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Signatures

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Revision History

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| **Rev.** |  | **Date** |  | **Initials** |  | **Description** |
| 0.1 |  | 20090305 |  | DAT |  | Initial draft based upon 15000315 Rev 0.4 |
| 0.2 |  | 20090403 |  | KW |  | Updated document numbers |
| 0.3 |  | 20090409 |  | DAT |  | Updated hierarchy diagram |
| 0.4 |  | 20090901 |  | KW |  | Single Author, SCB -> SC, general cleanup |
| 0.5 |  | 20091026 |  | DAT |  | Replaced references to 15000314 with 15000355 for Shaver Pump Interface Protocol Verification |
| A |  | 20091026 |  | DAT |  | Initial Release |
| B |  | 02-Oct-2019 |  | DAT |  | Replace CONDOR with INTELLIO Link, Update Tracing, Update Formatting |

Glossary

SC – System Controller

MC – Motor Controller

SRS – Software Requirements Specification

SDS – Software Design Specification

SDV – Software Design Verification (unit tests)

FS – Wired Footswitch

DFMEA – Design Failure Modes Effect and Analysis

RA – Risk Analysis

MDU – Motor Drive Unit

PI – Powered Instrument

Handpiece (User Needs) – Used to mean MDU

Handpiece (Other docs) – Used to mean MDU or PI

References

1. 15008058 – DYONICS II User Needs and Design Input Requirements
2. 16500014 – Risk Analysis
3. 16000016 – Design FMEA
4. 15000694 – DYONICS II EIP System Specification
5. 15000695 – DYONICS II EIP System Controller Software Requirements Specification
6. 15000696 – DYONICS II EIP System Controller Software Design Specification
7. 15000697 – DYONICS II EIP System Controller Software Design Verification
8. 15000285 – Shaver Pump Interface Protocol
9. 15000355 – Shaver Pump Interface Protocol Verification
10. 15000286 – DYONICS II RS485 Accessory Protocol
11. 15000704 – DYONICS II EIP RS485 Accessory Protocol Verification
12. 15007915 – DYONICS II INTELLIO Link Protocol
13. 15008643 – DYONICS II INTELLIO Link Interface Protocol Verification
14. 15000700 – DYONICS II EIP System Software Design Verification
15. 15000721 – DYONICS II EIP Inter Controller Protocol
16. 15000722 – DYONICS II EIP Inter Controller Protocol Verification
17. 15000701 – DYONCS II EIP Motor Controller Software Requirements Specification
18. 15000702 – DYONCS II EIP Motor Controller Software Design Specification
19. 15000703 – DYONCS II EIP Motor Controller Design Verification
20. 15000283 – DYONICS II Footswitch Software Requirements Specification
21. 15000284 – DYONICS II Footswitch Software Design Specification
22. 15000303 – DYONICS II Footswitch Software Design Verification
23. 15000388 – Small Joint Motor Software Design Specification
24. 15000768 – DYONICS II EIP Software Upgrade and Repair
25. 15008093 – DII System Software Upgrade and Repair Verification
26. 15008940 – Reliant RS485 Protocol Specification
27. 15008986 – Reliant RS485 Protocol Verification

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# Overview

The purpose of this document is to provide traceability between the various documents that comprise the user needs, requirements, specifications and tests for the DYONICS II. A separate document is used to provide traceability for software hazard mitigations.

# Document Hierarchy

All documents are ultimately derived from the **DYONICS II User Needs Design Input Requirements** document **(**15008058). The software specific parts of the user needs are traced with this document. The **DYONICS II EIP System Specification** (15000694) is also derived from the 15008058 document, and describes the overall architecture of the system and the non-software aspects of it.

The **DYONICS II EIP System Controller Software Requirements Specification** (15000695) is a top-level requirements specification that is derived from the software functional requirements in the 15008058, and the **DYONICS II EIP System Specification** (15000694)**.** Lower level requirements documents for internal components and accessories on the DYONICS II system are derived from 15000695, namely the **DYONICS II EIP Motor Controller Software Requirements Specification** (15000701), the **DYONICS II EIP Software Upgrade and Repair** (15000388), and the **DYONICS II Footswitch Software Requirements Specification** (15000283).

