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11 Attorneys for Plaintiffs  
12 DEI Holdings, Inc.,  
Directed, LLC, and Directed  
13 Electronics Canada Inc.

14 UNITED STATES DISTRICT COURT  
15 SOUTHERN DISTRICT OF CALIFORNIA  
16

17 DEI HOLDINGS, INC., DIRECTED,  
18 LLC, and DIRECTED  
ELECTRONICS CANADA INC.,

19 Plaintiffs,  
20

21 v.

22 AUTOMOTIVE DATA SOLUTIONS,  
INC.,

23 Defendant.  
24  
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26  
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Case No. **'19CV0478 WQHJLB**

**COMPLAINT FOR PATENT  
INFRINGEMENT**

**JURY TRIAL DEMANDED**

1 Plaintiffs DEI Holdings, Inc., Directed, LLC, and Directed Electronics Canada  
2 Inc. (collectively, “DEI” or “Plaintiffs”), by and through their attorneys, hereby  
3 demand a jury trial and complain of Defendant Automotive Data Solutions, Inc.  
4 (“ADS” or “Defendant”) as follows:

5 **I. NATURE OF ACTION**

6 1. This is an action for patent infringement arising under the patent laws of  
7 the United States, 35 U.S.C. §§ 100, *et seq.*, to enjoin infringement and obtain  
8 damages resulting from Defendant’s unauthorized manufacture, use, sale, offer to sell,  
9 and/or importation into the United States of products, methods, processes, services,  
10 and/or systems that infringe one or more claims of DEI’s United States Patent Nos.  
11 7,191,053 (“the ’053 patent”) and 7,483,783 (“the ’783 patent”) (collectively, the  
12 “Asserted Patents”). The Asserted Patents are attached hereto as Exhibits A and B.

13 **II. PARTIES**

14 2. Plaintiff DEI Holdings, Inc. is a corporation organized and existing under  
15 the laws of Florida with its principal place of business at One Viper Way, Vista,  
16 California 92081.

17 3. Plaintiff Directed, LLC is a limited liability company organized under the  
18 laws of the State of Delaware with its principal place of business at One Viper Way,  
19 Vista, California 92081.

20 4. Plaintiff Directed Electronics Canada Inc. is a corporation organized  
21 under the laws of Quebec, Canada with its principal place of business at 2750  
22 Alphonse-Gariepy St., Lachine, Quebec, H8T 3M2, Canada.

23 5. On information and belief, ADS is a foreign corporation organized and  
24 existing under the laws of Canada, with its principal place of business at 8400  
25 Bougainville, Montreal, Quebec H4P 2G1, Canada.

26 **III. JURISDICTION AND VENUE**

27 6. This Court has jurisdiction over the subject matter of this patent  
28 infringement action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

7. Upon information and belief, this Court has personal jurisdiction over Defendant because it has committed acts of patent infringement and/or contributed to or induced patent infringement by others in the State of California and in this District. For example, Defendant works with authorized dealers in the San Diego area to sell or induce the sale of its infringing iDataStart products. The following figure from ADS's website depicts the locations of its authorized dealers in the San Diego area (indicated by blue dots):

Best Buy - MISSION VALLEY  
CA

5151 MISSION CENTER RD -  
SAN DIEGO, CA  
USA

Best Buy - CHULA VISTA CA

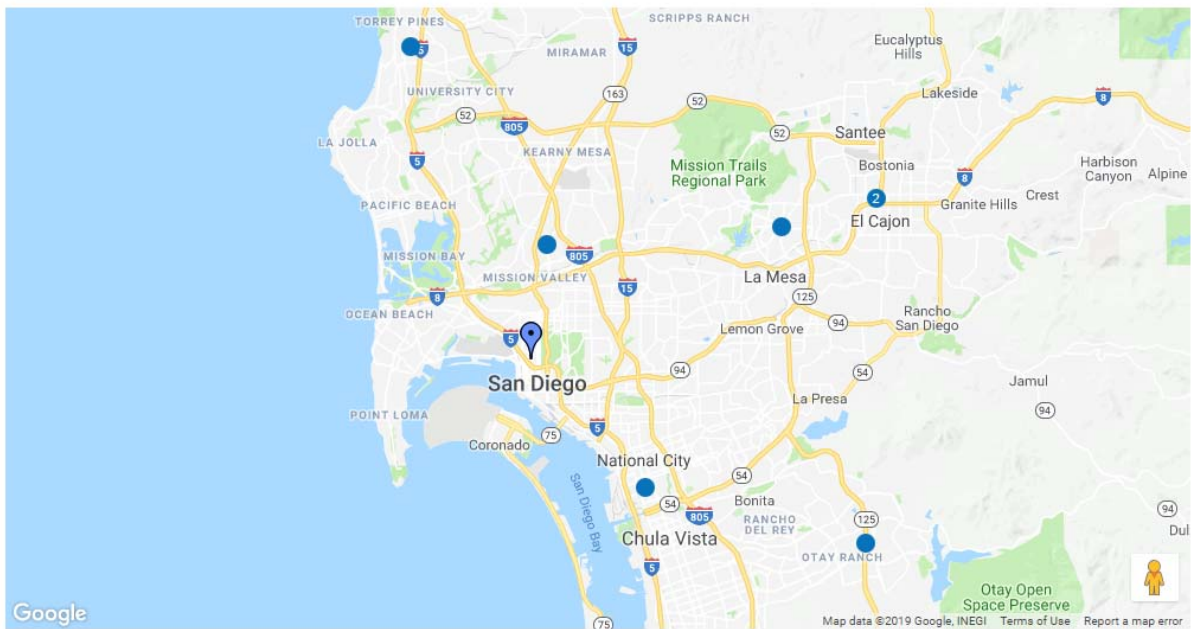
59 N BROADWAY -  
CHULA VISTA, CA  
USA

Best Buy - LA MESA CA

8401 FLETCHER PKWY -  
LA MESA, CA  
USA

Best Buy - LA JOLLA CA

8657 VILLA LA JOLLA DR -  
STE 113  
LA JOLLA, CA  
USA



See <http://www.idatastart.com/en/find-a-dealer>. As such, Defendant has established sufficient minimum contacts with this District such that it should reasonably and fairly anticipate being called into court in this District and has purposefully directed activities at residents of the state and this District.

1           8.     Venue is proper in this District pursuant to 28 U.S.C. § 1391(c)(3) as to  
2     ADS, because a foreign corporation may be sued in any judicial district where  
3     jurisdiction lies.

#### 4     **IV. BACKGROUND TO THE ACTION**

5           9.     DEI is the world leader in aftermarket vehicle remote convenience  
6     systems. These systems generally comprise at least one remote controller and an in-  
7     vehicle module, which receives commands from a remote controller. Over the past  
8     several decades, DEI and its predecessors have invested heavily in research and  
9     development of new and improved technology for such systems and components  
10    thereof.<sup>1</sup> DEI's products are sold under the Viper®, Clifford®, Python®, Autostart®,  
11    and other brand names. DEI's products support a variety of remote controllers,  
12    including LCD and LED key fobs and the SmartStart application, which runs on  
13    users' smartphones and allows customers to start, control, and locate their vehicles  
14    from any location with cellular data reception.

15          10.    The Asserted Patents cover various aspects of vehicle remote-  
16    convenience functionality (*e.g.*, locking/unlocking doors or remotely starting a  
17    vehicle). The accused remote convenience systems allow customers to remotely lock  
18    or unlock doors; open trunks; remotely start vehicles; query vehicles for information,  
19    such as vehicle location, internal temperature, or battery voltage; and other features.

20          11.    The in-vehicle module included in aftermarket remote start systems is  
21    generally used to, among other things, bypass security measures provided by the  
22    vehicle's original equipment manufacturer ("OEM"). This bypassing is necessary to  
23    enable the module to interface with the vehicle and implement commands sent by a  
24    remote controller.

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27  
28    <sup>1</sup> DEI is organized into two divisions: Sound United (consumer audio electronics) and Directed  
  (vehicle security and remote convenience systems).

1 **V. DEI'S PATENTED TECHNOLOGY**

2 U.S. Patent Number 7,191,053

3 12. Directed Electronics Canada Inc., an indirect wholly-owned subsidiary of  
4 DEI Holdings, Inc., owns by assignment the right, title and interest in U.S. Patent No.  
5 7,191,053, entitled "Remote Starting System for a Vehicle," which issued on March  
6 13, 2007 and expires on February 20, 2023, naming Normand Dery as the inventor. A  
7 true and correct copy of the '053 patent is attached hereto as Exhibit A.

