



Version 4.XX

SYSTEM OPERATION

Find current docs / info / code at:
<http://lightbrain.8m.com/mtdesign.htm>

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NOTE:

All features, specifications and information detailed in this document are subject to change without notice. Use of this information or any systems based on it is at your own risk. The designer does not accept liability for injury to persons or damage to equipment resulting from use of the information, circuits and systems described herein.

CONSTRUCTION NOTES

- **Config Switch:** This switch should be a Key Operated switch. The key should be removable in the OFF position (or in BOTH positions).
- **LCD Display:** Most inexpensive 2-line LCD displays capable of operating in 4-bit parallel mode will work. Use of an 8-character x 2-line display with LED backlight is recommend. Some LCDs have built in dropping resistors for the backlight. Also it may be necessary to change jumper settings on the LCD (see mfr datasheet).
- **Sensors:** Recommend using three sensors mounted on a hat (e.g. baseball cap). This provides 360-degree coverage.

POWER ON:

Config Switch = OFF : System is DEAD at power-on. Must be restarted by opponent or master controller. This is a useful anti-cheating feature.

Config Switch = ON : Player is ALIVE at power-on.

OPERATION NOTES:

- **Configuration Menus:** You do not need a Master Controller device, computer or programming skills to customize the MilesTag system to fit your needs. You can modify nearly every feature of the system right on the gun itself using the built-in Configuration Menus. Everything can be changed "on the fly" between games. Endless variations of game play can be achieved by altering the various parameters and all settings are saved to non-volatile memory - so the next time you power up, the system will still have all of its previous settings intact. A cloning function is also available from within the Configuration Menus. The configuration menus can only be accessed while the Config Switch is ON.
 - **Recommendation:** Before starting a game, set all guns to a unique Player ID. For Team Games, make sure all guns for each team are set to the correct Team ID. Also make sure that Friendly Fire is turned OFF to keep from accidentally tagging your own team members.

- **Recommendation:** For most games, all the guns will be configured identically. You can use the Clone feature to quickly set up multiple guns. Note that cloning does not affect the Player ID, Team ID and Game ID settings.
 - **Reloading:** Don't stand out in the open while you are reloading. This isn't the Revolutionary War. Take cover! If an opponent tags you while you are reloading, the reload will be disrupted and must be re-started. Make sure you are safely hidden from opponents (out of the line-of-fire) during reloads!
 - **Kevlar:** The Kevlar value sets how many "hits" your virtual "Kevlar Vest" can take before it loses effectiveness. The Kevlar value is reduced by "1" after each hit. When it reaches "0", it is automatically disabled (discarded). If enabled (value>0) the Kevlar cuts the damage (hit points) in half. So, a hit from a weapon set to 10 hit points would only take 5 points from your health value.
 - **Friendly Fire:** You can choose whether to allow Friendly Fire (FF) hits in your game. If FF is turned ON, any player can "tag" any other player regardless of their Team ID assignments. Note that while FF is ON, players will be unable to Restart (resurrect) each other. If FF is turned OFF, Team IDs are recognized by the system and accidental "tags" against players on your team members will not be counted.
 - **NEW Gladiator Mode:** In this mode, you define the number of tags (G-Tags) required to tag a player out (2 to 20 tags). Let's say we set it to "4 tags". Now to be tagged out, you must be hit 4 times by THE SAME PLAYER. Tags from multiple players are NOT CUMULATIVE. Therefore, if you have a "firefight" with BillyBob and he tags you three times, but you manage to tag him out first with 4 tags, you will still be on "even ground" with any other player you encounter. For example, even though you were tagged 3 times by BillyBob, when you encounter StevieRay, he is STILL going to have to tag you 4 times to tag you out. Of course, if StevieRay already tagged you once earlier in the game, he now only needs to tag you 3 more times. So tags from any individual player ARE cumulative and do not have to be consecutive.
- ❖ This style of game can help make the best players stand out. There's no chance of being "weakened" by a sacrificial opponent, or players "laying low" to keep their own health up so they can tag out wounded opponents at the end of the game. You can still use teamwork and tactics for flanking, etc., but in most cases, you engage every opponent as an individual. Much like a Gladiator doing battle with opponents one by one until he is deemed the champion.
 - ❖ This is a selectable alternative to the normal Health and Hit Points style of play, in which damage IS cumulative regardless of who hits you.
 - ❖ Maximum of 32 Players in Gladiator Mode.
- **Scoring:** MilesTag keeps track of player scores in the form of # of hits. Each player's gun (up to 32 players maximum) will log the number of hits received (up to 255) from every other player. The scores may be downloaded to a Master Controller device after the game(s) to compile scores from all players. **(not implemented in this revision)**

LCD MENUS:

Menu Button – Steps through the available LCD screens. Some screens may not be available depending on the gun's configuration settings.