Each requirements document then derives a corresponding Software Design Specification document. Thus there is the **DYONICS II EIP System Controller Software Design Specification** (15000696) derived from 15000695; the **DYONICS II EIP Motor Controller Software Design Specification** (15000702) derived from 15000701, and the **DYONICS II Footswitch Software Design Specification** (15000284) derived from 15000283.

Design verification documents, comprised of unit tests, are derived from the corresponding SDS. Thus 15000695 derives the **DYONICS II EIP System Controller Software Design Verification** (15000697); 15000702 derives the **DYONICS II EIP Motor Controller Design Verification** (15000703); and 15000284 derives the **DYONICS II Footswitch Software Design Verification** (15000303).

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There are also several protocols used to communicate between either the components making up a DYONICS II EIP System, or between the system and external devices / accessories. These protocols are all derived from 15000696; they are the **Shaver Pump Interface Protocol** (15000285), the **DYONICS II RS485 Accessory Protocol** (15000286), the **DYONICS II INTELLIO Link Protocol** (15007915), the **DYONICS II EIP Inter Controller Protocol** (15000721), and , and the **Reliant RS485 Protocol Specification** (15008940).

Each protocol also has its own verification document that tests its integration into the DYONICS II System; these are the **Shaver Pump Interface Protocol Verification** (15000355), the DYONICS II EIP **RS485 Accessory Protocol Verification** (15000704), the **DYONICS II INTELLIO Link Interface Protocol Verification** (15008643), the **DYONICS II EIP Inter Controller Protocol Verification** (15000722), and the **Reliant RS485 Protocol Verification** (15008986).

The following diagram indicates the hierarchy of the applicable documents:



# Trace Matrix

Top level user needs are defined in the D2 User Needs (15008058). These are then broken down in the “Design Input Requirements” column in 15008058, with each detailed need given a unique number. The “Software Requirements Trace Matrix” table extracts the software-specific “Design Input Requirements” from that document, and assigns numbers starting from ‘1.1’. The various Software Requirements documents can then be traced to these detailed user needs.

Typically, an SRS has an overview section (#1), and specific numbered requirements in section 2. Requirements might have sub-requirements to any depth. A paragraph with the same number in the SDS document then expands on the corresponding paragraph in the SRS document. The SDV document for that module then has tests for each numbered SDS item. This makes it easy to trace down from an SRS to the SDV level. The following document chains are thus self-tracing and do not need a separate trace matrix:

15000695 ⭢ 15000696 ⭢ 15000697

⮡ 1500700

15000701 ⭢ 15000702 ⭢ 15000703

⮡ 55000388 ⮥

15000283 ⭢ 15000284 ⭢15000303

15000285 ⭢ 15000355

15000286 ⭢ 15000704

15000721 ⭢ 15000722

15000768 ⭢ 15008093

15007915 ⭢ 15008643

15008940 ⭢ 15008986

Each requirement can have a general (unnamed) paragraph (which can be empty), hierarchical numerically numbered sub-requirements, or specific alphabetic requirements. For example, the SC SRS has requirement #2.2 (Controlling application), which has a general paragraph, sub-requirements numbered 2.2.1 through 2.2.6, and no alphabetic requirements. Requirement 2.2.1, in turn, has an empty general paragraph, no sub-requirements, and alphabetic requirements numbered a through f. In the trace matrix, when a reference is made to a requirement, specification or unit test, it includes any general, numeric and alphabetic requirements within it. For example, if a reference were made to 2.2 in the SC SRS, it would encompass 2.2.1 a through 2.2.1 f).

