GLT2700/1/2/3/4/8
27MHz HAND HELD GIGALINK™TRANSMITTERS

Features
• Over 4 billion code combinations
• Can program any number of transmitters to a receiver
• High Security

Applications
• Remote control of garage doors, gates, lights, alarms

Description
The hand held GIGALINK™ transmitters are the most advanced Remote Control technology available in the world today. GIGALINK™ is an invention that has revolutionised the entire Remote Control technology including Elsema's earlier version of FMT- … and FMR- … series. The GLT2701/2/3/4 state-of-the-art invention brings a new dimension in the world of Remote Control technology in domestic, commercial and industrial applications.

The innovative microcontroller technology replaces the traditional dip switch coding which eliminates any possible code grabbing. Special features such as **over four billion code combinations and the ability to program any number of transmitters to a receiver** adds to the most advanced and secure Remote Controls available.

The hand held GIGALINK™ transmitters have a microcontroller in-built single and channelised code programming system that provides flexibility in programming each channel to different receivers. Each transmitter can store to its EEPROM, up to four random channels allowing the user to program each channel from different single channel receivers. This is achieved when single code programming the transmitter channels from a GLR2701, which is a single channel GIGALINK™ receiver. If the transmitter is single code programmed from a multi channel receiver, the selected receiver's channel is programmed to the selected transmitter channel. The channels can be selected by using the dip switches on the receiver and by pressing the appropriate channel button on the transmitter.

Channelised code programming programs all the channels, from a multi channel receiver, to the multi channel transmitter. That is, channel one on the transmitter activates channel one on the receiver and alternatively. Channelised system can be either used as simple on/off functions or for several channels to operate simultaneously such as dual or multi action control for example crane transmission control.

The transmitter can be single or channelised code programmed without power connected.

Single Code Programming
This is used for programming one channel at a time to the transmitter. To single code program a transmitter read receivers setup instructions.

Channelised Code Programming
This is used to program all channels from a multi channel receiver to the multi channel transmitter. To channelise code program a transmitter read receivers setup instructions.

Operating Distance

An operating distance (in conjunction with our GLR series receivers) of 350 metres is possible.

The operating distance depends upon the receiver antenna and location. An independent test revealed the following ranges:

Range (Metres)	Receiver Antenna	Receiver Type
50	250 mm Long Wire	GLR.…
200	1000 mm Long Wire	GLR.…
350	ANT27M	GLR.…

Range tests were done in an open area test site with line-of-sight operation and the receiver antenna wire was fixed vertically, away from any metal objects.

Applications

The code programming becomes a powerful feature that allows the hand held transmitters to be used in many diverse applications such as security, gate operation, panic buttons, multiple on/off functions etc.

Battery or DC Supply

Battery operation is optimised using the built-in battery monitoring system. The battery monitoring system alerts the user when the battery level falls below the low battery voltage. The 1 Hz flash from the LED during a transmission indicates low battery. This is an indication that replacement of a battery is necessary.

The GLT2708NC has the option to operate from a 9-volt battery or DC power supply. DC power supply is connected to the 2-way terminal block. Do not connect the supply to the 2.5-mm coding socket since connection may damage the microcontroller. Also available with 5-Pin header for inputs.

Normal Operation

The LED flickers at 12.5Hz during normal operation.

Channels

The hand held transmitters are available with 1, 2, 3,4 and 8 channels.

Custom made front Membrane

Membrane is the front label with the channel etched/printed to it. Customers can purchase the GLT2700, which is a hand held GIGALINK™ transmitter without the front membrane. This enables the customers to fit their custom made membrane that can be a 1, 2, 3 or 4 channels. This has the advantage of customers only stocking one model to function as a 1, 2, 3 and 4 channel. Details of membrane dimensions are given on the following page. Customers can even use Elsema's membrane tools to manufacture their own membranes.

Continuous or Burst Transmission

The hand held transmitters can be purchased with a choice of continuous or burst transmission.

Continuous transmission will transmit as long as the channel is activated.

Burst transmission will transmit for a predetermined time when a channel is activated. Burst transmission locks on a transmission, which ensures a fail-safe transmission from a short activation of a channel. Burst transmission is also required in certain countries where limited transmission time is allowed.

Unique Code System

The microcontroller EEPROM allows large volume users to have a unique code. This enables Elsema to offer everyone "your own" radio control.