8 13. DEI's '053 patent is generally directed to vehicle remote starters that are  
9 used to start vehicles at a distance using remote controllers. The remote start systems  
10 include a module, which is installed in the vehicle. Prior to the '053 patent's priority  
11 date in 2001, modules included physical dip switches to configure certain aspects of  
12 the modules. The '053's invention improved upon prior art methods by providing a  
13 specialized port and process for programming modules without the need for physical  
14 dip switches.

15 14. In particular, the '053 discloses a multi-purpose module port that is  
16 alternatively used for connecting an antenna, when receiving signals sent from a  
17 remote controller during normal use, or connecting the module to an external  
18 computer, when programming the module. Programming the module is necessary to  
19 enable it to operate with a particular make and model of the vehicle and to update it  
20 with new or improved functionality. For example, the module may be programmed to  
21 implement commands sent via the remote controller such as requests for vehicle status  
22 information, door lock/unlocking commands, security system arming/disarming  
23 commands, or remote start commands.

24 U.S. Patent Number 7,483,783

25  
26 15. Directed Electronics Canada Inc. owns by assignment the right, title and  
27 interest in U.S. Patent No. 7,483,783, entitled "Remote Starting System for a  
28 Vehicle," which issued on January 27, 2009 and expires on June 22, 2022, naming

1 Normand Dery as the inventor. A true and correct copy of the '783 patent is attached  
2 hereto as Exhibit B.

3 16. The '783 patent is similar to the '053 patent in that it relates to vehicle  
4 remote starters having modules that include a dual-purpose port for connecting either  
5 an antenna or a programming cable for programming the module. The '783 patent  
6 further claims methods for programming modules via external computer to allow the  
7 module to work with OEM security systems.

8 17. The '783 also discloses a novel method for reprogramming a module to  
9 work in different vehicles. The '783 patent's claims cover various aspects of  
10 performing maintenance procedures on vehicles, such as checking the vehicle's  
11 coolant or monitoring the vehicle's RPMs after the vehicle has been remotely started.

## 12 **VI. ACTS GIVING RISE TO INFRINGEMENT**

13 18. This action for patent infringement involves Defendant's manufacture,  
14 use, sale, offer for sale, and/or importation into the United States of infringing  
15 products, methods, processes, services, and/or systems that comprise or are used for  
16 vehicle remote convenience systems. These include but are not limited to ADS's  
17 VWX000A iDataStart System.

### 18 **COUNT I** 19 **INFRINGEMENT OF U.S. PATENT NO. 7,191,053**

20 19. DEI incorporates by reference and realleges all the foregoing paragraphs  
21 of this Complaint as if fully set forth herein.

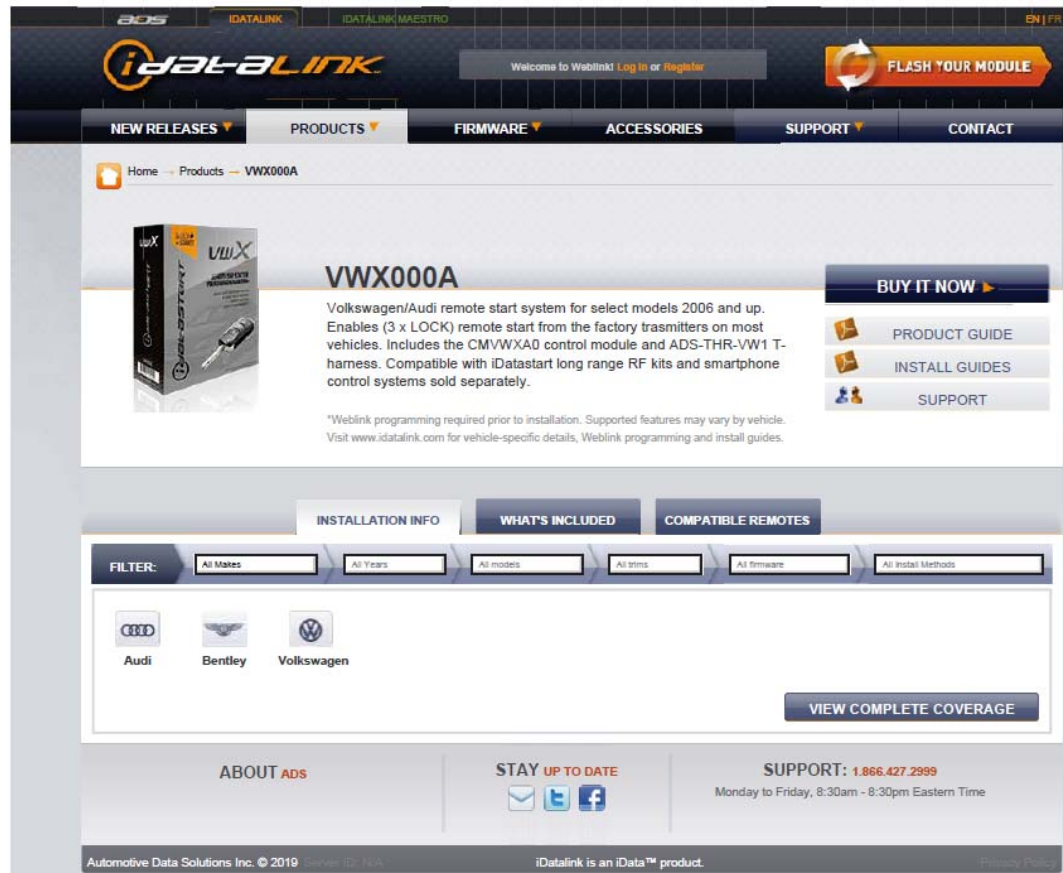
22 20. Defendant has knowledge of the '053 patent, and its infringement of that  
23 patent, at least as of the date of filing of this Complaint.

24 21. Defendant is engaged in the design, manufacture, use, importation, sale,  
25 and/or offer for sale in the United States of vehicle remote convenience systems that  
26 directly infringe, either literally or under the doctrine of equivalents, at least claims 1,  
27 2–9, 11–14, 16–19, 21–24, 26, 29–32, 34, 35, 38–40, 81–89, 91–94, 96, 99, and 100  
28 of the '053 patent.



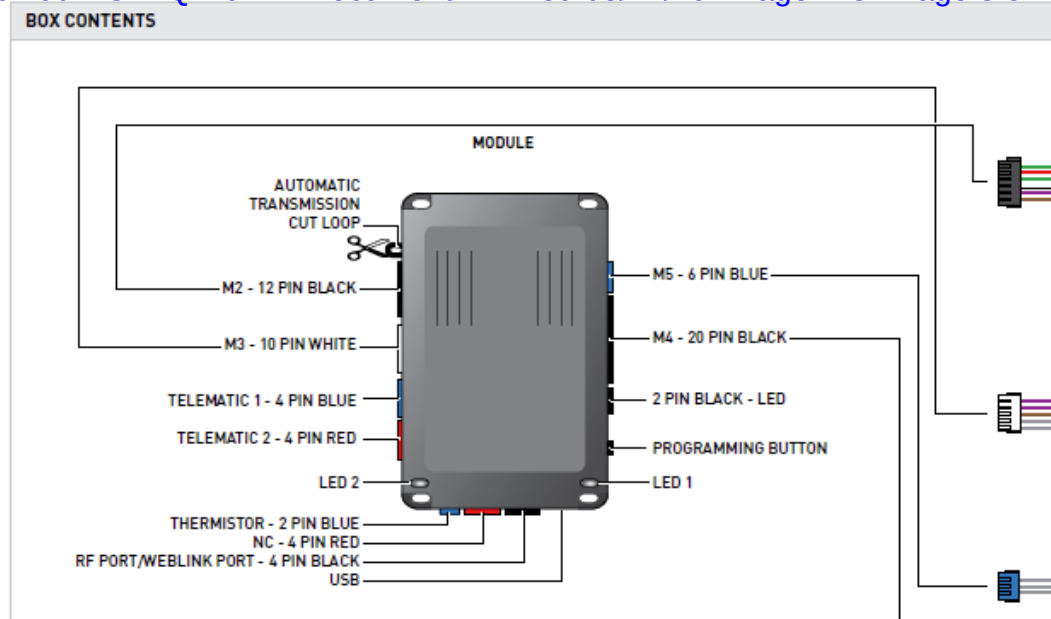
22. For example, upon information and belief, ADS imports into the United States and sells in the United States ADS's iDataStart and iDataLink products that infringe the '053 patent, including the exemplary in-vehicle module included in the VWX000A System.