The meanings of the column headings in the trace matrix are as follows:

| **Column Heading** | **Meaning** |
| --- | --- |
| DII Design Input Requirement | The Design Input Requirement column from the “ User Needs and Design Inputs” table in the DYONICS II User Needs |
| Software Functional Requirement Reference | The Software Functional Requirement Reference number assigned to the Design Input Requirement. |
| SRS Reference | The reference to a Requirements document paragraph that corresponds to a Detailed User Need |
| SDS Reference | The reference to a Specifications document paragraph that corresponds to a Requirement |
| SDV Reference | The reference to a Design Verification document paragraph that corresponds to a Specification |

The trace matrix is shown below:

**Software Requirements Trace Matrix**

| **Design Input / Performance Expectation - Software** | **Design Input ID** | **SRS Reference** | **SDS Reference** | **SDV Reference** |
| --- | --- | --- | --- | --- |
| When a detectable error occurs, a single line message is displayed with black text on a yellow background describing the error. Pressing the highlighted line will pop up a full screen detailed description of the error with a button present to return to normal display mode. | DI 9.1.4 | SC 2.1.4  SC 2.1.5  SC 2.2 (general)  SC 2.2.4.5 | SC 2.1.4  SC 2.1.5  SC 2.2 (general)  SC 2.2.4.5 | SC 2.1.4  SC 2.1.5  SC 2.2 (general)  SC 2.2.4.5 (including subsections a-h) |
| When a handpiece is connected, it comes up in a default state or the last custom state and can be used without adjustments. | DI 9.2.1 | SC 2.2.5.2 | SC 2.2.5.2 | 2.2.5.2 a-g |
| Display for MDU will indicate forward, reverse, oscillate or window lock mode of operation for both ports. | DI 9.2.2 | SC 2.2.4 a  SC 2.2.4 b  SC 2.2.4.1 a  SC 2.2.4.1 d | SC 2.2.4 a  SC 2.2.4 b  SC 2.2.4.1 a  SC 2.2.4.1 d | SC 2.2.4 a  SC 2.2.4 b  SC 2.2.4.1 a  SC 2.2.4.1 d |
| Display for Drill will indicate forward, reverse mode of operation for both ports. | DI 9.2.3 | SC 2.2.4 a  SC 2.2.4 b  SC 2.2.4.2 a  SC 2.2.4.2 b | SC 2.2.4 a  SC 2.2.4 b  SC 2.2.4.2 a  SC 2.2.4.2 b | SC 2.2.4 a  SC 2.2.4 b  SC 2.2.4.2 a  SC 2.2.4.2 b |
| Display for Saw will indicate oscillate mode of operation for both ports. | DI 9.2.4 | SC 2.2.4 a  SC 2.2.4 b  SC 2.2.4.2 a  SC 2.2.4.2 b | SC 2.2.4 a  SC 2.2.4 b  SC 2.2.4.2 a  SC 2.2.4.2 b | SC 2.2.4 a  SC 2.2.4 b  SC 2.2.4.2 a  SC 2.2.4.2 b |
| Display shows a Pump Icon when a Smith & Nephew Dyonics 25 Fluid Management System is connected and is powered on. The icon will spin while the Pump is running. | DI 9.2.5 | SC 2.2.1 a  SC 2.2.5.5 | SC 2.2.1 a  SC 2.2.5.5 | SC 2.2.1 a  SC 2.2.5.5 |
