

1 GENERAL INFORMATION

1.1 Product description

The Universal Laundry Reading Station (URLS) is a contactless smart label (flexible tag set input garments) reader connected to a Personal Computer or programmable logical controller. It is a serial interface reader for smart label (flexible tag which consists of a chip connected to an antenna).

The Universal Laundry Reading Station uses the coupler's RF output to radiate the magnetic field and power up the smart label. The signal is modulated by the coupler (Medio L200) to communicate commands to the smart label. The antenna also receives modulation from the smart label acting as a field disturbing device. This signal is then delivered to the coupler. The Universal Laundry Reading Station can communicate to the Personal Computer via the RS232 serial port. The antennas (see setup antenna for more details) are tuned in the factory at 13.56 MHz.

Several configuration of antennas can be set (a couple of antennas 200x200, a couple of antennas 300x200, a couple of antennas 470x120 or a couple of antennas 470x120 with spiral antenna, see details measure to the TestReport file). The antennas are placed inside the product and cannot be changed by the user.

The Universal Laundry Reading Station is a product developed by the TAGSYS company

For more information, see product's data sheet at section 1.6.

1.2 Related Submittal(s) / Grant(s)

All host equipment used in the test configuration are FCC granted, when relevant.

1.3 Tested System Details

The FCC IDs for all equipment, plus description of all cables used in the tested system are :

Trade Mark – Model Number (Serial number)	FCC ID	Description	Cable description
TAGSYS Universal Laundry Reading Station *	MES200ULRS	Contactless smart label reader	Power cable unshielded , RS232 shielded cable, and unshielded cable (8wires).
Tag 210	none	Contactless Smart label	none
Tag 220	none	Contactless Smart label	none
Tag 240	none	Contactless Smart label	none
Laptop DELL Latitude (sn: 0006692D-12800-03T-2604)	Doc. Of Conf.	Personal computer	All data cables are shielded Power cable unshielded
Power supply DELL AA20031 (sn: 9364U)	none	Power supply block	Power cable unshielded

*Equipment Under Test

1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-1992, CISPR22-1997 and EN55022:1998.

Radiated testing was performed at an antenna to EUT distance of 3 meters. During testing, all equipment's and cables were moved relative to each other in order to identify the worst case set-up.

1.5 Test facility

Tests have been performed on April 17th, 2001.

The test facility used to collect the radiated and conducted data is the SMEE *Actions Mesures* facility, located ZI des Blanchisseries, 38500 VOIRON, France. This test facility has been fully described in a report and accepted by FCC as compliant with the radiated and AC line conducted test site criteria in ANSI C63.4-1992 in a letter dated August 04, 1999 (registration number 94821).

This test facility has also been accredited by COFRAC (French accreditation authority for European union test lab accreditation organization), accreditation number 1-0844 as compliant with test site criteria and competence in EN55022/CISPR22 norms for 89/336/EEC European EMC Directive application. All pertinent data for this test facility remains unchanged.

1.6 Data sheet of the Universal Laundry Reading Station

LAUNDRY READING STATION **PRELIMINARY DATASHEET***

Universal Laundry
Reading Station

[Achieved Automation
Concept]

The “Universal” laundry reading station is a reading system that enables reliable automatic sorting on conveyor.



KEY BENEFITS :

1. Unique 100% read rate proved on the field
2. Adaptable to customer requirement and conveyor characteristics

REQUIREMENT :

1. Tagging specification

This “all in one” reading station includes a set of antennas to identify all garments types (from pants to shirts), and an impressive reader to send garment ID number to the laundry management system.

Garment tags are identified on-the-fly and data is sent either through Programmable Logical Controller (PLC) or PC.

The Universal LRS is essential at each sorting phase.

A flexible and adjustable fixation system allows the station to be secured onto the conveyor chain (on floor or aerial) regardless of the original system layout (space between items, chain speed, ...).

Technical specifications

Name	Universal Laundry Reading Station
Compatible Garment Tag	GemWave™ Ario™ 10-SL
Power supply	110 V to 230 V - 50 / 60Hz
Interface communication	Internal : done External plug: RS 232, RS422, RS485, power supply, I/O port
Conformity	CE / FCC Human exposure
Components	Packaged composite materials shape L1360 x W510 x D110 mm (L54 x W20 x D4 inches) GemWave™ Medio™ L200 reader Set of antennas 3 Led to confirm power up and read success Fixing and tilting systems

GEMWAVE™ MEDIO L200

Long-Range Packaged Coupler with 4 RF Channels and 4 I/O Ports

The GemWave Medio L200 is a state of the art long range coupler operating at 13.56 MHz. It features innovative technology to optimize reading and writing distance. Four power adjustable radio frequency channels are available for connection with a multiplexed antenna set. Several smart labels can therefore be read at a time (anticollision) and at any orientation.

The L200 coupler is compatible with all GemWave smart labels based on C210, C220 and C240 chips.

The L200 coupler features the following characteristics in an industrial casing:

- A powerful radio processing unit (RPU) based on a digital signal processing (DSP) unit which provides multi-chip protocol capability and robust detection algorithms.
- A data processing unit (DPU) for which high level programming tools are readily available, offering easy integration of the coupler to a host environment. Based on typical industrial reading scenarios, generic commands are available for convenient management of antennas used in 3-dimensional configurations.
- An integrated universal power supply for use in all countries.

Designed to be used in industrial environments, the L200 coupler features 4 input/output ports which allow the user to connect a wide choice of sensors (i.e. photocells) to trigger RFID reading or writing cycles.

The L200 coupler can be mounted on a wall, in a cabinet (DIN rail plate) or simply placed on a desk. All connectors and indicators are conveniently accessible from the front panel.

Technical Specifications

Reference	GemWave™ Medio L200
Radio Processing Unit	
Chip compatibility	GemWave C210 / C220 / C240
Reading /Writing distance	Up to 70 cm (27.6 inches) in a single side antenna configuration
	Up to 120 cm (47.2 inches) in a gated antenna configuration
Simultaneous reading (anticollision) capability	Up to twenty Folio™ 20 smart labels
Maximum Tag Throughput	Thirty Folio™ 20 per second
RF Output Power	2 stages of up to 7 Watts in alternation
Antenna Operation	Balanced 0°, 90°, 180° software configuration
Data Processing Unit	
Communication Interface	DB9 with RS232/RS422/RS485 Can be configured up to 38400 bauds Fast parallel bi-directional interface for PC (DB25)
Input/Output ports	4 software configurable ports. Logical 24V/0.2A (NPN open collector type)
Application Environment	GemCore™ development tool Macro commands available
Security	SAM Security Module
Environmental	
Power Requirements	85-265 VAC 50-60 Hz/50 W IEC 3-pole connector
Size (L x W x H)	305 x 260 x 68 mm (12 x 10.28 x 2.7 inches)
Operating Temperature	-10° to 50°C (14°F to 122°F)
Storage Temperature	-20° to 70°C (-4°F to 158°F)
Weight	4.5 kg
Certification	CE, FCC (on going) with GemWave Aero Antenna configurations