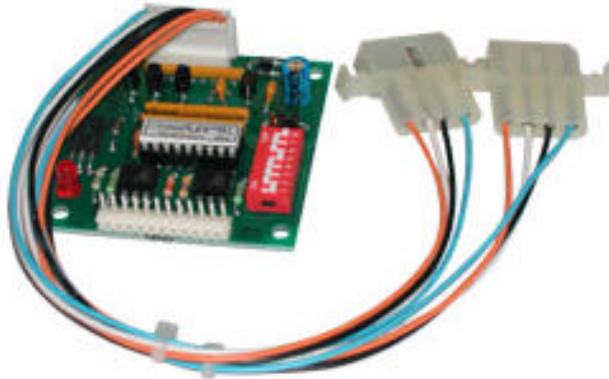# TicketFlex Maximizer with Skill Mode
Model TFB3
Installation & Operation Instructions

**A Smart Ticket Dispenser Controller Board
optimized for installing ticket output to any coin
operated machine.**

**The unique SKILL MODE simulates ticket
payout depending on the skill of the players.
Tickets are dispensed during the game, the
longer game time is achieved the more tickets
the player wins.**

SUTABLE FOR

Video Games

Pinball Machines

Kiddy Rides

Any Coin-Op Game

TicketFlex Maximizer TFB3

MODES OF OPERATION

Multiply or Divide Mode
Tickets are dispensed per a credit pulse(s) applied to the coin/credit input. The Ticketflex Maximizer is set to "Multiply Mode" when it is shipped to the customer.

Skill Mode
Tickets are dispensed during the game per a time played (longer game time = more tickets). This mode can be selected via EEPROM setting.

Time Bonus (Double Tickets) Mode
This mode works in combination with all modes. If enabled (Dip Sw.8 = ON), the Bonus Light will be flashing approx. every 5 minutes for duration of 1 minute. While the light is flashing the players will receive double amount of tickets.

Multiply/Divide

Dip Switch in Multiply/Divide Mode

To select Divide or Multiply Mode the EEPROM setting for Game Time or Interval or both must be set to ZERO!

MULTIPLY
Adjust the dip switch to dispense 1 to 15 tickets per each pulse applied to the ticket drive input.

DIVIDE
Adjust dip switch to dispense 1 ticket per 1 to 15 pulses applied to the ticket drive input.

Please Note:

1. **Dip Sw 7 must be OFF except when EEPROM Read Test is required.**
2. **Please note that the function of the Dip Switches changes depending on the selected mode.**

ADJUST TICKETS

Tickets	Sw1	Sw2	Sw3	Sw4
1	OFF	ON	ON	ON
2	ON	OFF	ON	ON
3	OFF	OFF	ON	ON
4	ON	ON	OFF	ON
5	OFF	ON	OFF	ON
6	ON	OFF	OFF	ON
7	OFF	OFF	OFF	ON
8	ON	ON	ON	OFF
9	OFF	ON	ON	OFF
10	ON	OFF	ON	OFF
11	OFF	OFF	ON	OFF
12	ON	ON	OFF	OFF
13	OFF	ON	OFF	OFF
14	ON	OFF	OFF	OFF
15	OFF	OFF	OFF	OFF

SET MODE

Divide/Multiply	Sw6
Divide	OFF
Multiply	ON

Bonus Mode	Sw8
Timed Bonus OFF	OFF
Timed Bonus ON	ON

EEPROM TEST	Sw7
Normal Operation	OFF
EEPROM Test	ON

Skill Mode

Dip Switch in Skill Mode

This mode can be entered via EEPROM setting (see page 4). Both the Game Time and Interval MUST BE SET to a value other than zero.

The Skill Mode allows dispensing tickets during the game. It is suitable for games where each player has a dedicated coin acceptor. Tickets are dispensed on time bases. More skillful players will achieve longer game times and therefore will earn more tickets. In games where one coin acceptor is used for all players, Multiply/Divide Mode should be used.