23. For example, claim 1 of the '053 requires "a slave controller for mounting in a vehicle having an internal combustion engine started by a starter motor." ADS's VWX000A includes a "remote start system" slave controller comprising a "control module" and ports connectable to a vehicle via "T-harness" or other connectors:



See [http://www.idatalink.com/product/product/product\\_id/528](http://www.idatalink.com/product/product/product_id/528) (last accessed 3/1/2019).

The "CMVWXA0 control module" included with the VWX000A is depicted below:



See [http://images.idatalink.com/corporate/Content/Manuals/ADS-PG/ADS-PG-\[VWX000A\]-EN\\_20170821](http://images.idatalink.com/corporate/Content/Manuals/ADS-PG/ADS-PG-[VWX000A]-EN_20170821) (last accessed 3/1/2019) at 3.

The VWX000A is designed to be installed in vehicles having internal combustion engines, such as a 2013 Volkswagen Golf:



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**iDataLink**  
for **COMPUSTAR**

Welcome to Weblink! [Log In](#) or [Register](#)

**FLASH YOUR MODULE**

**NEW RELEASES** **PRODUCTS** **FIRMWARE** **ACCESSORIES** **SUPPORT** **CONTACT**

Home → Products → VWX000A

**VWX000A**

Volkswagen/Audi remote start system for select models 2006 and up. Enables (3 x LOCK) remote start from the factory trasmitters on most vehicles. Includes the CM/VWX00 control module and ADS-THR-VW1 T-harness. Compatible with iDatastart long range RF kits and smartphone control systems sold separately.

\*Weblink programming required prior to installation. Supported features may vary by vehicle. Visit [www.idatalink.com](http://www.idatalink.com) for vehicle-specific details, Weblink programming and install guides.

**BUY IT NOW**

**PRODUCT GUIDE**  
**INSTALL GUIDES**  
**SUPPORT**

**INSTALLATION INFO** **WHAT'S INCLUDED** **COMPATIBLE REMOTES**

**FILTER:** All Makes All Years All models All trims All firmware All install Methods

2019 2018 2017 2016 2015 2014 2013 2012 2011 2010 2009  
2008 2007 2006 2005 2004 2003 2002 2001 2000 1999 1998  
1997 1996 1995 1994 1993 1992 1991 1990 1989 1988

**VIEW COMPLETE COVERAGE**

**TECHNICAL SUPPORT: 1.888.820.3690 EXT. 203**

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22 See [http://compustar.idatalink.com/product/product/product\\_id/528](http://compustar.idatalink.com/product/product/product_id/528) (last accessed  
23 3/1/2019).

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**iDataLink**  
for COMPUSTAR

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**FLASH YOUR MODULE**

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Volkswagen/Audi remote start system for select models 2006 and up. Enables (3 x LOCK) remote start from the factory transmitters on most vehicles. Includes the CM/VWXA0 control module and ADS-THR-VW1 T-harness. Compatible with iDatastart long range RF kits and smartphone control systems sold separately.

**BUY IT NOW**

**PRODUCT GUIDE**  
**INSTALL GUIDES**  
**SUPPORT**

\*Weblink programming required prior to installation. Supported features may vary by vehicle. Visit [www.idatalink.com](http://www.idatalink.com) for vehicle-specific details, Weblink programming and install guides.

**INSTALLATION INFO** **WHAT'S INCLUDED** **COMPATIBLE REMOTES**

**FILTER:** All Makes All Years All models All trims All firmware All Install Methods

Beetle CC Eos Golf GTI  
Jetta Jetta GLI Passat Tiguan

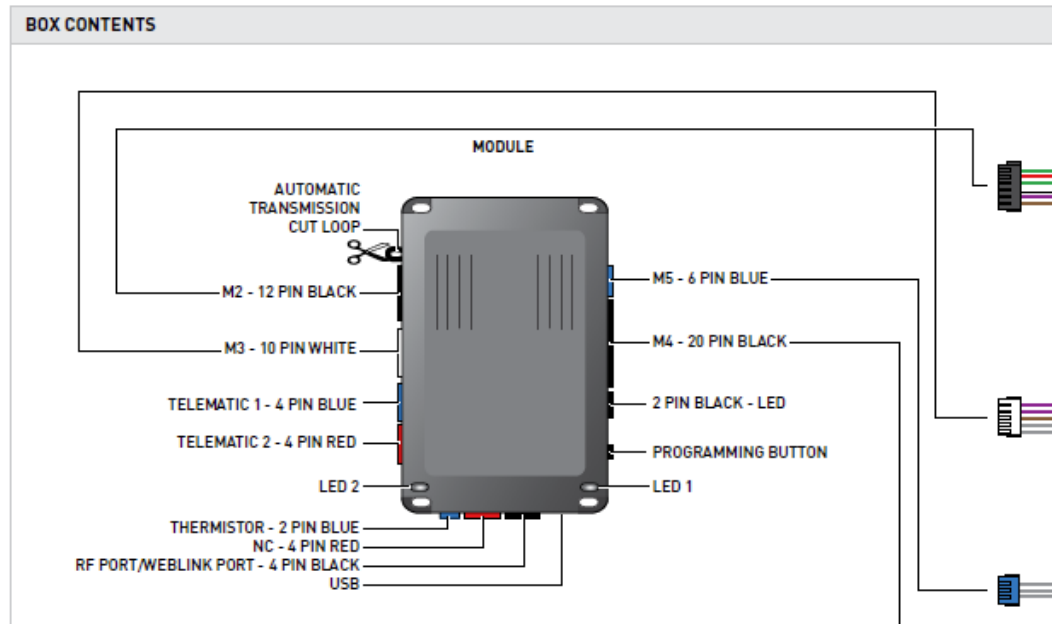
**VIEW COMPLETE COVERAGE**

**TECHNICAL SUPPORT: 1.888.820.3690 EXT. 203**

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21 See [http://compustar.idatalink.com/product/product/product\\_id/528](http://compustar.idatalink.com/product/product/product_id/528) (last accessed  
22 3/1/2019).

23 24. Claim 1 of the '053 requires an “antenna circuit input suitable for  
24 connection to an antenna circuit that is operative for picking up an RF signal.” The  
25 VW000A includes an “RF PORT/WEBLINK PORT” that meets this limitation.