Case

The hand held GIGALINK™ transmitters are supplied with a case. There is also sufficient space on the rear of the case to place additional stickers such as your telephone contact, local authorities approval numbers etc.

The GLT2708NC can be supplied without a case, this allows the transmitter to be integrated according to your needs. It is also available with a weather proof case.

Products in the Range

GLT2700 Transmitter	**GLT2701** 1-Channel	**GLT2702** 2-Channel	**GLT2703** 3-Channel	**GLT2704** 4-Channel
				NL: No label *The Elsema Label* *is absent.*
GLT2708 8-Channel	**GLT2716** 2-Stroke, 16-Channel	**GLT2700NC** Transmitter, No Case Option Pin header	**GLT2708NC** 8-Channel, No Case	

Technical Data

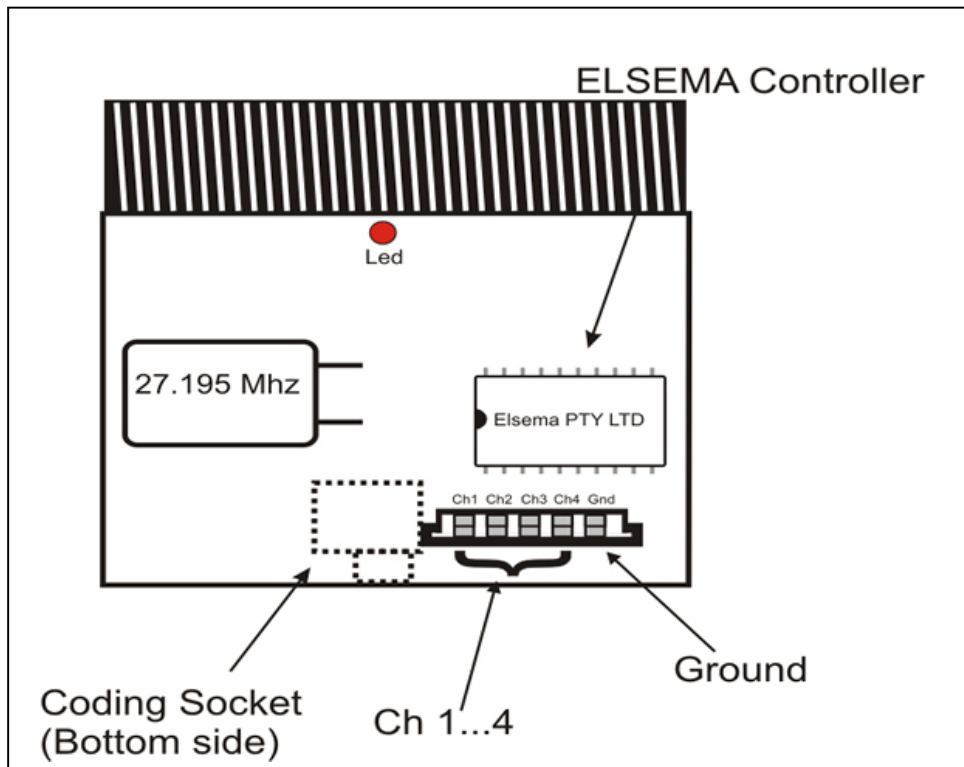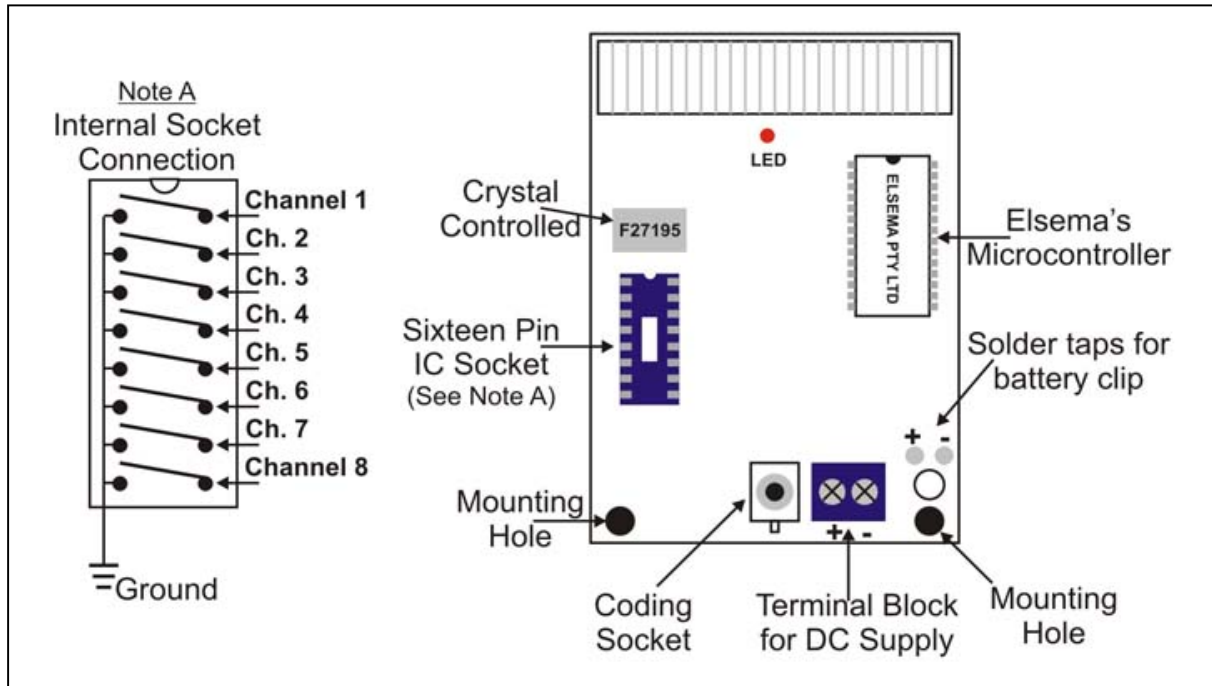| Model	GLT2701, GLT2702, GLT2703, GLT2704	GLT2708
Power Supply	9V Battery (Applied to the battery Clip)	9V Battery (Applied to the battery Clip) or 10-16VDC (Only applied to + & - terminals)
Current Consumption	Max 45mA at 8VDC (Only when transmitting)	Max 70mA at 12VDC (Only when transmitting)
Standby Current	10uA (Typical)	
Transmission Modes	Continuous - Transmits as long as the channel is activated. Minimum transmission time is 640ms Burst (B version) - Transmits one 640ms burst for each channel activation, even if channel is activated for less than 640ms	
