EPROM - 150ns Access. 12.75V VPP	10%	NM27C128Q150	NEW283-824	2.06	1.50	1.27	---
27C128	FCH	28	128K (16K x 8) CMOS EPROM - 200ns Access. 12.75V VPP	10%	NM27C128Q200	205-412	2.52	2.10	1.80	---

† Available until stocks are exhausted

Continued

				Price Each					
				Mfrs. List No.	Order Code	1+	25+	100+	300+
Z8	Mfr.	Pins	Description						
86C91	ZILOG	40	8-bit CMOS CPU, 236 bytes RAM, 24 I/O lines, UART 16MHz, (ROMless, up to 64K bytes of external ROM).....	Z86C91-16PSC	.569-987	9.50	8.08	6.93	---
86E	ZILOG	40	8-bit CMOS CPU, 8Kb OTP PROM, 256 bytes RAM — 12MHz.....	Z86E21-12PSC	.505-134	17.00	14.70	12.14	---
8681	ZILOG	40	8-bit NMOS CPU - 8MHz (ROMless, up to 64K bytes of external ROM/RAM).....	Z08681-08PSC	.504-889	3.60	2.54	2.21	---
8085									
80C85	OKI	40	8-bit CMOS CPU, 0.8µs instruction cycle, 5MHz.....	MSM80C85AHR5	.483-450	6.00	4.80	3.80	---
80C85	OKI	44	8-bit CMOS CPU, 0.8µs instruction cycle, 5MHz (PLCC Package).....	MSM80C85AHJS	.641-042	5.18	4.71	4.32	---
8088, 80188									
80C188	INTEL	68	8-bit CMOS CPU, 12MHz Clock (enhanced 80C88), 16-bit internal architecture (PLCC Package).....	N80C188XL12	.205-801	11.08	8.52	7.39	---
80C188	INTEL	68	8-bit CMOS CPU, 20MHz Clock (enhanced 80C88), 16-bit internal architecture (PLCC Package).....	N80C188XL20	.631-826	9.95	7.25	6.65	---
80C188	AMD	68	8-bit CMOS CPU, 12MHz Clock (enhanced 80C88), 16-bit internal architecture (PLCC Package).....	N80C188-12	.671-800	10.00	8.10	7.20	---
80C188	AMD	68	8-bit CMOS CPU, 16MHz Clock (enhanced 80C88), 16-bit internal architecture (PLCC Package).....	N80C188-16	.671-812	11.08	8.52	7.39	---
82C84	HAR	18	CMOS Clock Generator and Driver — 25MHz.....	CP82C84A	.527-830..	2.97	1.86	1.52	1.39
82C84	OKI	18	CMOS Clock Generator and Driver — 8MHz.....	MSM82C84A-2RS	.403-714..	6.24	4.80	3.95	---
77C82									
77C82	TI	44	8-bit CMOS Microcontroller, 8Kb OTP PROM, 256 bytes RAM, 32 I/O lines — 6MHz (PLCC Package).....	TMS77C82FNL	.485-251	9.24	7.70	6.60	6.16
77C82	TI	40	8-bit CMOS Microcontroller, 8Kb OTP PROM, 256 bytes RAM, 32 I/O lines — 6MHz.....	TMS77C82NL	.389-547	9.24	7.70	6.60	6.16

81C90/91 Stand alone Full CAN Controller

These devices provide complete autonomous transmission and reception of messages using CAN protocol.

Features:

- CAN controller data rate up to 1Mbaud
- Complies with CAN spec V2.0 partA
- Up to 16 messages simultaneously
- Message identifier
- Parallel and Serial host interfaces
- Programmable clock output

				Price Each				
				Mfrs. List No.	Order Code	1+	25+	100+
81C90	SIE	44	Stand Alone Full CAN controller (PLCC).....	SAE81C90N	.688-137	6.93	4.62	3.89
81C91	SIE	28	Stand Alone Full CAN controller (PLCC).....	SAE81C91N	.688-149	6.07	4.05	3.40