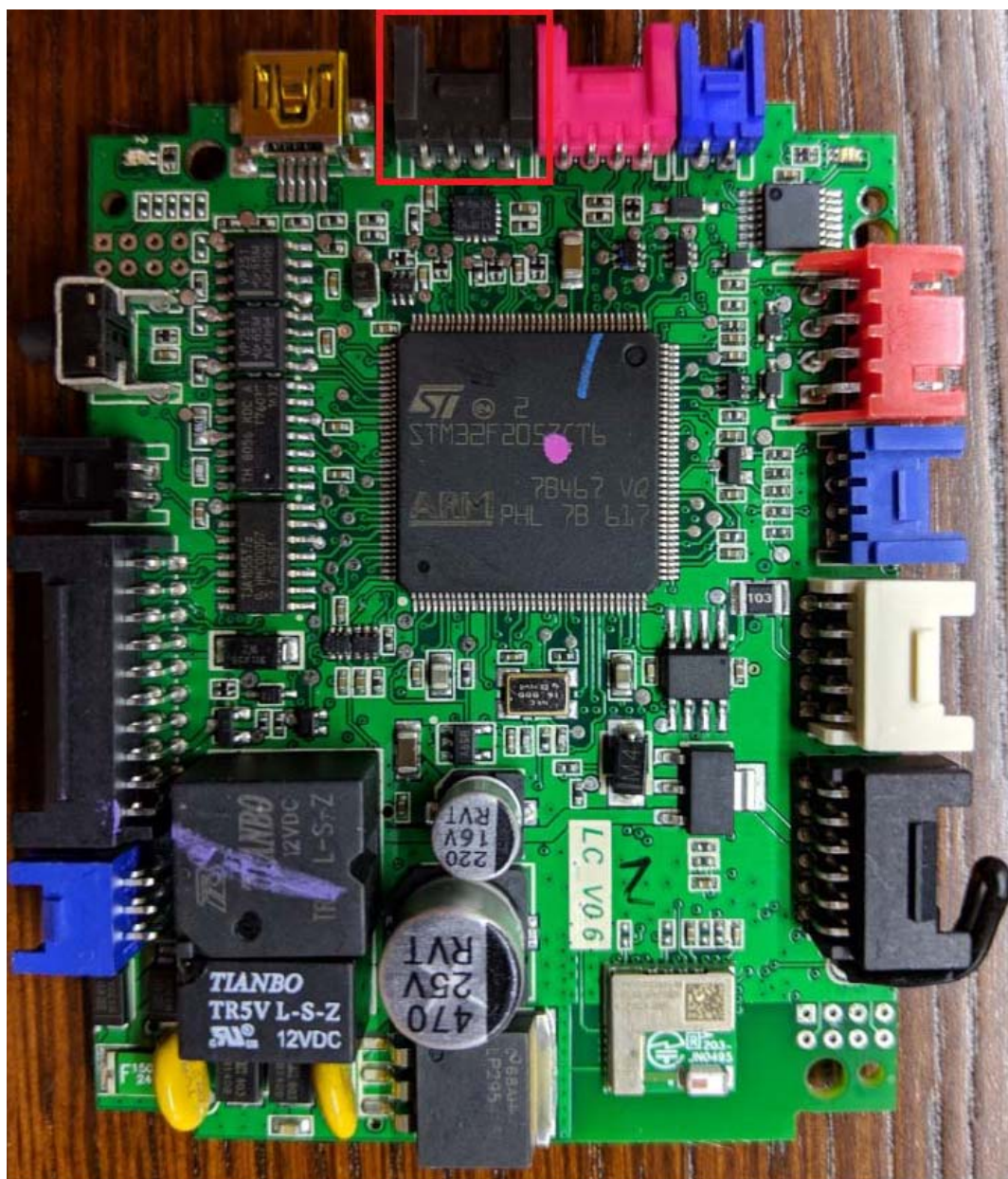
See [http://images.idatalink.com/corporate/Content/Manuals/ADS-PG/ADS-PG-\[VWX000A\]-EN\\_20170821.pdf](http://images.idatalink.com/corporate/Content/Manuals/ADS-PG/ADS-PG-[VWX000A]-EN_20170821.pdf) (last accessed 3/1/2019) at 3.

25. Claim 1 of the '053 requires "a control module in communication with said input." The VWX000A implements this limitation via the CMVWXA0 control module included in the VWX000A iDataStart system:



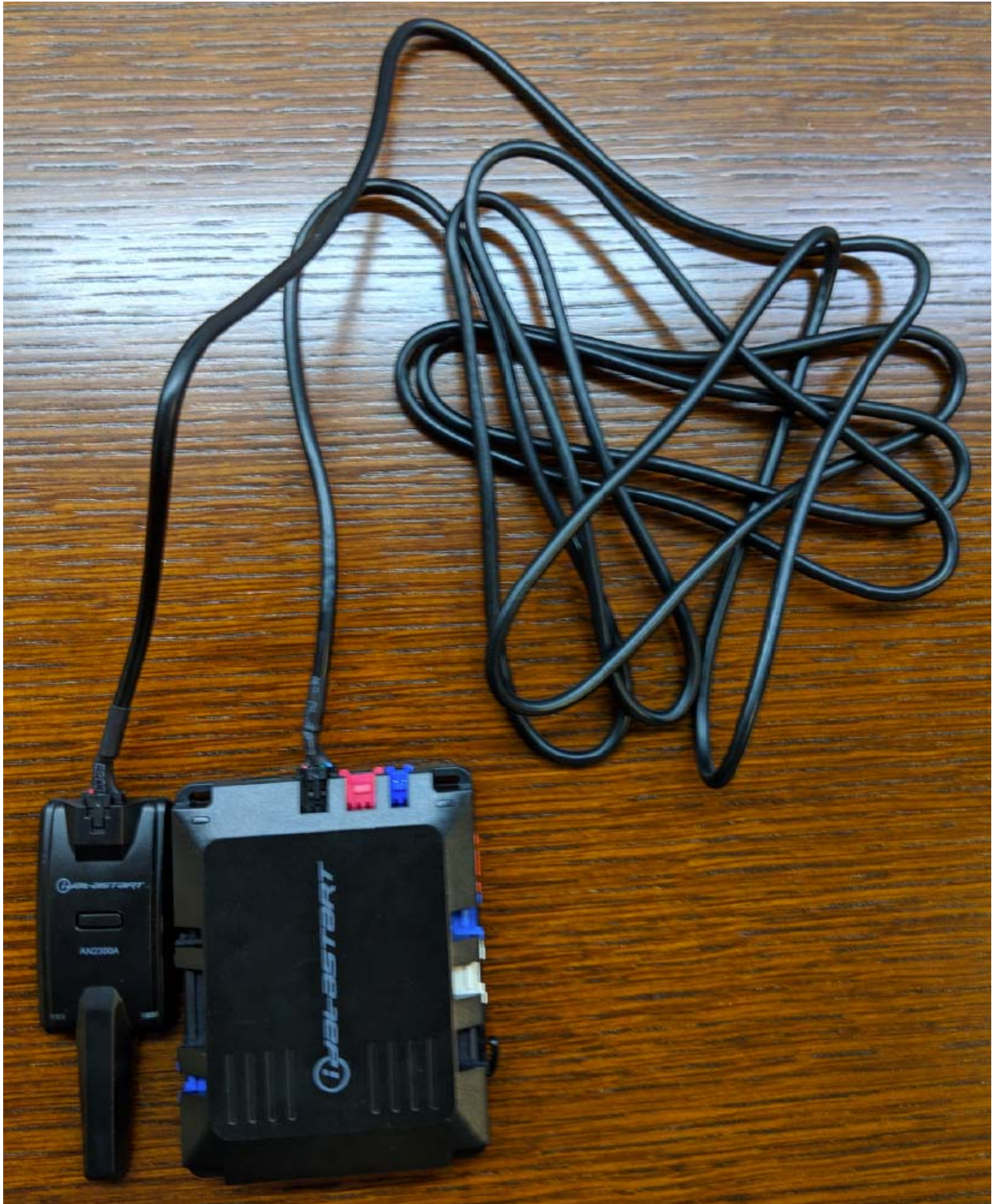
The figure below depicts the circuit board inside the above module, showing the “RF PORT” input in communication with the CMVWXA0 control module:





As depicted in the image below, an antenna and antenna cable may be connected to the slave controller's control module by inserting the cable's connectors into the antenna's port and the slave controller's RF PORT, respectively:





26. Claim 1 of the '053 requires a "CPU," one of which is included in the VWX000A:

### 3.1 ARM<sup>®</sup> Cortex<sup>®</sup>-M3 core with embedded Flash and SRAM

The ARM<sup>®</sup> Cortex<sup>®</sup>-M3 processor is the latest generation of ARM processors for embedded systems. It was developed to provide a low-cost platform that meets the needs of MCU implementation, with a reduced pin count and low-power consumption, while delivering outstanding computational performance and an advanced response to interrupts.

The ARM<sup>®</sup> Cortex<sup>®</sup>-M3 32-bit RISC processor features exceptional code-efficiency, delivering the high-performance expected from an ARM core in the memory size usually associated with 8- and 16-bit devices.

With its embedded ARM<sup>®</sup> core, the STM32F20x family is compatible with all ARM<sup>®</sup> tools and software.

*Figure 4* shows the general block diagram of the STM32F20x family.

*See*

<http://static6.arrow.com/aropdfconversion/4e0d7c48b90b2a6fe713cc12eb56f678fabb89e3/209192974324329cd002.pdf> (last accessed 3/1/2019) at 1, 21.

27. Claim 1 of the '053 requires a "storage medium storing program data for execution by said CPU," which is also included in the VWX000A:

### 3.4 Embedded Flash memory

The STM32F20x devices embed a 128-bit wide Flash memory of 128 Kbytes, 256 Kbytes, 512 Kbytes, 768 Kbytes or 1 Mbyte available for storing programs and data.