Battery Monitor	LED flashes at 1Hz, during transmission, when battery voltage is at 6.5V (flat 9V battery)	
Normal Operation	The LED flickers at 12.5Hz during normal operation	
Operating Freq	27.195MHz (other freq available on 27.045, 27.145 & 27.455MHz. The 27.455 freq is not available for Australia)	
Carrier Freq Tolerance	Crystal controlled 30 parts per million	
Operating Temperature Range	-5 to 50°C	
Radiated RF Power Output	2.223uW (CKC test result)	76.5 dBuV/m at 3m
Antenna	Built-in 50mm long dilec rod	
Type of Emission	Narrow-bandwidth Frequency Modulation (5K00F1D)	
Freq Deviation Limiting	1600 - 1900Hz non-return to zero	
Modulation Freq	1.8kHz (1.737kb) (15% tolerance)	1.8kHz (0.56 ms/bit) (15% tolerance)
Spurious Transmission	At least -60dB / carrier	
Necessary Bandwidth	±2.5kHz	
Digital Coding System	Microcontroller based 96-bit word	
Code Combination	4,294,967,296	
Digital Channels	1, 2, 3 or 4 channels. The type of membrane label determines the number of channels. Customers can fit custom-made membrane labels	8 channels. On board 16-pin IC socket. Channels are addressed by joining opposite side of the IC socket pins. Elsema has a 16-pin 35cm ribbon cable plug available
Dimension	81 x 56 x 24mm	130 x 67 x 27mm (GLT2708) 70 x 50 x 14mm (GLT2708NC)
Weight	51g excluding battery	60g (GLT2708) 35g (GLT2708NC)
Useable Receivers	GLR... series	
Useable Operating Range	Up to 350m; depending on receiver antenna and location	