| Available for sales worldwide with translation into English, German, Spanish, Italian, French, Swedish, Dutch, Danish, Portuguese and Norwegian. | DI 9.2.6 | SC 2.2.5.7.1 | SC 2.2.5.7.1 | SC 2.2.5.7.1 |
| Color display parameters (set speed, Icons, directional arrows, running/stop) are large enough to read clearly, by a person with 20/20 vision, from 10 feet in bright or dark OR. | DI 9.2.7 | SC 2.2.4.1 a  SC 2.2.4.1 b | SC 2.2.4.1 a  SC 2.2.4.1 b | SC 2.2.4.1 a  SC 2.2.4.1 b  Verification of DYONICS POWER II Control System Readability (Memo DHF 173) |
| Large display of running speeds and modes during use. | DI 9.2.8 | SC 2.2.4.1 a  SC 2.2.4.1 b  SC 2.2.4.2 a  SC 2.2.4.2 c | SC 2.2.4.1 a  SC 2.2.4.1 b  SC 2.2.4.2 a  SC 2.2.4.2 c | SC 2.2.4.1 a  SC 2.2.4.1 b  SC 2.2.4.2 a  SC 2.2.4.2 c |
| Support the Smith & Nephew high speed Burr and elite shaver line. | DI 1.1.1 | SC 2.2.4.1 i | SC 2.2.4.1 i | SC 2.2.4.1 i |
| Save last settings of oscillate, forward and reverse for each blade type. When a blade of a given type is inserted the last settings will appear as default. | DI 4.5.1 | SC 2.2.5.2 | SC 2.2.5.2 | SC 2.2.5.2 a-g |
| Provide an expandable RS485 interface between the handpiece and the controller. (This allows for future handpiece/blade design that supports embedded blade data and blade tagging. Only a software upgrade will be needed for the controller.) | DI 4.5.2 | SC 2.2.4.1 m | SC 2.2.4.1 m  DYONICS II RS485 Accessory Protocol (15000286)  Small Joint Motor Software Design Specification (15000388) | SC 2.2.4.1 m  DYONICS II RS485 Accessory Protocol Verification (15000704)  DYONICS II EIP Motor Controller Design Verification (15000703) |
| Retains last blade oscillate, forward and reverse settings even after controller turned off. | DI 4.5.3 | SC 2.2.5 (general)  SC 2.1.7 d  SC 2.2.5.2 b  SC 2.2.5.2 c  SC 2.2.5.2 d  SC 2.2.5.2 f | SC 2.2.5 (general)  SC 2.1.7 d  SC 2.2.5.2 b  SC 2.2.5.2 c  SC 2.2.5.2 d  SC 2.2.5.2 f | SC 2.2.5 (general)  SC 2.1.7 d  SC 2.2.5.2 b  SC 2.2.5.2 c  SC 2.2.5.2 d  SC 2.2.5.2 f |
| Optimized oscillate mode by default. | DI 1.2.1 | SC 2.2.5.3 (general)  SC 2.2.5.3 a | SC 2.2.5.3 (general)  SC 2.2.5.3 a | SC 2.2.5.3 (general)  SC 2.2.5.3 a |
| Ability to set controller to use a custom oscillate mode instead of default oscillate mode. | DI 1.2.2 | SC 2.2.4.1 j  SC 2.2.5.1  SC 2.2.5.3 (general)  SC 2.2.5.3 b | SC 2.2.4.1 j  SC 2.2.5.1  SC 2.2.5.3 (general)  SC 2.2.5.3 b | SC 2.2.4.1 j  SC 2.2.5.1  SC 2.2.5.3 (general)  SC 2.2.5.3 b |
| Ability to adjust RPM and time for default oscillate mode. | DI 1.2.3 | SC 2.2.4.1 e  SC 2.2.4.3.1  SC 2.2.5.3.1 | SC 2.2.4.1 e  SC 2.2.4.3.1  SC 2.2.5.3.1 | SC 2.2.4.1 e  SC 2.2.4.3.1  SC 2.2.5.3.1 |