The devices also feature 512 bytes of OTP memory that can be used to store critical user data such as Ethernet MAC addresses or cryptographic keys.

### 3.6 Embedded SRAM

All STM32F20x products embed:

- Up to 128 Kbytes of system SRAM accessed (read/write) at CPU clock speed with 0 wait states
- 4 Kbytes of backup SRAM.

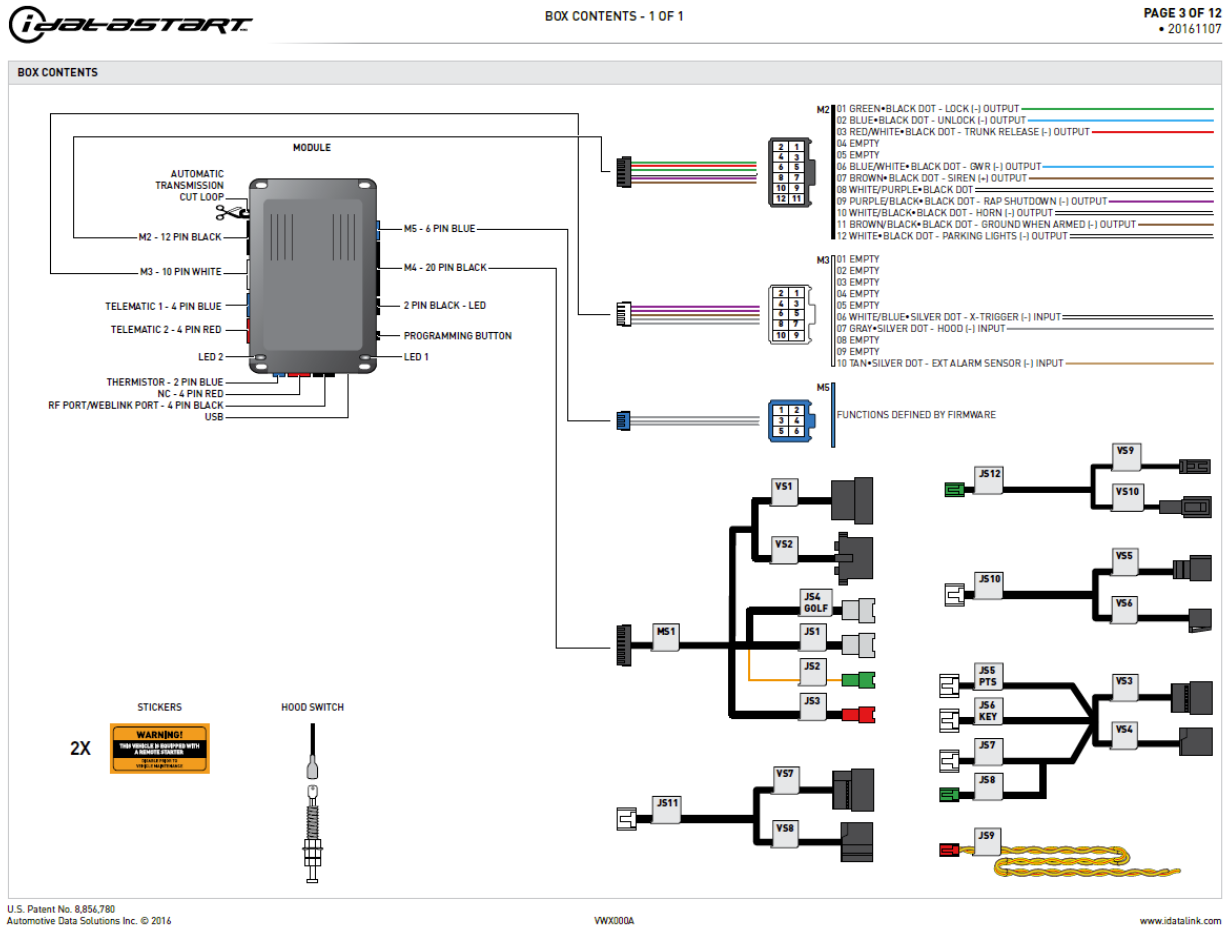
The content of this area is protected against possible unwanted write accesses, and is retained in Standby or VBAT mode.

*Id.* at 23.

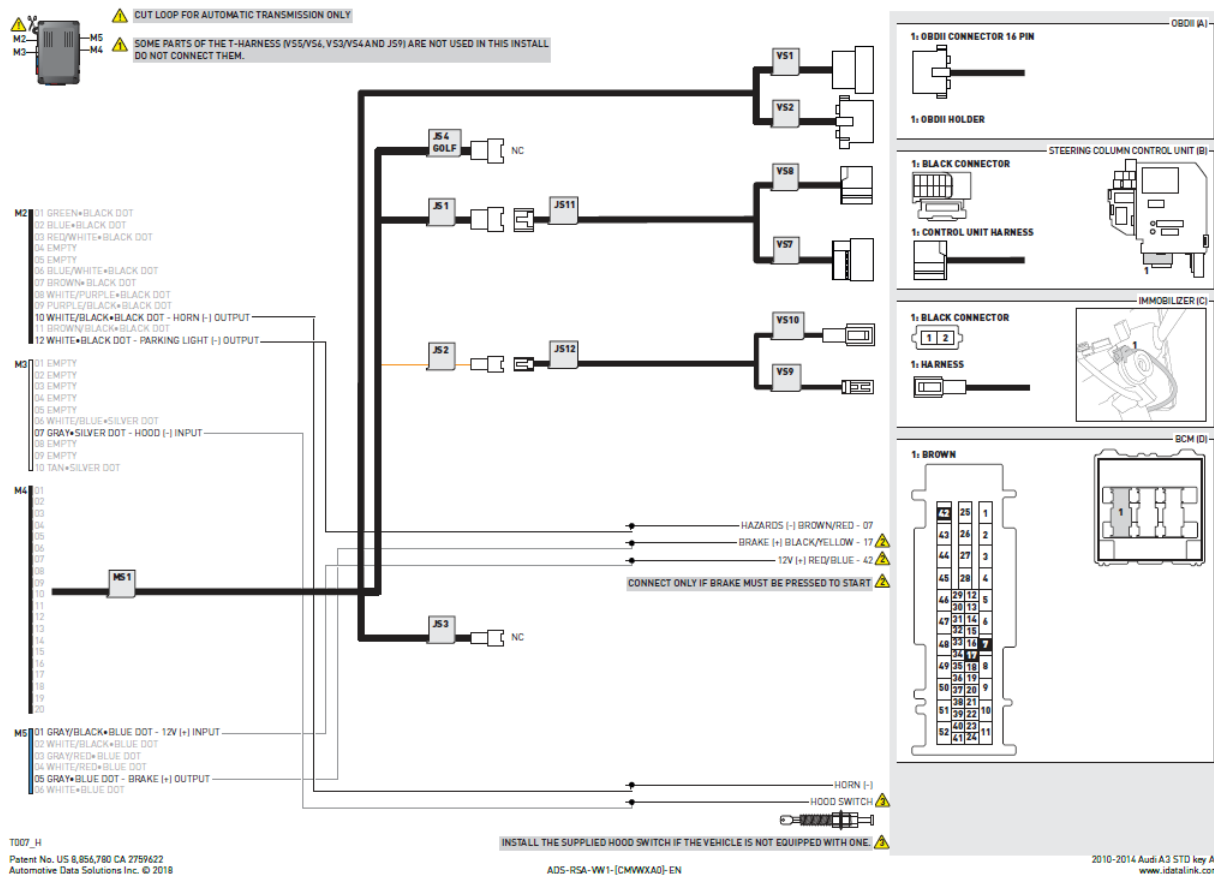
28. Claim 1 of the '053 requires "an output, said control module being responsive to an RF signal received from said antenna circuit containing a command to start the internal combustion engine to generate a command signal at said output for directing the starter motor to crank the internal combustion engine, wherein the



generation of the command signal is effected by execution of said program data by said CPU.” This feature is implemented by the VWX000A. For example, the VWX000A’s module includes one or more connections to vehicle starter and ignition circuitry comprising at least one output through which the module issues a command to the vehicle’s starter motor to crank the vehicle’s internal combustion engine:

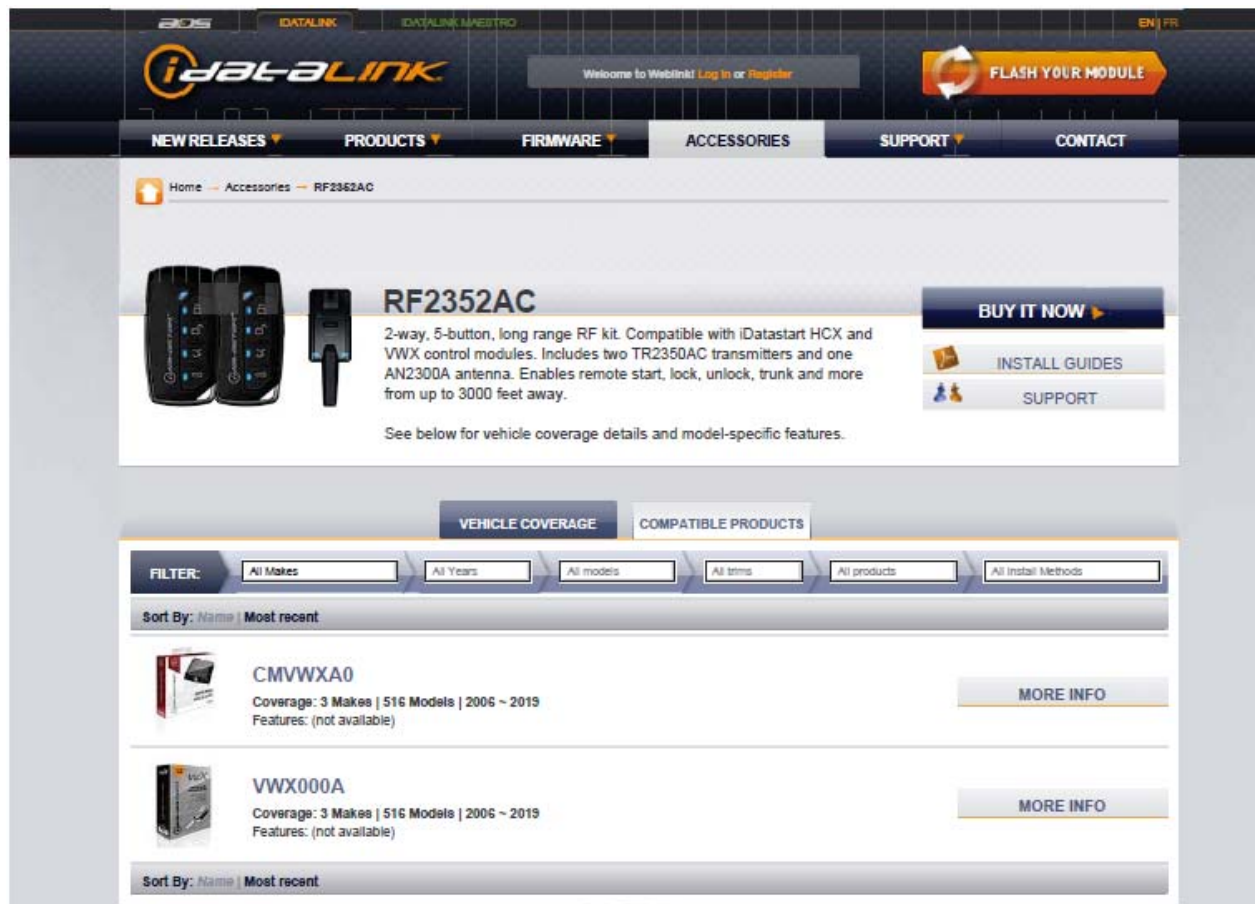


See [http://images.idatalink.com/corporate/Content/Manuals/ADS-PG/ADS-PG-\[VWX000A\]-EN\\_20170821.pdf](http://images.idatalink.com/corporate/Content/Manuals/ADS-PG/ADS-PG-[VWX000A]-EN_20170821.pdf) (last accessed 3/1/2019) at 3.



See [http://images.idatalink.com/corporate/Content/Manuals/RSA-VW1/ADS-RSA-VW1-\[CMVWXA0\]-EN\\_20181127.pdf](http://images.idatalink.com/corporate/Content/Manuals/RSA-VW1/ADS-RSA-VW1-[CMVWXA0]-EN_20181127.pdf) (last accessed 3/1/2019).

29. Upon information and belief, the generation of the command signal is effected by execution of program data by the CPU. The VWX000A's control module issues the command signal when it receives an RF signal from the antenna circuit containing a command to start the engine. For example, ADS's website advertises the TR2350AC (RF2352AC) as a compatible remote controller for the VWX000A:



See [http://www.idatalink.com/accessories/category/product\\_id/782](http://www.idatalink.com/accessories/category/product_id/782) (last accessed 3/1/2019).

The TR2350AC remote controller issues commands to the VWX000A control module to start the internal combustion engine and cause the module to generate a command signal at one or more outputs for directing the starter motor to crank the internal combustion engine.

30. Finally, claim 1 of the '053 requires that the control module be “operative to establish an electrical pathway with an external entity via said antenna circuit input to update the program data in said storage medium.” The VWX000A implements this limitation because its “RF PORT” doubles as a “WEBLINK PORT” that may be used to connect the module to an electronic device to update the module.

31. On information and belief, the VWX000A System is exemplary of other ADS vehicle remote starter products, including the iDataStart and iDataLink families

1 of products, which infringe the '053 in an identical manner.

2 32. Defendant's infringement of the '053 has caused, and is continuing to  
3 cause, damage and irreparable injury to DEI, and DEI will continue to suffer damage  
4 and irreparable injury unless and until that infringement is enjoined by this Court.

5 **COUNT II**  
6 **INFRINGEMENT OF U.S. PATENT NO. 7,483,783**

7 33. DEI incorporates by reference and realleges all the foregoing paragraphs  
8 of this Complaint as if fully set forth herein.

9 34. Defendant has knowledge of the '783 patent, and its infringement of that  
10 patent, at least as of the date of filing of this Complaint.

11 35. Defendant is engaged in the design, manufacture, use, importation, sale,  
12 and/or offer for sale in the United States of vehicle remote convenience systems that  
13 directly infringe, either literally or under the doctrine of equivalents, at least claims 1–  
14 3, 6, 7, 52, 53, 56, and 57 of the '783 patent.

15 36. Additionally, on information and belief, Defendant is engaged in the  
16 design, manufacture, use, importation, sale, and/or offer for sale in the United States  
17 of vehicle remote convenience systems that *indirectly* infringe, either literally or under  
18 the doctrine of equivalents, the '783 patent.

19 37. For example, users of ADS's VWX000A (offered for sale in the United  
20 States by Firstech) commit acts of direct infringement when they perform the steps of  
21 claims 52–53 and 56–57. Defendant has knowledge of these acts of direct  
22 infringement and that they directly infringe claims 52–53 and 56–57 of the '783 patent  
23 and nevertheless actively induces users, with specific intent, to infringe by, for  
24 example, instructing them how to use ADS's VWX000A in an infringing manner in  
25 ADS's user manuals. ADS's VWX000A performs a material part of the claimed  
26 inventions of the '783 and is not a staple article or commodity of commerce suitable  
27 for substantial non-infringing use, and Defendant knows that the VWX000A is  
28 especially made and adapted for use in an infringing manner.

1           38. Defendant is liable for joint infringement of the '783 with users of the  
2 VWX000A because it (1) conditions participation in an activity or receipt of a benefit  
3 upon performance of a step or steps of a patented method (in particular, Defendant  
4 conditions remote start functionality of the VWX000A on programming the  
5 VWX000A module with ADS's firmware using ADS's website, according to the  
6 instructions in ADS's user manuals), and (2) establishes the manner or timing of that  
7 performance (by establishing the precise timing and steps that need to be carried out to  
8 program the VWX000A module).

9           39. For example, upon information and belief, ADS imports into the United  
10 States and sells in the United States ADS's iDataStart and iDatalink products that  
11 infringe the '783 patent, including the exemplary in-vehicle module included in the  
12 VWX000A System.