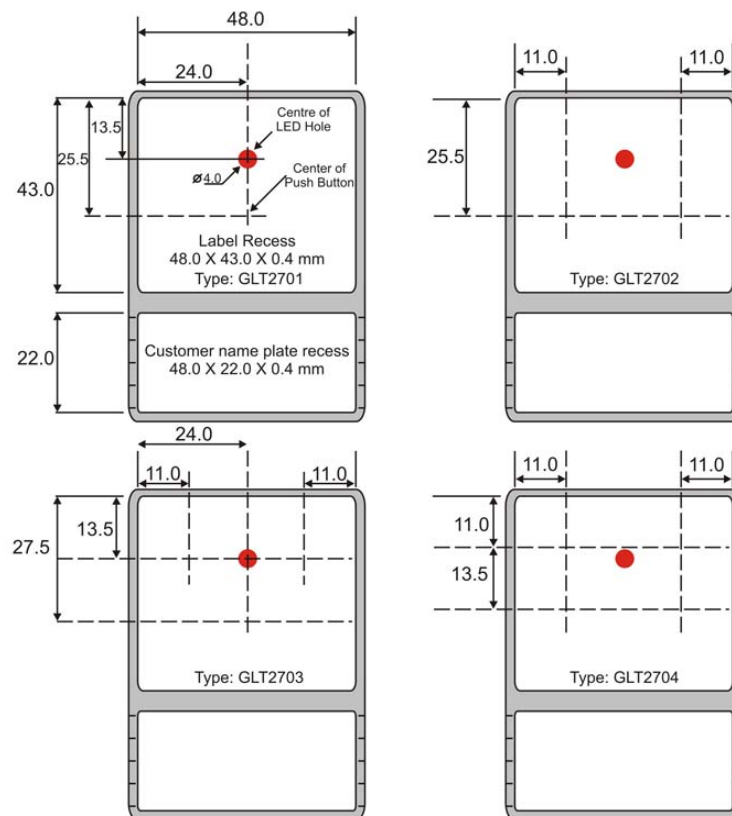**Block Diagram**

GLT2701, GLT2702, GLT2703, GLT2704
