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CVP Products (CVP) is not responsible for any direct, indirect, special, or consequential damages and personal injuries, including that to life, and health, resulting from the customer's application and use of CVP's devices. You, the customer, assume full and unlimited responsibility for all device applications and uses. Your purchase of this device constitutes your agreement to hereafter assume full and total responsibility for your subsequent utilization of the device and you agree to defend, protect, save harmless, and indemnify CVP Products its owner and employees relative to your potential use and misuse of this device. By purchasing or using a CVP device, you agree to the above terms.

If buyer does not agree with these conditions, return the product in its original condition immediately to the place of purchase before use.

Warranty Information

This warranty covers substantial defects in materials and workmanship of the T1300E OPS throttle. This warranty does not cover the wall charger or the interface cable.

What This Warranty Does Not Cover

This warranty does not cover any problems which result from normal wear and tear, improper installation, modifications, battery failure, battery polarity reversal, leaking batteries, incorrect charging procedure, 3rd party battery chargers, abuse, accidents, or acts of God such as excessive heat, floods, damage caused by exposure to moisture and rain, lightning, earthquakes, volcanic events, tidal waves or hurricanes. Normal wear and tear includes dirty keys, broken pot, cracked case, broken charging jack or other wear caused by use and abuse.

Warranty Duration

The coverage of this warranty lasts for 1 year. After this period, standard repair rates apply. Depending on the problem, CVP reserves the right to repair or replace.

Help

Please email or call the CVP office number below. If the voice mail system answers, it is either after our normal business hours or we are busy helping other customers. Please leave a message. Be sure to leave your phone number and your location. Have your throttle, the instruction manual and your locomotive nearby before you call. Email will be faster and is available 24 hours.

Repairs or Returns

Do not send items to us for repair without first obtaining authorization. In many cases, problems are easily solved via phone or email without the need or expense to return items to us. For more information about repairs, go to the website and click on the blue box labeled Repair Services.

Warning - Absolutely Never Drill The Throttle Case

Absolutely nothing can be mounted to the top area of the throttle's case or on the bottom of the case. Do not screw, drill or mount items such as lanyards to the throttle's top or bottom. Never drill the case since the LiPo battery may be punctured resulting in a fire hazard and damage to the throttle. If drilling has been done and is discovered by CVP, the throttle cannot and will not be repaired and will be returned to you untouched at your expense.

If Your Throttle Needs Service

Visit the CVP website and click on the blue box labeled REPAIR SERVICES. Follow the instructions for obtaining service for your throttle. You must have an RMA before sending it. Be sure to include a copy of your invoice or your invoice number.

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r2 T1300E MAR 2019

T1300E Wireless Throttle User Guide

Operator's Guide 3
Simplified instructions for using the OPS throttle

Owner's Setup Guide 5
Instructions for setting or selecting various options for the OPS throttle



**You Must Assign ID Number
Before Using - See Page 6**



**Fully Charge Battery
Before Using - See Page 6**



This throttle uses a rechargeable Lithium-Polymer (LiPo) battery. LiPo batteries are volatile. Read the safety instructions and warnings on page 11 before using or charging your throttle. Failure to do so may result in fire, personal injury, and damage to property including your new throttle.