The Ticketflex System monitors an **Activity Switch,** which can be any control panel switch or a trigger switch in gun games, which is frequently used during the game. If the activity stops for the preset time set by the dip switch, the Skill Mode will interpret it as a Game Over. **Four different parameters for the Skill Mode can be set:**

1. GAME TIME
This is the maximum time per credit during which tickets can be dispensed.
2. INTERVAL
This is a time interval at which a ticket will be dispensed during the game time.
3. WINNER LEVEL
A time starting from the first credit pulse (or game over if multiple credits where registered) at which tickets will start to be dispensed e.g. if set to 30 sec, no tickets will be dispensed in the first 30 seconds of the game.
4. MERCY TICKETS
Extra tickets dispensed immediately after credit pulse is received (the ticket range is 0 – 15).

Coin/Credits	Sw1	Sw2	Sw6
1 coin/1cr	ON	ON	ON
1 coin/2cr	OFF	ON	ON
1 coin/3cr	ON	OFF	ON
1 coin/4cr	OFF	OFF	ON
2 coins/1cr	ON	ON	OFF
3 coins/1cr	OFF	ON	OFF
4 coins/1cr	ON	OFF	OFF
5 coins/1cr	OFF	OFF	OFF

ACTIVITY	Sw3	Sw4	Sw5
10 SEC	ON	ON	OFF
20 SEC	OFF	ON	OFF
30 SEC	ON	OFF	OFF
40 SEC	OFF	OFF	OFF
DISABLED	x	x	ON

EEPROM TEST	Sw7
Normal Operation	OFF
EEPROM Test	ON

Bonus Mode	Sw8
Timed Bonus OFF	OFF
Timed Bonus ON	ON

Dip Switches 1,2,6
Set price per game.

Dip Switches 3,4,5
Time setting for the Activity Switch e.g. if set for 10 sec the Activity Switch must be activated at least once in 10s otherwise Game Over is assumed and no more tickets will be dispensed.
The Activity Switch can be the fire button, joystick switch, gun trigger switch etc. (any switch, which is frequently used during the game). If not connected the Activity must be disabled Sw 5 = ON.

Dip Switch 7.Check EEPROM setting. The LED will start flashing. The number of flashes will correspond to the set values. See page 4 for details.

Dip Switch 8 If enabled(Sw 8 = ON) the Bonus Light will be flashing approx. every 5 minutes for duration of 1 minute. While the light is flashing the players will receive double amount of tickets.

SETTING UP SKILL MODE

The Skill Mode can be entered via the EEPROM memory, which will retain the set up data even when the power is switched off. It is important to follow the set up procedure exactly as described below. The Skill Mode may not be suitable for all games and all types of operation situations. Amusement machines like video games do not provide any signals, which we could use to know when one game finishes and another starts. Therefore it is very important to select the game time, interval, the winner level and also the dip switch setting for activity very thoughtfully to suit the particular game. Even with perfect adjustments the Skill Mode will never be perfectly synchronized with the Game Up/Game Over state of the game and tickets may be dispensed in seemingly wrong time, especially when multiple credits are played. Play the game to familiarize yourself with its features then select settings for the optimum performance of the Skill Mode.

SELECT GAME TIME, INTERVAL, WINNER LEVEL AND MERCY TICKETS

1. Switch the power OFF.
2. Set dip switches 5,6,7,8 ON.
3. Switch the power ON, the LED will flash briefly twice to indicate EEPROM set up mode.
4. For example to set the GAME TIME, set dip switches 1,2,3,4 for the desired value and turn the dip switch 5 OFF. The selected value will be written into the EEPROM memory. The LED will start flashing to verify successful 'EEPROM WRITE'. The number of flashes will correspond to the set value (one longer flash represents ZERO).
5. Return the dip switches 5 to 8 back to the ON position, the LED will again briefly flash twice. The board is ready for next EEPROM WRITE.
6. You can repeat steps 4 and 5 as many times as you want to set other values. By turning OFF dip switch 5 – 8 (only one switch at the time) you can select which setting you want to change.
7. After you finished all settings, set dip switches as required for normal operation (Coin/Credits, Activity, Bonus Mode) see page 3. SW7 must be in OFF position.