| Ability to adjust number of rotations and time for custom oscillate mode. | DI 1.2.4 | SC 2.2.4.1 e  SC 2.2.4.3.2  SC 2.2.5.3.1  SC 2.2.5.3.2 | SC 2.2.4.1 e  SC 2.2.4.3.2  SC 2.2.5.3.1  SC 2.2.5.3.2 | SC 2.2.4.1 e  SC 2.2.4.3.2  SC 2.2.5.3.1  SC 2.2.5.3.2 |
| 10,000 RPM forward and reverse speed of shaver of at least 10,000 RPM. | DI 1.3.2 | SC 2.2.4.1 i | SC 2.2.4.1 i | SC 2.2.4.1 i |
| Ability to operate powered instrument and handpiece simultaneously. | DI 3.1.1 | SC 2.2.4 a  SC 2.2.4 b | SC 2.2.4 a  SC 2.2.4 b | SC 2.2.4 a  SC 2.2.4 b |
| Ability to operate 2 hand-controlled handpiecessimultaneously. | DI 3.1.2 | SC 2.2.4 a  SC 2.2.4 b | SC 2.2.4 a  SC 2.2.4 b | SC 2.2.4 a  SC 2.2.4 b |
| Provide support for window lock by handpieces with hand controls. | DI 1.8.2 | SC 2.2.4.1 a  SC 2.2.4.1 k | SC 2.2.4.1 a  SC 2.2.4.1 k | SC 2.2.4.1 a  SC 2.2.4.1 k |
| Provide support for window lock from front panel. | DI 1.8.3 | SC 2.2.4.1 a  SC 2.2.4.1 n | SC 2.2.4.1 a  SC 2.2.4.1 n | SC 2.2.4.1 a  SC 2.2.4.1 n |
| Provide support for window lock by footswitch controls. | DI 1.8.4 | SC 2.2.4.4 a  SC 2.2.4.4 d  SC 2.2.4.4 f  DYONICS II Footswitch Software Requirements (15000283) | SC 2.2.4.4 a  SC 2.2.4.4 d  SC 2.2.4.4 f  DYONICS II Footswitch Software Design Specification (15000284)  DYONICS II RS485 Accessory Protocol (15000286) | SC 2.2.4.4 a  SC 2.2.4.4 d  SC 2.2.4.4 f  DYONICS II Footswitch Software Design Verification (15000303)  DYONICS II RS485 Accessory Protocol Verification (15000704) |
| Support all existing Dyonics Power handpieces, blades, burrs and footswitches | DI 4.4.1 | SC 2.2.4.1 c  SC 2.2.4.1 f  SC 2.2.4.1 g  SC 2.2.4.1 h  SC 2.2.4.1 i  SC 2.2.4.1 k  SC 2.2.4.1 l  SC 2.2.4.4 a  SC 2.2.4.4 c  SC 2.2.4.4 e | SC 2.2.4.1 c  SC 2.2.4.1 f  SC 2.2.4.1 g  SC 2.2.4.1 h  SC 2.2.4.1 i  SC 2.2.4.1 k  SC 2.2.4.1 l  SC 2.2.4.4 a  SC 2.2.4.4 c  SC 2.2.4.4 e | SC 2.2.4.1 c  SC 2.2.4.1 f  SC 2.2.4.1 g  SC 2.2.4.1 h  SC 2.2.4.1 i  SC 2.2.4.1 k  SC 2.2.4.1 l  SC 2.2.4.4 a  SC 2.2.4.4 c  SC 2.2.4.4 e |
| Support the DYONICS POWERMINI hand control and non-hand control handpieces with 3 families of blades/burrs | DI 4.4.2 | SC 2.2.4.1 c  SC 2.2.4.1 f  SC 2.2.4.1 g  SC 2.2.4.1 h  SC 2.2.4.1 k  SC 2.2.4.1 l  SC 2.2.4.1 m  SC 2.2.4.1 n | SC 2.2.4.1 c  SC 2.2.4.1 f  SC 2.2.4.1 g  SC 2.2.4.1 h  SC 2.2.4.1 k  SC 2.2.4.1 l  SC 2.2.4.1 m  SC 2.2.4.1 n | SC 2.2.4.1 c  SC 2.2.4.1 f  SC 2.2.4.1 g  SC 2.2.4.1 h  SC 2.2.4.1 k  SC 2.2.4.1 l  SC 2.2.4.1 m  SC 2.2.4.1 n |