8-Bit Microprocessor Support ICs

				Price Each					
				Mfrs. List No.	Order Code	1+	25+	100+	300+
1802	Mfr.	Pins	Description						
1854	HAR	40	Programmable UART, full or half duplex operation. Baud rate to 200K bits/second at 5V.....	CDP1854ACE	.389-572	5.56	3.71	3.18	3.10
6502									
65C21	R'WELL	40	CMOS Peripheral Interface Adaptor, 2MHz.....	R65C21P2	.389-596	4.35	3.40	2.82	---
65SC22	CMD	40	CMOS Versatile Interface Adaptor, 1MHz.....	G65SC22P1	.562-762	3.66	3.05	2.62	2.40
65SC22	CMD	40	CMOS Versatile Interface Adaptor, 2MHz.....	G65SC22P2	.562-774	3.66	3.05	2.62	2.40
65C22	R'WELL	40	CMOS Versatile Interface Adaptor, 2MHz.....	R65C22P2	.389-602	6.15	4.78	3.89	3.40
65C22	R'WELL	40	CMOS Versatile Interface Adaptor, 3MHz.....	R65C22P3	.389-614	5.99	4.80	3.90	3.55
65C51	HAR	28	CMOS Asynchronous Communications Interface Adaptor, 1MHz.....	CDP65C51E1	.389-705	3.58	2.24	1.83	1.68
65C51	HAR	28	CMOS Asynchronous Communications Interface Adaptor, 2MHz.....	CDP65C51E2	.389-717	4.13	2.58	2.10	1.93
65C51	HAR	28	CMOS Asynchronous Communications Interface Adaptor, 4MHz.....	CDP65C51E4	.631-838	4.61	3.71	3.01	2.77
65C51	R'WELL	28	CMOS Asynchronous Communications Interface Adaptor, 2MHz.....	R65C51P2	.389-626	5.83	4.73	3.79	3.50
65C52	R'WELL	40	CMOS Dual Asynchronous Communications Interface Adaptor, 2MHz.....	R65C52P2	.459-902	12.31	9.45	7.58	6.80
6520	R'WELL	40	NMOS Peripheral Interface Adaptor, 2MHz.....	R6520AP	.389-584	4.34	3.25	2.79	2.60
6522	R'WELL	40	NMOS Versatile Interface Adaptor, 2MHz.....	R6522AP	.389-651	5.19	4.22	3.79	3.45
6545	R'WELL	40	NMOS CRT Controller, 2MHz.....	R6545AP	.389-699	6.05	5.04	4.14	3.75
6551	R'WELL	28	NMOS Asynchronous Communications Interface Adaptor, 2MHz.....	R6551AP	.459-562	4.28	3.61	2.98	---
6800									
63B21	HIT	40	CMOS Peripheral Interface Adaptor — 2MHz.....	HD63B21P	.246-360	4.51	3.33	2.76	2.60
63B40	HIT	28	CMOS Programmable Timer — 2MHz.....	HD63B40P	.203-245	4.90	4.08	3.50	3.27
63B45	HIT	40	CMOS CRT Controller — 2MHz.....	HD63B45P	.203-221	5.68	4.74	4.06	3.79
63B50	HIT	24	CMOS Asynchronous Communications Interface Adaptor — 2MHz.....	HD63B50P	.246-372	4.57	3.53	2.95	2.74
6321	HIT	40	CMOS Peripheral Interface Adaptor — 1MHz.....	HD6321P	.389-754	4.21	3.13	2.66	2.50
6340	HIT	28	CMOS Programmable Timer — 1MHz.....	HD6340P	.389-766	4.10	3.40	2.90	2.74
6350	HIT	24	CMOS Asynchronous Communications Interface Adaptor — 1MHz.....	HD6350P	.389-778	3.71	3.00	2.77	2.57
68A21	ST	40	Peripheral Interface Adaptor — 1.5MHz.....	EF68A21P	.389-780	1.68	1.27	1.00	---
68B21	ST	40	Peripheral Interface Adaptor — 2MHz.....	EF68B21P	.389-791	1.75	1.32	1.05	---
68B21	HIT	40	Peripheral Interface Adaptor — 2MHz.....	HD68B21P	.389-808	2.84	2.00	1.72	1.65
6821	ST	40	Peripheral Interface Adaptor — 1MHz.....	EF6821P	.389-810	1.61	1.22	0.96	---
68B40	ST	28	Programmable Timer — 2MHz.....	EF68B40P	.389-845	2.28	1.72	1.36	---
6840	ST	28	Programmable Timer — 1MHz.....	EF6840P	.389-857	2.01	1.52	1.20	---
68A50	HIT	24	Asynchronous Communications Interface Adaptor — 1.5MHz.....	HD68A50P	.389-900	2.35	1.92	1.59	1.47
68B50	ST	24	Asynchronous Communications Interface Adaptor — 2MHz.....	EF68B50P	.389-912	1.68	1.27	1.00	---
6850	ST	24	Asynchronous Communications Interface Adaptor — 1MHz.....	EF6850P	.389-924	1.50	1.13	0.90	---
68B488	MOT	40	General Purpose Interface Adaptor — 2MHz, use with MC3447P.....	MC68B488P	.482-900	28.50	24.00	21.00	---