Trigger Button – Fires the currently selected weapon.

Reload Button – Initiates reload when clip is empty. Toggles LCD backlight On/Off when clip is not empty.

Main Firing Screen (Normal):	
R30 C10	Rounds = 30 Clips = 10
100Red01	Health = 100 Last Hit by: TeamID = Red PlayerID = 01
Main Firing Screen (Gladiator Mode):	
R30 C10	Rounds = 30 Clips = 10
T02Red01	Tags = 2 Last Hit by: TeamID = Red PlayerID = 01
Restart Opponent Screen (must be enabled in configuration settings):	
Restart Player	Press TRIGGER to send restart (resurrect) command. Will not work if Friendly Fire is enabled.
Access Configuration Menus (must be enabled by keyswitch):	
Config	Press TRIGGER to enter Configuration Menus.
Reloading Progress Screen:	
Reload ■■■■■	The bar shows reload progress. Only available if there are remaining clips. Note: The reloading cycle will be aborted if a hit is detected.

CONFIGURATION MENUS:

Menu Button – Steps through the available configuration options. Not all screens are available depending on configuration settings.

Trigger Button – Change Value/Parameter

Reload Button – LCD backlight On/Off.

Change Team ID:	
Team	Red – Blu – Yel – Grn – Blk – Wht – Pur
Red	Assign teams for games where Friendly Fire is set to OFF.
Change Player ID:	
Player	0 to 31
001	Assign a different ID to each player.
Enable/Disable "Gladiator Mode": (also disables access to some menus)	
G-Mode	On - Off
On	On enables "Gladiator Mode".
Change Number of Tags for Gladiator Mode:	
G-Tags	2 to 20
004	Number of hits (tags) required to tag player out.
Change Initial Health Value:	
Health	5 to 250
100	Normal setting is 100.
Change Kevlar (Shield) Value:	
Kevlar	0 to 30 hits
000	This sets the number of hits your "Kevlar Vest" can sustain.
Change Gun Hit Points:	
Gun HP	1 to 100
019	Sets the Damage inflicted by the Gun.
Change Number of Clips:	
Clips	1 to 98 (99 = unlimited)
010	Number of clips available for the Primary Weapon (Gun).
Change Rounds per Clip:	
Rounds	1 to 250 (251 = unlimited)
030	Number of rounds in each clip.
Change Hit Delay:	
HitDly	0 to 20 seconds
000	Sets delay after being hit during which the player cannot shoot or be hit.

Select Firing Mode:	
F-Auto	On - Off
On	On = Full-Auto Off = Semi-Auto
Adjust Cyclic Rate:	
Cyclic	1 - 200 mS (Normal setting is 50.)
050	Sets the delay between rounds for auto and semi-auto fire.
Adjust Reload Time:	
Reload	1 to 30 seconds
005	Sets delay for reload cycle (clip change).
Enable / Disable Restart (Resurrect) Opponent:	
Restrt	On - Off
On	If set to "Off", the Restart Opponent screen will not be available.
Enable / Disable Sound:	
Sound	On - Off
On	Turns all sounds on or off.
Enable (Allow) Friendly Fire:	
FrFire	On - Off
Off	When friendly fire is On, players with the same TeamID can tag you.
Clone Gun - Transmit All Configuration Parameters:	
Clone	Press Trigger to transmit all configuration settings. (<i>GameID, TeamID and PlayerID are not cloned.</i>) Press Menu to continue editing.
Save Configuration Settings to Nonvolatile Memory:	
Save ?	Press Trigger to save current settings. (<i>Settings are still retained while system power is off.</i>) Press Menu to continue editing.