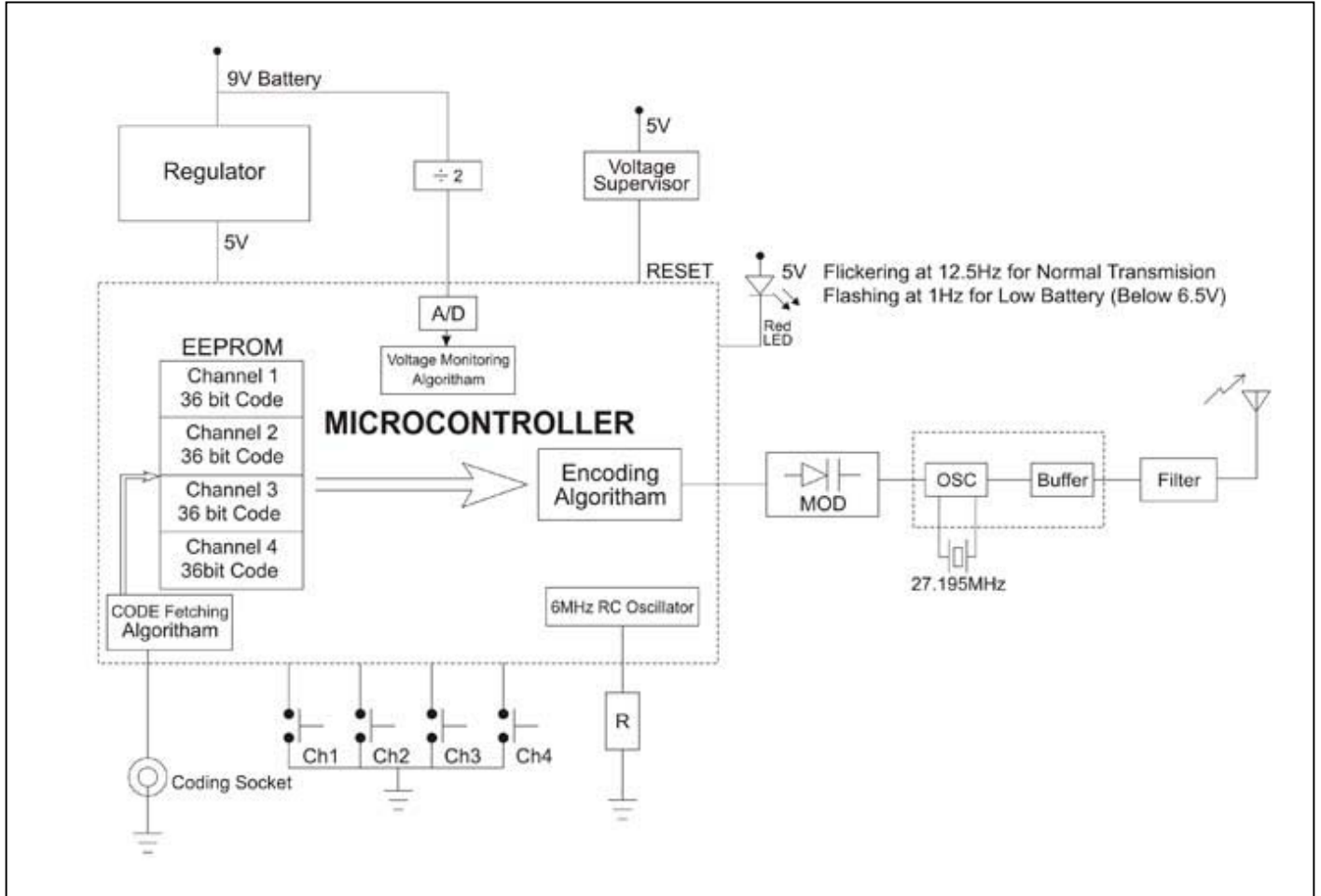
GLT2708(NC)
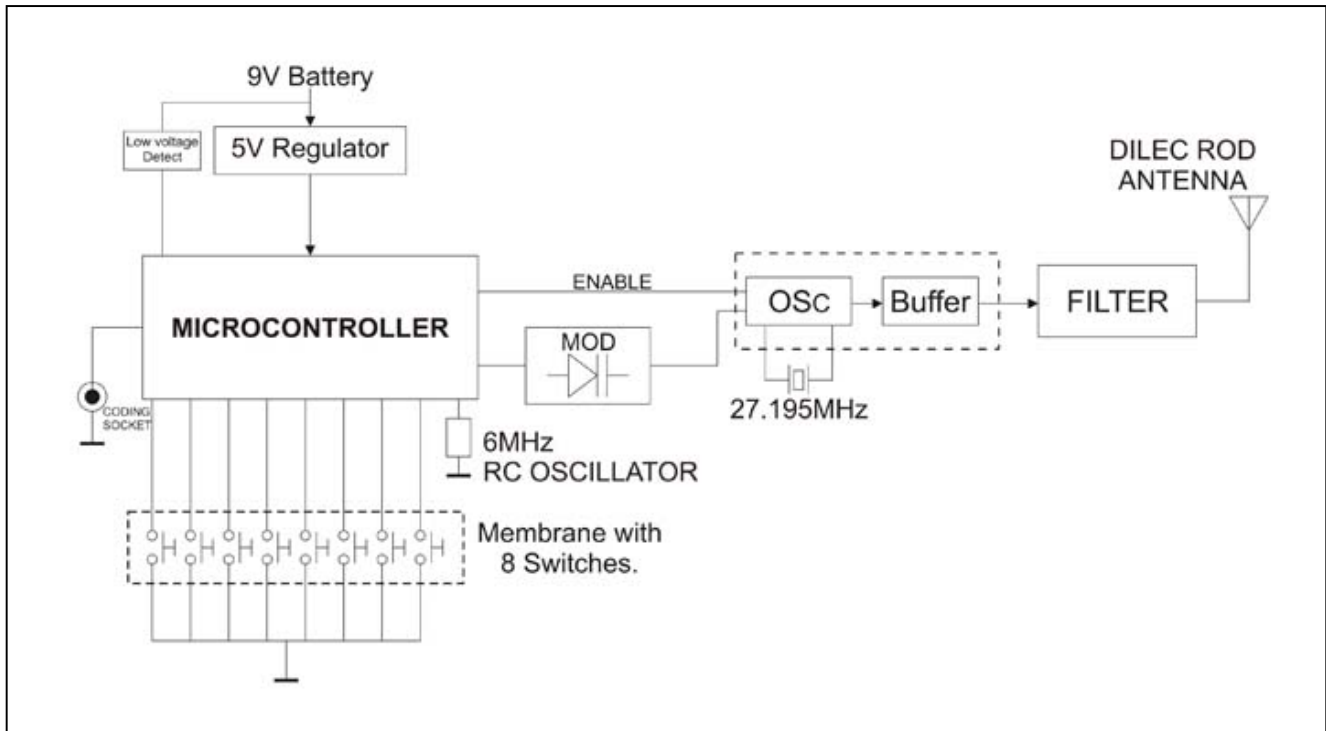
Connection Diagram GLT2700NC

