Technical Data Sheet
Thermo Scientific™ Network Requirements

Specifications	Applicable ULT Series	
	Thermo Scientific TSX Series, Thermo Scientific Forma™ 89000 Series, Thermo Scientific Revco™ RLE Series, Thermo Scientific HERAfreeze™ HLE Series and Thermo Scientific TLE Series	
	GENERAL NETWORK GUIDELINES	**DeviceLink embedded ULT**
PERSONAL OR HOME NETWORKS (WPA2PSK)	PERSONAL OR HOME TYPE NETWORK. EXAMPLE: NEWORKS USUALLY USED IN PERSONAL HOMES WHERE THE USER SELECTS A BROADCASTED NETWORK NAME (SSID) AND ENTER THE NETWORK PASSWORD TO GAIN ACCESS TO THE INTERNET	✓
ETHERNET PORT SERVICE	THE ETHERNET PORT OF THE UNIT SUPPORTS THE DYNAMIC HOST CONFIGURATION PROTOCOL (DHCP) SERVICE	✗
ENTERPRISE NETWORK (WPA2PEAP)	THE UNIT SUPPORTS ENTERPRISE NETWORKS. SUPPORTED ENTERPRISE NETWORK TYPE ARE THE NETWORKS THAT REQUIRE LOG IN WITH SSID, USERNAME AND PASSWORD. CERTIFICATION VALIDATION IS SUPPORTED	✓
HIDDEN PERSONAL OR HOME NETWORKS (WPA, WPA2)	THIS IS SIMILAR TO THE PERSONAL NETWORK, EXCEPT THE NETWORK NAME (SSID) IS NOT BROADCASTED. REQUIRING MANUAL ENTRY OF THE NETWORK NAME	✗
WEB PAGE NETWORK (CAPTIVE NETWORKS)	WI-FI NETWORKS THAT REQUIRE SIGNING IN OR ACCEPTING TERMS OF USE OR ADDITIONAL CREDENTIALS THROUGH A WEB PAGE. EXAMPLE: HOTEL NETWORK WHERE USER HAS TO ENTER ROOM # AND LAST NAME IN A BROWSER WINDOW TO GAIN ACCESS TO THE INTERNET. USING SUCH A NETWORK WILL CAUSE THE UNIT CONNECTION TO FAIL.	✗
LOCAL SERVER OR PROXY	CONNECTING THROUGH A LOCAL OR PROXY SERVER IS NOT SUPPORTED	✗
CELLULAR HOTSPOTS	4G HOTSPOTS ARE NOT FULLY TESTED AND NOT SUPPORTED AT THIS TIME. CONNECTING TO SUCH A NETWORK MAY CAUSE UNEXPECTED BEHAVIOUR AND RISK IN LOSING CONNECTION TO MONITORED DEVICE	NOT SUPPORTED
	PORTS THAT MUST BE OPEN	
PORT 443	PORT 443 IS THE STANDARD PORT FOR INSTRUMENTS TO CONNECT TO THERMO FISHER CONNECT.	✓
PORT 123	PORT 123 SUPPORTS THE NTP PROTOCOL WHICH IS NECESSARY TO SYNCHRONIZE DATE AND TIME.	✓
PORT 80	PORT 80 SUPPORTS OVER THE AIR UPDATES (OTA).	✗
	WIRELESS NETWORK REQUIREMENTS	
WIRELESS NETWORK SUPPORTS	2.4 GHZ ONLY: IEEE 802.11B, IEEE 802.11G, IEEE 802.11N	✓
WI-FI SECURITY	WPA2PSK WPA2PEAP(PEAP) CERTIFICATION VALIDATION IS SUPPORTED	✓
NETWORK PASSWORD COMPATIBILITY	ONLY SUPPORT ASCII PRE-SHARED KEYS (PASSWORDS) WPA PERSONAL 8-63 ASCII CHARACTERS	✓
	SUPPORTS THE 64 CHARACTER HEXADECIMAL PASSWORDS	✓
WIFI RANGE (INDOOR)	WITH WIFI EXTENDER DONGLE (INCLUDED): UP TO 30 METERS	✓
RSSI (WIRELESS NETWORK STRENGTH)	> −60 DBM RECOMMENDED. MIN >-67 DBM (SOME CONNECTION LOSSES EXPECTED in the - 67 DBM and -60 DBM RANGE). NOTE: OPERATION BELOW -67 DBM NOT RECOMMENDED.	>-67 DBM (> -60 DBM RECOMMENDED)
INTERNET DATA ACCESS RATE	MINIMUM OF 1 MBPS.	✓
	PRACTICAL CONSIDERATIONS	
WI-FI ACCESS POINT	IF THE SITE WI-FI SIGNAL STRENGTH IS <-67 DBM OR WHERE THE SIGNAL STRENGTH VARIES BY MORE THAN 4 DBM (± 2 DBM) PER MINUTE, RECOMMEND CONFIGURING A WI-FI ACCESS POINT IN HOT SPOT MODE TO ALLOW FOR STRONGER (AND MORE STABLE) SIGNAL STRENGTH FOR THE UNIT AS SUGGESTED BELOW. 	✓