Continued



European Product Information Center

Media	Languages	Contact number	Operating time	Remark
Phone	Francais	+33 - (0)1 - 30 70 11 64	see business hours below	-
	English	+44 - (0)1604 663399	see business hours below	-
	Italiano	+33 - (0)1 - 30 70 11 67	see business hours below	-
	Deutsch	+49 - (0)8161 - 803311	see business hours below	-
Fax	all languages	+33 - (0)1 - 30 70 10 32	24 hours reception	Processed during business hours.
E-Mail	all languages	Send E-mail to us <i>EPIC@TI.COM</i>	24 hours reception	Processed during business hours. Please use the <u>standard form</u> for your first inquiry to the E-PIC. This assures that we have all your details in order to process your request.
BBS	-	+33 - (0)1 - 30 70 11 99	24 hours	-
Internet	-	http://www.ti.com	24 hours	-
Mail	all languages	Texas Instruments France European Product Information Center 8-10, avenue Morane Saulnier - BP 67 78141 Velizy-Villacoublay Cedex FRANCE	-	-

Business hours (Central European Time)

From: John Lamb <info@viamed.co.uk>
To: Epic@TI.com <Epic@TI.com>
Date: 03 February 1999 11:59
Subject: TMSTTC82

Dear Sir,

For several years we have been using TMS77C82 IC's.
Standard ESD procedures have been followed.
The programme has not been changed.
The programmer unit has not been changed.
The programmer is the same person.

In the last 3 batches we have received we have encountered a failure rate
of approximately 10%.
The programme always stops at the same address EB00
This address is not actively used as part of the programme.
The information on the IC's is as follows.

TMS77C82NL
1986 TI
52521 BKW W829

The distributor has been contacted but the advice offered did not cure the
problem.

Please reply as soon as possible

John S Lamb
Managing Director
Viamed Ltd
<http://www.viamed.co.uk>

From: Ludovic de Graaf <epic@ti.com>
To: info@viamed.co.uk <info@viamed.co.uk>
Date: 08 February 1999 09:06
Subject: E-PIC Texas Instruments case: 3101151

Dear Mr. Lamb,

Thank you for contacting Texas Instruments.

Please give us lot trace codes that work and lot trace codes where you see difficulties.

Note: This device is either obsolete or not OK to order.

In case you have any other questions please contact us again.

Best regards,

Ludovic de Graaf, TI Europe Product Information Center. E-mail:
epic@ti.com



VIAMED

Page 1



From: John Lamb <info@viamed.co.uk>
To: epic@ti.com <epic@ti.com>
Date: 12 February 1999 10:38
Subject: E-PIC case 3101151

Dear Mr de Graaf

Thanks for the reply.

Devices with the same lot codes wok or fail in a random fashion.

The codes I have from the devices are as follows

52521 BKW W829
21299 BKW W839
82865 BKW W832
00554 BKW W835

As you can see the batches are random and the failure is 10%
The other 90% function correctly as they have done in the past.

We are now concerned at your comment that these devices are obsolete..
They are currently being purchased from two of the largest distributors in
the UK and as yet we have not been informed of any cessation of supply. We
currently use them in a Medical device and would appreciate and honest
appraisal of the current supply position.
This product has a Medical CE mark and product life is one of the items
addressed.

John S Lamb
Managing Director
Viamed Ltd
<http://www.viamed.co.uk>



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Registration No 12917565 in England

12/02/99