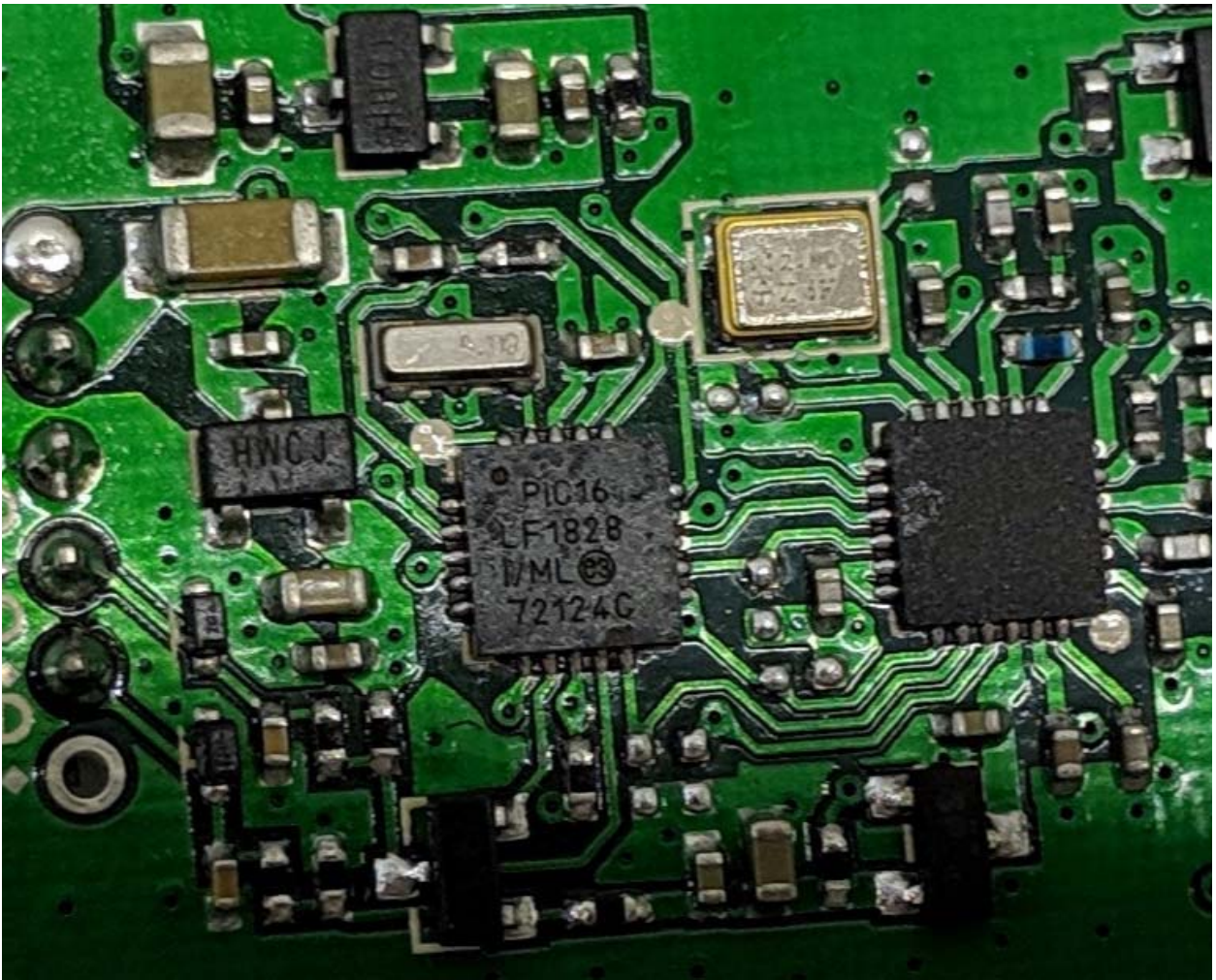
13           40. For example, claim 1 of the '783 requires "a slave controller for  
14 mounting in a vehicle having an internal combustion engine started by a starter  
15 motor." This element is practiced by ADS's VWX000A, as explained above in  
16 connection with claim 1 of the '053. *See supra* ¶ 23.

17           41. Claim 1 of the '783 requires "an antenna circuit input for connection to  
18 an antenna circuit suitable for picking up a radio frequency signal, the antenna circuit  
19 having a component for preprocessing the radio-frequency signal." This element is  
20 practiced by ADS's VWX000A, as explained above in connection with claim 1 of the  
21 '053, and as explained as follows. *See supra* ¶ 24. The antenna sold by ADS as part  
22 of the "RF kit" designed to work with the VWX000A includes the circuit depicted  
23 below:





Exhibit X [ITC Exhibit 45]. The antenna circuit includes a component for pre-processing a radio-frequency signal:



The pic16 LF1828 microcontroller depicted above pre-processes RF signals on the antenna circuit:





# PIC16(L)F1824/8

## 14/20-Pin Flash Microcontrollers with XLP Technology

### High-Performance RISC CPU

- Only 49 Instructions to Learn:
  - All single-cycle instructions except branches
- Operating Speed:
  - DC – 32 MHz oscillator/clock input
  - DC – 125 ns instruction cycle
- Up to 8 Kbytes Linear Program Memory Addressing
- Up to 256 bytes Linear Data Memory Addressing
- Interrupt Capability with Automatic Context Saving
- 16-Level Deep Hardware Stack with Optional Overflow/Underflow Reset
- Direct, Indirect and Relative Addressing modes:
  - Two full 16-bit File Select Registers (FSRs)
  - FSRs can read program and data memory

### Flexible Oscillator Structure

- Precision 32 MHz Internal Oscillator Block:
  - Factory calibrated to  $\pm 1\%$ , typical
  - Software selectable frequencies range of 31 kHz to 32 MHz
- 31 kHz Low-Power Internal Oscillator
- Four Crystal modes up to 32 MHz
- Three External Clock modes up to 32 MHz
- 4X Phase Lock Loop (PLL)
- Fail-Safe Clock Monitor:
  - Allows for safe shutdown if peripheral clock stops
- Two-Speed Oscillator Start-up
- Reference Clock module:
  - Programmable clock output frequency and duty-cycle

### Special Microcontroller Features

- 1.8V-5.5V Operation – PIC16F1824/8
- 1.8V-3.6V Operation – PIC16LF1824/8
- Self-Programmable under Software Control
- Power-on Reset (POR), Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)
- Programmable Brown-out Reset (BOR)
- Extended Watchdog Timer (WDT)
- In-Circuit Serial Programming™ (ICSP™) via Two Pins
- In-Circuit Debug (ICD) via Two Pins
- Enhanced Low-Voltage Programming (LVP)
- Operating Voltage Range:
  - 1.8V-5.5V (PIC16F1824/8)
  - 1.8V-3.6V (PIC16LF1824/8)
- Programmable Code Protection
- Power-Saving Sleep mode

### Extreme Low-Power Management PIC16LF1824/8 with XLP

- Sleep mode: 20 nA @ 1.8V, typical
- Watchdog Timer: 200 nA @ 1.8V, typical
- Timer1 Oscillator: 650 nA @ 32 kHz, 1.8V, typical
- Operating Current: 48  $\mu$ A/MHz @ 1.8V, typical

### Analog Features

- Analog-to-Digital Converter (ADC) module:
  - 10-bit resolution, up to 12 channels
  - Auto acquisition capability
  - Conversion available during Sleep
- Analog Comparator module:
  - Two rail-to-rail analog comparators
  - Power mode control
  - Software controllable hysteresis
- Voltage Reference module:
  - Fixed Voltage Reference (FVR) with 1.024V, 2.048V and 4.096V output levels
  - 5-bit rail-to-rail resistive DAC with positive and negative reference selection