Connection Diagram GLT2708NC

Note A
Internal Socket Connection

Channel 1
Ch. 2
Ch. 3
Ch. 4
Ch. 5
Ch. 6
Ch. 7
Channel 8

Ground

Crystal Controlled — F27195

Sixteen Pin IC Socket (See Note A)

LED

ELSEMA PTY LTD

Elsema's Microcontroller

Solder taps for battery clip

+ -

Mounting Hole

Coding Socket

Terminal Block for DC Supply
+ -

Mounting Hole

Label Dimensions

48.0
24.0
13.5
25.5
43.0

Centre of LED Hole
ø4.0
Center of Push Button

Label Recess
48.0 X 43.0 X 0.4 mm
Type: GLT2701

22.0

Customer name plate recess
48.0 X 22.0 X 0.4 mm

11.0   11.0
25.5

Type: GLT2702

24.0
11.0   11.0
13.5
27.5

Type: GLT2703

11.0   11.0
11.0
13.5

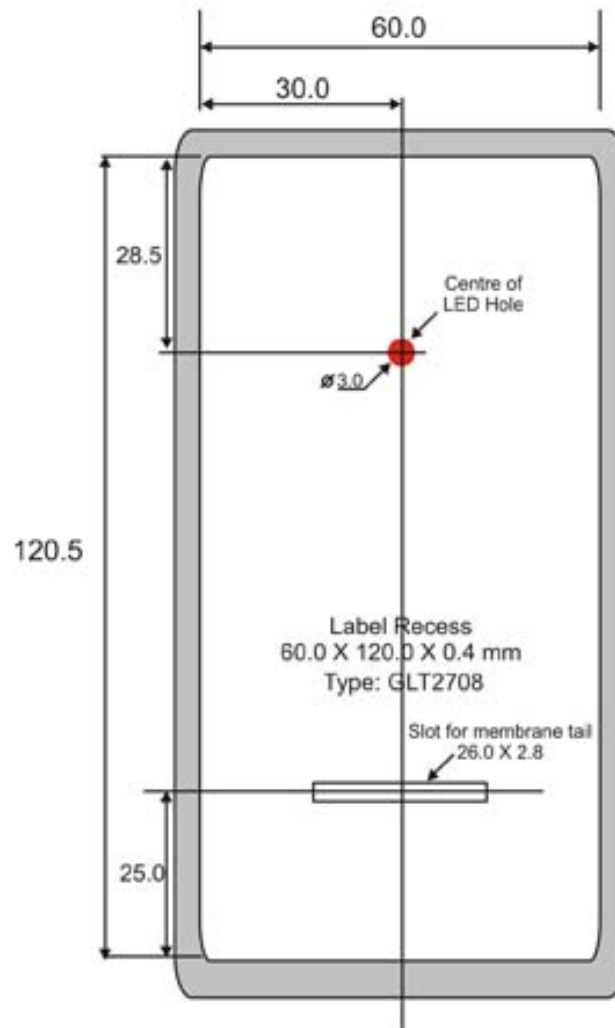Type: GLT2704

Elsema will provide (free of charge) blank membranes for customers who want to design their own labels.

Recommended label material is polyester autotex F200 and buttons to have tactile action with 10.7mm round pillow emboss.

Label Supplier :
Permark Industries Aust (1999) Pty Ltd
Telephone: (61) 2 9911 6656
Fax : (61) 2 9819 6517
Email : amrat@permark.com.au

REGULATORY COMPLIANCE STATEMENTS

American Users

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference and
(2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Notice

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the computer and receiver.

• Connect the computer into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

Canadian Users

This Class [B] digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe [B] respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Users

This information Technology Equipment has been tested and found to comply with the following European directives:

- ETS 300 683
- I-ETS 300 220

Australian and New Zealand Users

This device has been tested and found to comply with the limits for a Class [B] digital device, pursuant to the Australian/New Zealand standard AS 4268.2 (1995) set out by the Spectrum Management Agency.