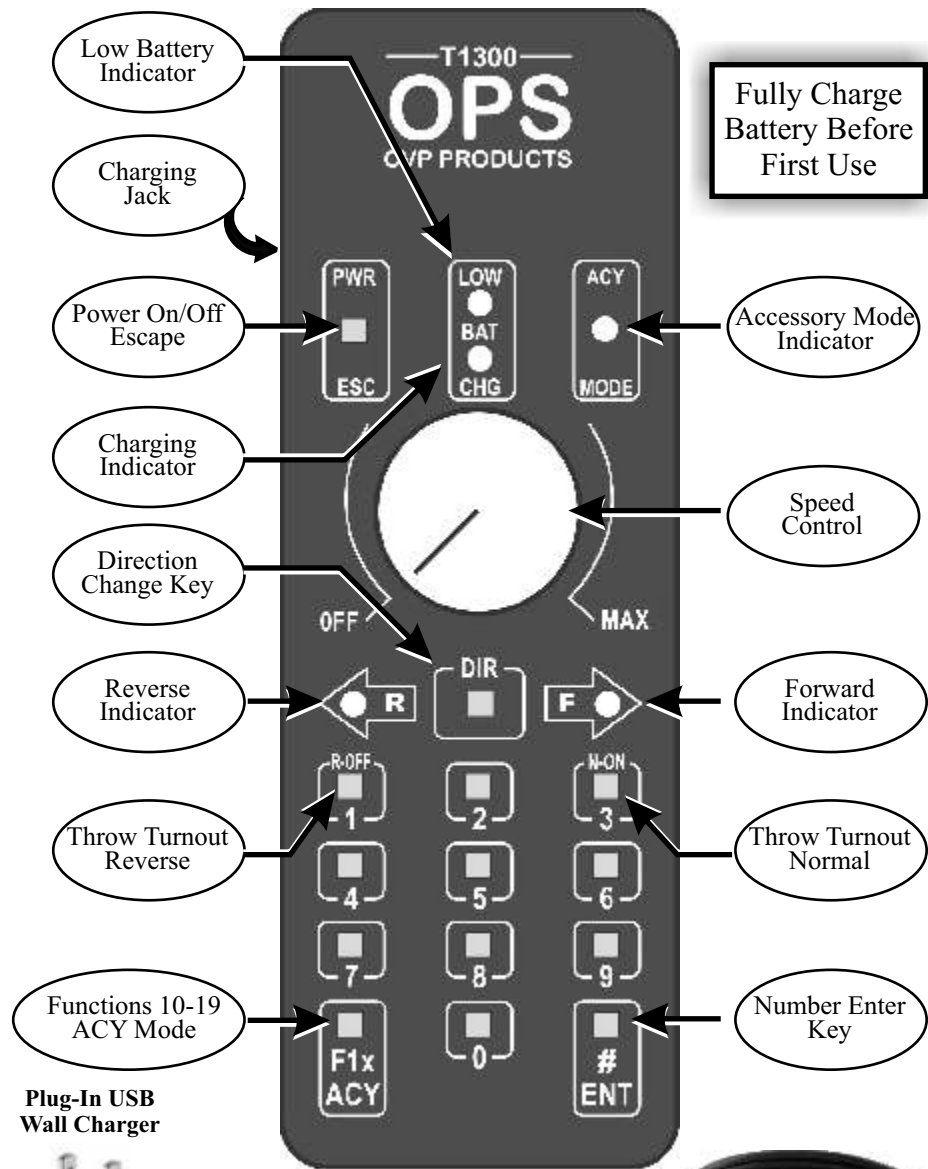
Please read and understand the disclaimer of liability on the back page.

T1300E Box Contents

- T1300E OPS Throttle
- *Plug-in Wall Charger
- *Charger Interface Cable
- This Manual
- *T1300E Combo Option Only

EASYDCC™

T1300E OPS Wireless Throttle - Front View



Note: The T1300E can use the a standard USB output voltage of about 5 volts. If you are not sure of your charger's output voltage, read the specifications or the fine print on the side of your charger. If the output voltage is higher than 6 or lower than 5, don't use it.



USB to microUSB Charging Cable

Replacing Internal Battery

The T1300E throttle's internal battery is specified for about 600 full charge-discharge cycles before needing replacement. This means the battery will last for many years of normal use.

However, should a replacement be required, that is simple to do. The replacement pack can be ordered from CVP Products. Call for ordering information and the latest price.

Open up the throttle by removing the 4 screws from the back. Lift the back up and lay it on its side.

Unplug the battery pack by pulling straight up on the plug's wires while wiggling the plug back and forth.

The battery is attached to the back with thin, double-sided tape. Remove the battery from the tape and discard.

Remove the old tape and apply a fresh piece.

Reattach the new battery in the same position as the old battery using the photo as a reminder.

Plug in the new battery. The socket is polarized; the plug must be oriented correctly to be inserted.

Place the back onto the throttle and check for pinched wires. When all is clear, reinstall the 4 screws.