EXAMPLES:

- To select Game Time of 60 seconds, select value 4 by setting dip switches as follows: SW1=ON, SW2=ON, SW3=OFF, SW4=ON. Switch dip switch 5 off to write this value in the memory.
- To select Interval of 15 seconds, select value 5 by setting dip switches as follows: SW1=OFF, SW2=ON, SW3=OFF, SW4=ON. Switch dip switch 6 off to write this value in the memory.

Dip Switch

1 2 3 4	5	6	7	8
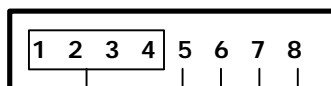
SET VALUE				
SET	Sw1	Sw2	Sw3	Sw4
0	ON	ON	ON	ON
1	OFF	ON	ON	ON
2	ON	OFF	ON	ON
3	OFF	OFF	ON	ON
4	ON	ON	OFF	ON
5	OFF	ON	OFF	ON
6	ON	OFF	OFF	ON
7	OFF	OFF	OFF	ON
8	ON	ON	ON	OFF
9	OFF	ON	ON	OFF
10	ON	OFF	ON	OFF
11	OFF	OFF	ON	OFF
12	ON	ON	OFF	OFF
13	OFF	ON	OFF	OFF
14	ON	OFF	OFF	OFF
15	OFF	OFF	OFF	OFF

GAME TIME	
SET	TIME (s)
0	0
1	15
2	30
3	45
4	60
5	75
6	90
7	105
8	120
9	135
10	150
11	165
12	180
13	195
14	210
15	235

INTERVAL	
SET	TIME (s)
0	0
1	3
2	6
3	9
4	12
5	15
6	18
7	21
8	24
9	27
10	30
11	33
12	36
13	39
14	42
15	45

WINNER LEVEL	
SET	TIME (s)
0	0
1	10
2	20
3	30
4	40
5	50
6	60
7	70
8	80
9	90
10	100
11	110
12	120
13	130
14	140
15	150

MERCY TICKETS	
SET	TICKETS
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15

EEPROM TEST – READ SETTINGS

1. Switch the power OFF.
2. Turn dip switch 7 ON (at least one of the dip switches 5,6 or 8 must be turned off).
3. Turn the power ON. The LED will start flashing indicating all EEPROM settings in this order: Game Time, Interval, Winner, Mercy Tickets.
4. There is a short pause between settings. Zero setting is indicated by one longer flash.
5. Turn dip switch 7 OFF for normal operation.

Instruction Sheet for TFB3

CLEARING ERROR
An error will occur when the machine runs out of tickets or the ticket notch opto sensor is not functioning. The PCB LED and the Bonus Light will stay ON. Clean the opto sensor with paint brush, remove jams and reload tickets. The unit will automatically reset and resume normal operation.

DISPENSER TEST (In Multiply Mode Only).
Switch the machine OFF, adjust dip switches for Dispenser Test and switch the machine ON. 5 tickets will be dispensed and the PCB LED and the Bonus Light will flash 2x at successful completion of the test. The LED and Bonus Light will stay "ON" if there is an ERROR!

Dispenser Test

Sw1	Sw2	Sw3	Sw4	Sw5	Sw6
ON	ON	ON	ON	OFF	OFF

COIN/CREDIT INPUT
The ticket payout is initiated by Coin/Credit pulse connected to the Coin/Credit Input (JST8-PIN 3) which is direct 5V logic input triggered by ground pulse.

OPTO ISOLATED COIN/CREDIT INPUT
Alternative connection can be done via the Opto Isolated Coin/Credit Input JST12 , pins 10 and 11 or 12. For example the pin 10 and 11 could be connected directly across the Coin Counter of the machine.