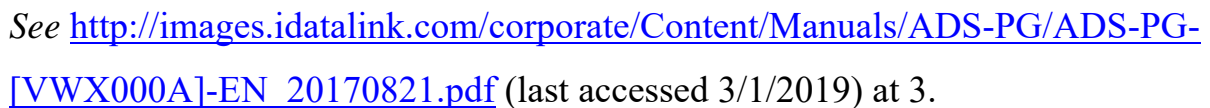
### Peripheral Highlights

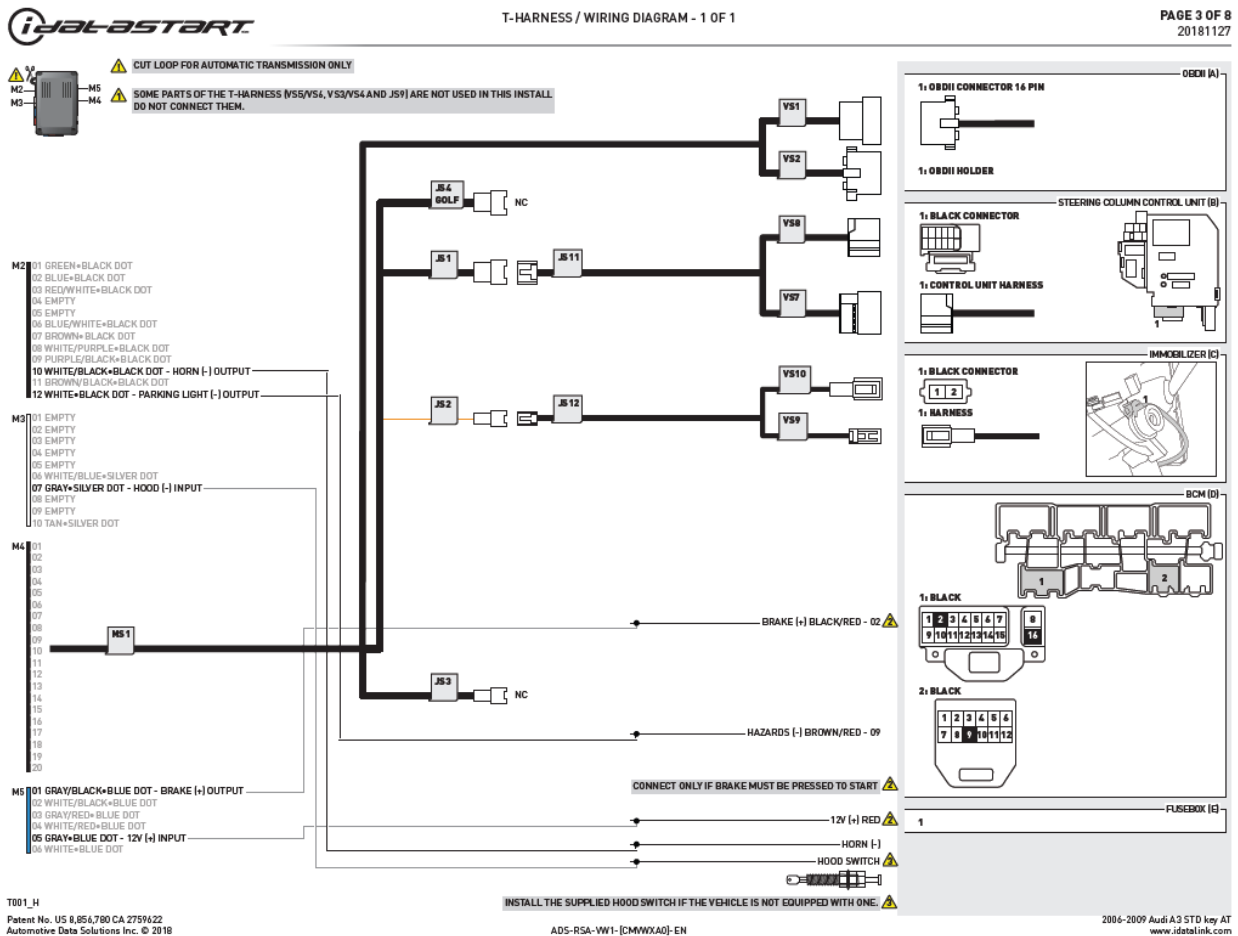
- Up to 17 I/O Pins and 1 Input Only Pin:
  - High current sink/source 25 mA/25 mA
  - Programmable weak pull-ups
  - Programmable interrupt-on-change pins
- Timer0: 8-bit Timer/Counter with 8-bit Prescaler
- Enhanced Timer1:
  - 16-bit timer/counter with prescaler
  - External Gate Input mode
  - Dedicated, low-power 32 kHz oscillator driver
- Three Timer2-types: 8-bit Timer/Counter with 8-bit Period Register, Prescaler and Postscaler
- Two Capture, Compare, PWM (CCP) modules
- Two Enhanced CCP (ECCP) modules:
  - Software selectable time bases
  - Auto-shutdown and auto-restart
  - PWM steering
- Master Synchronous Serial Port (MSSP) with SPI and I<sup>2</sup>C™ with:
  - 7-bit address masking
  - SMBus/PMBus™ compatibility
- Enhanced Universal Synchronous Asynchronous Receiver Transmitter (EUSART) module
- mTouch™ Sensing Oscillator module:
  - Up to 12 input channels
- Data Signal Modulator module:
  - Selectable modulator and carrier sources
- SR Latch:
  - Multiple Set/Reset input options
  - Emulates 555 Timer applications

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See <http://www.microchip.com/downloads/en/DeviceDoc/40001419F.pdf> at 1.





See [http://images.idatalink.com/corporate/Content/Manuals/RSA-VW1/ADS-RSA-VW1-\[CMVWXA0\]-EN\\_20181127.pdf](http://images.idatalink.com/corporate/Content/Manuals/RSA-VW1/ADS-RSA-VW1-[CMVWXA0]-EN_20181127.pdf) (last accessed 3/1/2019) at 3.

43. Claim 1 of the '783 requires a "control module, coupled to said antenna circuit input." This element is practiced by ADS's VWX000A, as explained above in connection with claim 1 of the '053. *See supra* ¶ 25.

44. Claim 1 of the '783 requires that the control module be "responsive to a signal transmitted through said antenna circuit input and originating from the antenna circuit to generate a command signal at said output for directing the starter motor to crank the internal combustion engine." This element is practiced by ADS's VWX000A, as explained above in connection with claim 1 of the '053. *See supra* ¶ 28.

45. Finally, claim 1 of the '783 requires the control module to be "operative to establish a data communication with an external entity through said antenna circuit

input to perform a maintenance procedure,” the maintenance procedure comprising, for example, updating the program data in the module. This element is practiced by ADS’s VWX000A, as explained above in connection with claim 1 of the ’053. *See supra* ¶ 30.

46. On information and belief, the VWX000A System is exemplary of other ADS vehicle remote starter products, including the iDataStart and iDatalink families of products, which infringe the ’783 in an identical manner.

47. Defendant’s infringement of the ’783 has caused, and is continuing to cause, damage and irreparable injury to DEI, and DEI will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

### **REQUEST FOR RELIEF**

WHEREFORE, DEI respectfully requests:

(a) Judgment be entered that Defendant has infringed each of the Asserted Patents;

(b) Judgment be entered that the commercial use, sale, offer for sale, manufacture, or importation by Defendant of at least ADS’s iDataStart and iDatalink vehicle remote convenience systems infringe each of the Asserted Patents;

(c) That, in accordance with 35 U.S.C. § 283, Defendant, and all affiliates, employees, agents, officers, directors, attorneys, successors, and assigns and all those acting on behalf of or in active or concert or participation with any of them, be permanently enjoined from infringing each of the Asserted Patents;

(d) An award of damages sufficient to compensate DEI for Defendant’s direct infringement of each of the Asserted Patents, including lost profits suffered by DEI as a result of Defendant’s direct infringement for each of the Asserted Patents, including lost profits suffered by DEI as a result of Defendant’s infringement and in an amount not less than a reasonable royalty;

(e) An award of damages sufficient to compensate DEI for Defendant’s indirect infringement of each of the Asserted Patents, including lost profits suffered by

1 DEI as a result of Defendant's infringement and in an amount not less than a  
2 reasonable royalty;

3 (f) An order awarding DEI treble damages under 35 U.S.C. § 284 as a result  
4 of Defendant's willful and deliberate infringement of each of the Asserted Patents;

5 (g) That the case be found exceptional under 35 U.S.C. § 285 and that DEI  
6 be awarded its attorneys' fees;

7 (h) Costs and expenses in this action;

8 (i) An award of pre-judgment and post-judgment interest; and

9 (j) Such other and further relief as the Court may deem just and proper  
10 under the circumstances.

11 Dated: March 12, 2019

Respectfully submitted,

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14 By: /s/ Matthew J. Brigham  
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*Electronics Canada Inc.*  
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**DEMAND FOR JURY TRIAL**

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, DEI respectfully demands a trial by jury on all issues triable by jury.

Dated: March 12, 2019

Respectfully submitted,

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