Battery And Charger Specifications

Battery Type	Lithium-Polymer Rechargeable Battery (LiPo)
Battery Voltage	3.7V typical, 4.2V maximum, 2.45V cutoff
Battery Capacity	2000mAh
Battery Protection	Over voltage, under voltage, over current
USB Socket Type	microUSB socket on side of throttle
Charger Voltage	6 VDC maximum (higher voltages will damage throttle)
Charger Current	500mA maximum, lower is OK but charging takes longer

LiPo Rechargeable Battery Pack Precautions

- NEVER use a NiCd/NiMH charger to charge LiPo batteries.
- ALWAYS store LiPo batteries at room temperature. Never put them in a freezer.
- NEVER charge batteries if the ambient temperature is above 113°F.
- ALWAYS unplug the battery if storing the throttle for more than 2 months without charging.
- ALWAYS charge the battery if it has not been used for more than a month.
- ALWAYS keep LIPO batteries out of reach of children or pets.
- NEVER puncture, cut or drill into the battery pack.

Miscellaneous Notes

Automatic Power Off Timer

The OPS throttle automatically turn itself off after 15 minutes of non-use but only if the speed knob is set to OFF. However, if the speed control is not set to OFF, like when you are operating a train, the throttle will not automatically turn off.

Teach your operators to always set the speed control to OFF when they have finished using the throttle.

Low Battery Warning Indicator

When the battery has about 60 minutes of life remaining, the LO LED begins to flicker. When the battery life drops to 30 minutes the LO LED turns on and stays on. It is strongly recommended to park the train before the throttle automatically shuts down to protect the battery. If the train is still running when the throttle battery is depleted, the train will not be controllable.

If The Train Doesn't Run

When power is turned off, the throttle will not remember the last loco number. First set the speed control to OFF, then enter the desired loco number first before attempting to use the throttle.

Power On Indication

After pushing the power key, the forward LED will be on solid after a few seconds. If the LOBAT turns on, the throttle needs to be recharged. If no lights turn on, then the battery is probably depleted and must be recharged.

Battery Has Automatic Shutoff When Depleted

If the battery is fully depleted, it will automatically shut down. The throttle can't be used and none of the LEDs will be on when the power key is pressed. The battery must be charged before the throttle can be used again.

The T1300E Throttle's Lithium Battery Does Not Have "Memory"

It is OK to recharge the battery at any time, even if only used for 30 minutes. The smart charging circuitry inside the throttle will insure proper conditioning and charging. Also, because of the smart circuitry, it is OK to leave it plugged into the charger.

Battery life is about 65 to 70 hours of continuous use.

Battery recharge time can be as long as 4 to 6 hours if fully depleted.

Tips For Best Throttle Performance

The T1300E OPS throttle operates in an unlicensed band shared by many other transmitters. These transmitters can and will create interference causing intermittent throttle operation or complete failure of one or more of your throttle's frequencies. The sources of these external interfering signals can be from your other throttles, your own home, from adjacent homes, nearby businesses or noisy electrical motors including your own locomotives.

Interfering Transmitters. Here's a list of devices known to have caused interference to the throttle: of course other throttles on the same frequency, wireless devices attached to computers, TV remote controls, cordless telephones, wireless home or business alarm systems, baby monitors, unlicensed personal communication devices, lawn sprinkler controllers, remote starter switches, cordless light switches, outdoor lighting controllers, toys, wireless headphones, and games.

If you find a strong interfering signal on one or more of your frequencies, don't use those frequencies; pick a different frequency and try it.

Keep your hand away from the top edge of the box. The internal antenna is near this area and the presence of your hand can affect the throttle's range.

Beware Of Other Throttles On The Same Frequency. Each EASYDCC throttle, when in scan mode must be on a unique frequency. If using older throttles and older receivers, along with the newer T5000E and the T1300EE throttle, burst mode is an option for sharing frequencies 0 to 7. Only the T5000E and the T1300EE throttles can be set to frequencies from 8 to 15 and scan mode should be used.

OPS Throttle Operator's Guide

The pictorial instructions are only for basic throttle operation and can be used to explain to your operators, how to use the throttle. Other throttle setup information, not needed by your operators, starts on page 5.

Power On or Off



Push and release the blue key labeled PWR. The direction LED labeled F will turn on brightly. The throttle is now operating and sending out commands to the last locomotive number used. If this is the first time the throttle has been turned on, the factory setting for the active loco number is 3. Turn off the throttle power by pushing the PWR key again.