| Support for all existing Dyonics Power handpieces, blades and burrs. | DI 1.4.1 | SC 2.2.4.1 c  SC 2.2.4.1 f  SC 2.2.4.1 g  SC 2.2.4.1 h  SC 2.2.4.1 i | SC 2.2.4.1 c  SC 2.2.4.1 f  SC 2.2.4.1 g  SC 2.2.4.1 h  SC 2.2.4.1 i | SC 2.2.4.1 c  SC 2.2.4.1 f  SC 2.2.4.1 g  SC 2.2.4.1 h  SC 2.2.4.1 i |
| Allow users to adjust handpiece speed in RPM via touch screen display. | DI 1.4.2 | SC 2.2.4.1 f  SC 2.2.4.1 g | SC 2.2.4.1 f  SC 2.2.4.1 g | SC 2.2.4.1 f  SC 2.2.4.1 g |
| Allow users to control handpiece mode (forward, reverse or oscillate) via a handpiece or footswitch. | DI 1.4.3 | SC 2.2.4.1 i  SC 2.2.4.1 k  SC 2.2.4.1 l  SC 2.2.4.4 a  SC 2.2.5.4 b  SC 2.2.5.4 c  SC 2.2.5.4 e | SC 2.2.4.1 i  SC 2.2.4.1 k  SC 2.2.4.1 l  SC 2.2.4.4 a  SC 2.2.5.4 b  SC 2.2.5.4 c  SC 2.2.5.4 e | SC 2.2.4.1 k  SC 2.2.4.1 l  SC 2.2.4.1 i  SC 2.2.4.4 a  SC 2.2.5.4 b  SC 2.2.5.4 c  SC 2.2.5.4 e |
| Support for existing Dyonics Power powered instrument line. | DI 1.4.4 | SC 2.2.4.2 d  SC 2.2.4.2 e  SC 2.2.4.2 f | SC 2.2.4.2 d  SC 2.2.4.2 e  SC 2.2.4.2 f | SC 2.2.4.2 d  SC 2.2.4.2 e  SC 2.2.4.2 f |
| Allow users to adjust powered instrument speed in percentage of full power via touch screen display and handpiece. | DI 1.4.5 | SC 2.2.4.2 a  SC 2.2.4.2 c  SC 2.2.4.2 d  SC 2.2.4.2 e | SC 2.2.4.2 a  SC 2.2.4.2 c  SC 2.2.4.2 d  SC 2.2.4.2 e | SC 2.2.4.2 a  SC 2.2.4.2 c  SC 2.2.4.2 d  SC 2.2.4.2 e |
| Support powered instrument mode switching (forward or reverse). | DI 1.4.6 | SC 2.2.4.2 a  SC 2.2.4.2 f | SC 2.2.4.2 a  SC 2.2.4.2 f | SC 2.2.4.2 a  SC 2.2.4.2 f |
| Support for all existing Dyonics Power footswitches. | DI 1.4.7 | SC 2.2.4.4 a  SC 2.2.4.4 c | SC 2.2.4.4 a  SC 2.2.4.4 c | SC 2.2.4.4 a  SC 2.2.4.4 c |
| Ability to set hand-controlled handpiece to allow use of either hand controls or footswitch depending on which one is triggered first. Only one source of control can be active at one time. So while pressing on the footswitch pedal the hand controls are ignored and when a mode of operation is selected by the handpiece the footswitch will be ignored until the mode is stopped by the handpiece. The Lavage toggle of the footswitch will always work since that does not conflict with any handpiece control. Supported for all old / new hand-controls and footswitches. | DI 4.1.1 | SC 2.2.5.4 (general)  SC 2.2.5.4 b  SC 2.2.5.4 c  SC 2.2.5.4 e | SC 2.2.5.4 (general)  SC 2.2.5.4 b  SC 2.2.5.4 c  SC 2.2.5.4 e | SC 2.2.5.4 (general)  SC 2.2.5.4 b  SC 2.2.5.4 c  SC 2.2.5.4 e |
| Detectable errors will be displayed on screen. | DI 5.3.4 | SC 2.2.4.5 a  SC 2.2.4.5 b  SC 2.2.4.5 c  SC 2.2.4.5 d  SC 2.2.4.5 e  SC 2.2.4.5 g  SC 2.2.4.5 h | SC 2.2.4.5 a  SC 2.2.4.5 b  SC 2.2.4.5 c  SC 2.2.4.5 d  SC 2.2.4.5 e  SC 2.2.4.5 g  SC 2.2.4.5 h | SC 2.2.4.5 a  SC 2.2.4.5 b  SC 2.2.4.5 c  SC 2.2.4.5 d  SC 2.2.4.5 e  SC 2.2.4.5 g  SC 2.2.4.5 h |