ACTIVITY SWITCH (FOR SKILL MODE ONLY).
The Activity Switch can be any control panel switch or trigger switch in gun games, which is frequently used during the game (these switches usually connect ground to the 5V logic circuit of the game board).
Connect the switch to JST12 connector pin 1. Connect +5V to JST12 pin 4. This is an opto isolated input. The Activity Switch is required in Skill Mode only.
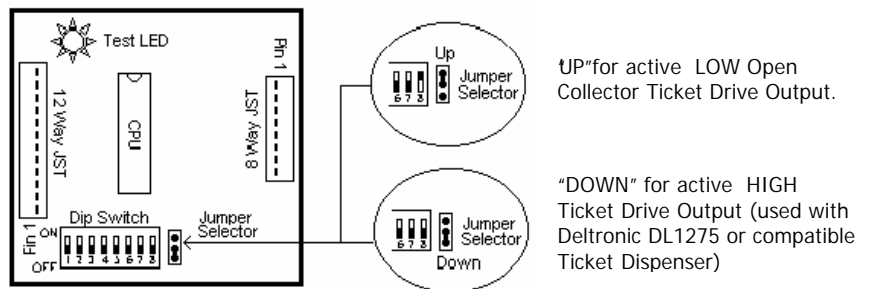

LED or External Lamp

On power up or after clearing ERROR the number of flashes indicate selected mode.

Number of flashes	MODE
1	DISPENSER TEST
2	DIVIDER
3	MULTIPLIER
4	DIVIDE WITH BONUS
5	MULTIPLY WITH BONUS
6	SKILL MODE
7	SKILL MODE WITH BONUS

IMPORTANT NOTE: To minimize the likelihood of damage by electrostatic discharge, it is recommended that the ticket dispenser body is connected to the protection earth.

Jumper Selector (Inverts Drive Output Voltage Level)

"UP" for active LOW Open Collector Ticket Drive Output.

"DOWN" for active HIGH Ticket Drive Output (used with Deltronic DL1275 or compatible Ticket Dispenser)

The Standard Harness Supplied with the Maximizer

4 WAY UTILUX (MALE) CONNECTOR
Connected to the Ticket Dispenser

PIN	Description	Wire
1	Notch Input	Blue
2	GND	Black
3	Ticket Drive Output	White
4	+12V	Orange

4 WAY UTILUX (FEMALE) CONNECTOR
Connected to the Machine

PIN	Description	Wire
1	Not used.	Blue
2	GND	Black
3	Coin/Credit Input	White
4	+12V	Orange

Ticketflex PCB Connector Pinout

12 WAY JST CONNECTOR (PCB)

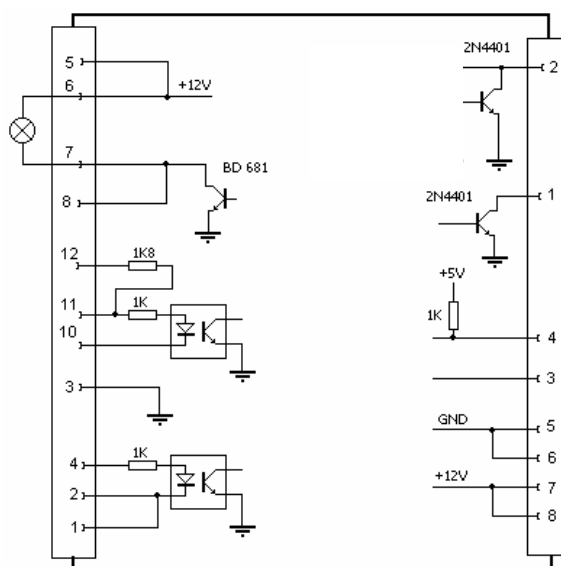| PIN	JST Connector
1	- Activity Switch
2	- Activity Switch
3	GND (Out)
4	+Activity Input 5-30V
5	+12 V (Out)
6	+12 V (Out)
7	Lamp Output
8	Lamp Output
9	Ticket Meter
10	- Opto Coin/Credit Input
11	+ Opto Coin/Crd 5 to 30VDC
12	+ Opto Coin/Crd 14 to 60VDC

Ticket Meter
Connect Ticket Meter between pin 5 and 9 of the JST 12 Connector.

Bonus Light
Connect Bonus Light (12V/10W Max) between pin 6 and 7 of the JST 12 Connector.

8 WAY JST CONNECTOR (PCB)

PIN	JST Connector
1	N/U
2	Tick. Drive Output
3	Coin/Credit Input
4	Tick. Notch Input
5	GND (Out)
6	GND (In)
7	+12V (Out)
8	+12V (In)

For On-Line Help and application notes visit:
www.ticketflex.com

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