Safety Feature - If Forward [F] LED Never Stops Blinking After Turning On Power

A continuously blinking F LED right after pushing the power key means the speed control is not set fully counterclockwise to the OFF position. No speed control is possible if the F LED is blinking. To stop the blinking, just rotate the speed knob to the OFF position. Always set the speed control to the OFF position before turning off the throttle.

Throttle Does Not Recall The Last Loco Number When Turned Off

After power is turned off and then turned back on, the OPS throttle will not recall the last used locomotive number. This feature prevents inadvertent movement of a locomotive that may have been previously used. Therefore, enter the desired locomotive number as described in the next paragraph.

Entering a Locomotive Number [# , nnnn , #] 46 used for the example



Push and release the # key. Both the F and R direction LEDs turn on. Push the number keys that match the loco you wish to control. For example, loco number 46 is to be operated. Push and release 4, then push and release 6, then push and release the # key. The F direction LED remains on and the R LED turns off. The range of numbers is 1 to 9999. Loco number 0 is not a legal loco number.

Controlling Locomotive Speed



The large silver knob controls the locomotive speed. Turn it clockwise, towards MAX, to increase the locomotive speed. Turn it counterclockwise, towards OFF, to decrease locomotive speed. When not using the throttle, always set the speed control to OFF.

Controlling Locomotive Direction [DIR]



Push and release the yellow DIR key to change the locomotive's direction. Either the R or F LED indicator will be on to show the locomotive's direction.

Beware that the direction arrow doesn't indicate the physical movement of the locomotive. Rather it shows the locomotive movement relative to the locomotive's cab. For example, if the R LED is on, the locomotive is moving in the reverse direction as if you were in the cab. If the F LED is on, the locomotive is moving in the forward direction.

Activating Decoder Functions [0-9 and, F1x plus 0-2]



For functions 0 to 9, just push and release the desired number key to active the locomotive's decoder function. For example, to blow the whistle or horn, push the 2 key. As long as the key is held down, the whistle or horn will continue to blow. Release the key to stop the blowing. All other function keys are latching which means push the key to turn on the function and push to turn off.



For functions 10 to 12, first push and release the F1x key, then push and release the desired number key. For example, to activate function 12, push and release F1x followed by pushing and releasing 2.

OPS Throttle Operator's Guide - continued

To Cancel Any Entry And Make No Changes [ESC]



If in the midst of entering a loco number, push and release the ESC key to abort the number entry. No changes will occur and the previous loco number will still be active if ESC is pressed before the # key is pressed a second time.

If this key is pressed at any other time, the throttle will turn off.

Last Loco Swap [#]

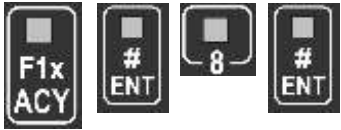


Push and Hold the # key for about 1 second or until you see the R and F LEDs turn on followed by just one of the direction LEDs. This will swap the present active loco number with the last used loco number. The swap is always between the current active loco number and the last used loco number.

The "Active Loco"

The "active loco" phrase simply means the locomotive number that is presently receiving speed, direction and function commands.

Control Accessory Decoders [ACY, # nnnn #] *The accessory address number, nnnn, must be known. It is usually different than a loco number. For the example below, accessory decoder number 8 will be used. Check with the owner if unsure what the accessory decoder addresses are for the turnouts.*



Push and release the ACY key. Next push the # key to begin entering the accessory number. Notice the ACY LED turns on to indicate all numbers entered are for accessory decoders. Enter the desired number, 8 for this example, and then press # again. The ACY LED will blink to indicate the number has been accepted.



To activate the turnout in the normal direction, tap the N-ON key which is also the 3 key. The ACY LED will flash when the command is transmitted. N means "normal" or straight when referring to a turnout's direction of travel. If using ON/OFF accessories, this will turn ON the accessory.



To activate the turnout in the reverse direction, tap the R-OFF key which is the 1 key. The ACY LED will flash when the command is transmitted. R means "reverse" or when referring to a turnout's direction of travel. If using ON/OFF accessories, this will turn OFF the accessory.



To select a different accessory decoder number, 5 for this example, just enter #, 5, # again.

As long as the ACY LED is on, all numbers are treated as accessory decoder numbers, not loco numbers.