| Detectable errors will reduce functionality in order to maintain safe operation. | DI 5.3.5 | SC 2.2.4.5 f  SC 2.2.4.5 h | SC 2.2.4.5 f  SC 2.2.4.5 h | SC 2.2.4.5 f  SC 2.2.4.5 h |
| Communicates with a Smith & Nephew Dyonics 25 Fluid Management System. | DI 4.2.1 | SC 2.1.3 b  SC 2.2.3 | SC 2.1.3 b  SC 2.2.3  Shaver Pump Interface Protocol (15000285) | SC 2.1.3 b  SC 2.2.3  Shaver Pump Interface Protocol Verification (15000355) |
| DII shall communicate with an INTELLIO Link | DI 4.3.4 | SC 2.1.3 a  SC 2.2.2 | SC 2.1.3 a  SC 2.2.2  15007915 (DYONICS II INTELLIO Link Protocol) | SC 2.1.3 a  SC 2.2.2  15008643 (DYONICS II INTELLIO Link Interface Protocol Verification) |
| Allow users to adjust handpiece speed in RPM via INTELLIO Link. | DI 4.3.5 | SC 2.1.3 a  SC 2.2.2 | SC 2.1.3 a  SC 2.2.2  15007915 (DYONICS II INTELLIO Link Protocol) | SC 2.1.3 a  SC 2.2.2  15008643 (DYONICS II INTELLIO Link Interface Protocol Verification) |
| Allow users to adjust powered instrument speed in percentage of full power via INTELLIO Link. | DI 4.3.6 | SC 2.1.3 a  SC 2.2.2 | SC 2.1.3 a  SC 2.2.2  15007915 (DYONICS II INTELLIO Link Protocol) | SC 2.1.3 a  SC 2.2.2  15008643 (DYONICS II INTELLIO Link Interface Protocol Verification) |
| Provides menu driven software upgrades via a special USB key plugged into the back of the controller. | 1.6.1 | SC 2.1.2 | SC 2.1.2 | SC 2.1.2 a-b |
| Provide a setting to allow variable speed footswitches to operate in an on/off only mode. | DI 1.7.1 | SC 2.2.5.4 (general)  SC 2.2.5.4 a | SC 2.2.5.4 (general)  SC 2.2.5.4 a | SC 2.2.5.4 (general)  SC 2.2.5.4 a |
| Ability to set hand-controlled handpiece to allow use of either hand controls or footswitch depending on which one is triggered first. Only one source of control can be active at one time. So while pressing on the footswitch pedal the hand controls are ignored and when a mode of operation is selected by the handpiece the footswitch will be ignored until the mode is stopped by the handpiece. The Lavage toggle of the footswitch will always work since that does not conflict with any handpiece control. Supported for all old / new hand-controls and footswitches. | DI 9.3.1 | SC 2.2.5.4 (general)  SC 2.2.5.4 b  SC 2.2.5.4 c | SC 2.2.5.4 (general)  SC 2.2.5.4 b  SC 2.2.5.4 c | SC 2.2.5.4 (general)  SC 2.2.5.4 b  SC 2.2.5.4 c |
| Provide a switch that toggles the lavage function on a Dyonics 25 Fluid Management System that is pumping and connected via serial interface to the controller. | DI 1.10.1 | SC 2.2.4.4 b | SC 2.2.4.4 b | SC 2.2.4.4 b |