The locomotive will continue to respond to direction, speed and function commands while in the accessory mode. For functions 1 and 3, you must **push and hold** the key to activate the function. Otherwise, a short key press is interpreted as throw the turnout.

Escape Or Cancel From Accessory Decoder Mode [ESC]



To Cancel ACY Mode - push and release the ESC key. The ACY LED will turn off and any new number entries will be treated as loco numbers. The appropriate direction LED will turn on for the locomotive being controlled.

Change Speed Step Setting

In nearly all cases, it is best to keep the original factory setting of 32 steps. This feature is left over from the old T5000 rotary encoder throttle. Note that changing the throttle's speed step setting **DOES NOT CHANGE** the DCC decoder in any way.

Change From 32 Speed Steps to 128 Speed Steps

The normal factory setting for speed steps is 32 speed steps. Use the following key sequence to change the throttle's speed steps to 128. There is no need to push the ESC key after this sequence.

F1x, DIR, #, 8, 3 and the throttle returns to normal operation.

The throttle speed step setting is saved when power is turned off if changed.

Change From 128 Speed Steps to 32 Speed Steps

To change back to the factory setting of 32 speed steps use the following key sequence. The change takes effect immediately.

F1x, DIR, #, 8, 2 and the throttle returns to normal operation.

Reset Throttle To Original Factory Settings

There are several throttle settings that are remembered, when the power is turned off or if the battery is unplugged. But, at any time, you may force the throttle back to its original factory settings, just as you received it. When the FACTORY RESET command is issued, all memory is erased and the defaults shown below are reloaded.

F1x, DIR, #, 9 resets the throttle. It is ready to use, no need to push the ESC key.

Item	Default	Item	Default
Active Loco	9999	Direction	Forward
Swap Loco	9999	Speed Steps	32

Swap Loco - Operating Notes

New Throttle: As received from the factory, or after a throttle reset or after a power cycle, swap memory is initialized to loco 9999.

After First Use Of Swap: If swap has been used, the loco number is saved until throttle power is turned off.

Miscellaneous Operating And Setup Notes

Last Used Loco Is Not Saved: To avoid throttle loco number conflicts, the T1300E OPS throttle will not save the last loco number used. Instead it resets the throttle to loco number 9999. This happens the moment the throttle is powered off.

Direction Is Always Forward For New Loco Number: When a new loco number is entered, the direction is always set to forward.

Flashing Forward LED When Power Is Turned On: When the throttle power is turned on, but the speed control is **not set to OFF**, the forward direction indicator will flash and the throttle can't be used. Set the speed control to OFF to clear this condition.

Flashing MODE LED: Immediately following power on, the number of flashes of the MODE LED shows the type of transmit mode selected by the cut trace.

Cut Traces Can Be Rejoined If Needed: Although this shouldn't be necessary if you got it right the first time, the cut traces for either the ID number or the transmit mode can be bridged to restore their connection. First scrape away the circuit board's green coating on either side of the cut. Then solder down a single strand from stranded wire to bridge across the cut trace. Be sure to verify after making any changes.

Verifying Transmit Mode

The MODE LED is used during power up to indicate which transmit mode is active. This only occurs during power up mode so watch the MODE LED after pushing the PWR key.

3 Flashes = Scan Mode Verification: While observing the MODE LED, push and release the power key. If the MODE LED flashes 3 times in one second, then goes out, the throttle is set for scan mode. This mode means the throttle continuously transmits on its own dedicated frequency.

6 Flashes = Burst Mode Verification: While observing the MODE LED, push and release the power key. If the MODE LED flashes 6 times in 2 seconds, then goes out, the throttle is set for burst mode. This mode allows multiple throttles to share a single frequency although function key response time can be slower or missed more often by the decoder.

Verifying ID Number Using Command Station

For this command to work properly, only one throttle can be checked at a time. First, turn off all wireless throttles and disconnect all plug-in throttles. The T counter should be zero when all throttles are off. If not, double check for a hidden throttle then push the reset button on the Command Station. Push the Command Station keys in the sequence shown.

- **SHOW,**
- **ID** [the number 8 key]

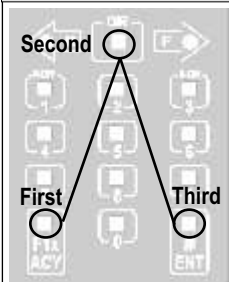
```
Throttle ID = 01
Loco No.    = 9999
```

If there is no wireless throttle turned on, only the first line is displayed and the number is replaced by a blinking cursor. If checking several throttles (one at a time of course) push the ENT key to refresh the display.

The loco 9999 means the throttle doesn't have a locomotive number entered. This will always be the loco number for a T1300E throttle when first powered on. Enter the desired loco number into the throttle and push ENT on the Command Station to refresh the display.

○ **ESC** Push the ESC key to cancel the Show command.

Entering Soft Setup Mode



Press and release each key, in the sequence shown to initiate the throttle setup mode. The fourth entry is a number that selects what will be setup or changed inside the throttle. Initiating the soft setup mode is sufficiently different from normal operation which makes it unlikely for users to accidentally enter this mode.



plus a number
between 0 and 9

Check Software Version

This feature allows the internal software to flash the LOBAT LED. For version 6 Command Station software, the T1300 uses v1.2 software. When the key sequence, shown below, is done, the LOW BAT indicator will have two long flashes followed by two short flashes. This means that v1.2 software is in the throttle. This is a one time command and after flashing the LED, the throttle returns to normal operation. There is no need to push the ESC key after this sequence.

F1x, DIR, #, 5 and note the duration and number of flashes.

The flashes will vary depending on software version and vintage of the T1300E throttle.

Owner's Guide Special Notes

Note 1: Fully Charge Battery Before First Use

The internal Lithium-Polymer battery is only partially charged. Be sure to charge it up completely before using the throttle. Allow at least 4 hours or until the blue charging LED turns off.

Note 2: Throttle ID Must Be Set Before Using.

If the throttle ID has not been set, all of the LED indicators will be flashing on and off. Set the ID number before using the throttle.

Note 3: Never Drill Into The Box

There is risk that the battery will be compromised which might result in battery failure, fire and/or explosion. Please review the battery precautions on page 11.

Note 4: The throttle does not remember the last locomotive number used.

Note 5: The last loco swap memory is cleared when power is turned off.

Note 6: Getting Into Setup Mode Requires Special Key Sequence

To prevent operators from accidentally getting into any of the throttle setup modes, a unique key sequence is used.

Owner's Guide To OPS Throttle Setup

Charge Throttle's Battery First. 6

Hard Setups - Done With Cut Traces and Switches

Opening Up Case	6
Set ID Number	6
Set Transmit Frequency	7
Set Scan Or Burst Transmit Mode	7
Verifying Transmit Mode	8
Verifying ID Number Using Command Station.	8

Soft Setups - Done With Special Key Sequences

Select Speed Steps	9
Show Software Version	9
Factory Reset	9

Other Important Topics

Swap Loco - Operating Notes	9
Active Loco IS NOT SAVED and Other Operating Notes.	9
Miscellaneous Notes and Tips For Best Performance	10
Battery/ Charger Specifications, Battery Replacement.	11

Charging The Battery - Fully Charge Before Using!

The CVP Products supplied universal USB charger plugs into any source of AC voltage from 90VAC to 240VAC. Output is 5VDC.

Plug one end of the supplied adapter cable into the USB charger and the other end into the throttle. The plugs are polarized and can only be inserted one way. Don't force them. The blue CHG LED turns on while charging and will automatically turn off when the battery is fully charged. Always turn throttle off while charging (red direction LED is off).



Opening Up The Throttle

To gain access to the frequency and ID setting area, you must open up the throttle. Remove the 4 screws from the back. Lift the back up and lay it on its side. Unplug the battery pack by pulling straight up on the plug's wires and set the back plate aside. This will allow easy access to the area where you can set the ID and select the frequency.

Set Throttle ID Number

Each throttle used on the EASYDCC System must have a unique and separate ID number. Duplicate ID numbers are not allowed. ID numbers for wireless throttles are in the range of 1 to 16. ID 0 is not a valid ID number which is grayed out in the table.

ID numbers are **permanently assigned** by cutting traces on the throttle's circuit board. By cutting the traces, there is no way a user can accidentally change the ID number.

Use a sharp hobby knife to completely cut through the copper trace at the X. Since this is a one time setting, it is OK cut away the copper. Use a magnifier to verify that the copper is completely cut.



Caution - All LEDs Flashing

Throttle is shipped with all traces uncut. If power is applied, all of the LEDs will flash to indicate no ID has been selected. **Push and hold the PWR key** to shut off the throttle. Then cut the traces to select an ID number.

Verify ID Number Before Using

See Page 8

Changing ID Number

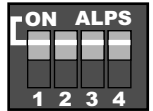
To bridge a cut trace, use a single strand of wire from a multi-strand wire and carefully solder it across the cut trace. You may scrape off some of the green paint to expose more copper if necessary.

ID#	ID0	ID1	ID2	ID4	ID8	
0	uncut	uncut	uncut	uncut	uncut	Group 1
1	cut	uncut	uncut	uncut	uncut	
2	uncut	cut	uncut	uncut	uncut	
3	cut	cut	uncut	uncut	uncut	
4	uncut	uncut	cut	uncut	uncut	
5	cut	uncut	cut	uncut	uncut	
6	uncut	cut	cut	uncut	uncut	
7	cut	cut	cut	uncut	uncut	
8	uncut	uncut	uncut	cut	uncut	Group 2
9	cut	uncut	uncut	cut	uncut	
10	uncut	cut	uncut	cut	uncut	
11	cut	cut	uncut	cut	uncut	
12	uncut	uncut	cut	cut	uncut	
13	cut	uncut	cut	cut	uncut	
14	uncut	cut	cut	cut	uncut	
15	cut	cut	cut	cut	uncut	
16	uncut	uncut	uncut	uncut	cut	

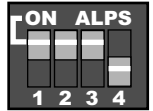
Set Throttle Frequency

There are a total of 16 frequencies available. The 4 switches select the transmit frequency. To set or change the transmit frequency, use the table below to find the switch positions for the desired frequency.

For example, the original factory setting is frequency 0, which means all of the switches are set ON. That means all of the little switch actuators are all pushed towards the "ON" printed on the switch. The drawing to the right shows the switches set for frequency 0.



The second drawing shows the switches set for frequency 8 which is switch number 1, 2, and 3 ON and switch 4 turned OFF.



The switch numbers 1-4 are marked on the switch itself. The first 8 frequencies use the same switch settings as the classic RF1300 throttle which are all part of Group-1 for the XF-Series wireless receiver.

Any frequency switch changes take effect immediately.

Freq Number	Switch Number				Frequency MHz	Receiver Type	
	1	2	3	4			
0	On	On	On	On	903.37	XFG1, RX904	Group 1
1	Off	On	On	On	906.37	XFG1, RX904	
2	On	Off	On	On	907.87	XFG1, RX904	
3	Off	Off	On	On	909.37	XFG1, RX904	
4	On	On	Off	On	912.37	XFG1, RX904	
5	Off	On	Off	On	915.37	XFG1, RX904	
6	On	Off	Off	On	919.87	XFG1, RX904	
7	Off	Off	Off	On	921.37	XFG1, RX904	
8	On	On	On	Off	904.87	XFG2 Only	Group 2
9	Off	On	On	Off	910.87	XFG2 Only	
10	On	Off	On	Off	913.62	XFG2 Only	
11	Off	Off	On	Off	916.87	XFG2 Only	
12	On	On	Off	Off	918.12	XFG2 Only	
13	Off	On	Off	Off	923.12	XFG2 Only	
14	On	Off	Off	Off	924.62	XFG2 Only	
15	Off	Off	Off	Off	926.12	XFG2 Only	

Set Throttle Transmit Mode

Scan Mode is the best and provides 16 dedicated frequencies, one for each of 16 wireless throttles. This is the factory default setting - no need to do anything. The benefits are fast response time, no time delay, and no interference from other throttles.

Burst Mode is the older style of transmission and is used when sharing a frequency with the older RF1300 and T9000E throttles.

To activate Burst Mode, cut at the X in the rectangle labeled B/S. The copper trace must be completely severed.

Note: The radio receiver/basestation must match the throttle setting. For a much more detailed explanation of the two modes, along with the pros and cons of the two modes, please see the EASYDCC Installation and Operation Manual (the orange book).

