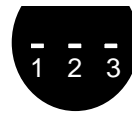
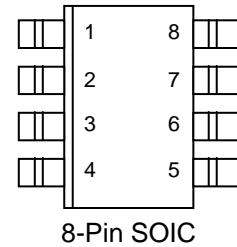
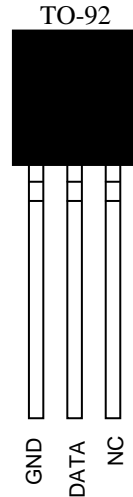


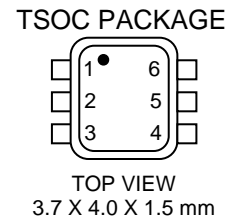
### SPECIAL FEATURES

- 1024 bits or 16Kb Electrically Programmable Read Only Memory (EPROM) communicates with the economy of one signal plus ground
- Unique, factory-lasered and tested 64-bit registration number (8-bit family code, 36-bit serialization, 12-bit UniqueWare identifier 5E7h, 8-bit CRC-tester) assures absolute traceability because no two parts are alike
- Built-in multidrop controller ensures compatibility with other 1-Wire products
- EPROM partitioned into 256-bit pages for randomly accessing packetized data records
- Each memory page can be permanently write-protected to prevent tampering
- Device is an “add only” memory where additional data can be programmed into EPROM without disturbing existing data
- Reduces control, address, data, power and programming signals to a single pin
- Directly connects to a single port pin of a microprocessor and communicates at up to 16.3 kbits per second
- Presence detector acknowledges when reader first applies voltage
- Low cost TO-92 or 8-pin SOIC and 6-pin TSOC surface mount packages
- Reads over a wide voltage range of 2.8V to 6.0V from -40°C to +85°C

### PIN ASSIGNMENT



BOTTOM VIEW



### PIN ASSIGNMENT

	TO-92	TSOC	SOIC
Pin 1	Ground	Ground	NC
Pin 2	Data	Data	NC
Pin 3	NC	NC	Data
Pin 4	----	NC	Ground
Pins 5 to 8	----	NC	NC

### DESCRIPTION

UniqueWare Add-Only Memories are factory programmed versions of the DS2502 (1024 bit) and the DS2505 (16Kb) Add-Only Memories, respectively. They differ from the regular devices in their custom ROM family codes (see Ordering Information) and the UniqueWare Identifier 5E7h in place of the upper 12 bits of the standard serialization field. For technical details on the devices please refer to the DS2502 and DS2505 data sheets.

UniqueWare Add-Only Memories are only available preprogrammed with customer-specific and write-protected data. UniqueWare data fills at least one but no more than the first two pages of a device, depending on the length of the customer-supplied data.

## ORDERING INFORMATION

Memory Size	Family Code	Package	Ordering Part Number
1024 bits (4 pages)	89h	TO-92 package	DS2502U-pppp+
		8-pin 150 mil SOIC pkg.	DS2502SU-pppp+
		6-pin TSOC package	DS2502PU-pppp+

16Kb (64 pages)	8Bh	TO-92 package	DS2505U-pppp+
		6-pin TSOC package	DS2505PU-pppp+

pppp stands for the Project ID assigned to each individual data pattern at the time of the first order.

+ Denotes a lead(Pb)-free/RoHS-compliant package.

For tape and reel append T to the ordering part number.

UniqueWare devices are only available to existing customers. New data patterns are no longer accepted. The minimum order quantity (MOQ) is 34,000 pieces with higher quantities available in multiples of 17,000 pieces in either bulk form or tape and reel. The tape and reel quantities are 2000 pieces (TO-92), 4000 pieces (TSOC) and 2500 pieces (SOIC). The total order quantity (MOQ + additional 17,000 multiple) will cause a partial reel if the tape and reel device quantities are not an even multiple of the total order quantity. The shipment quantity can be plus or minus 10% of the order quantity. Only the quantity shipped will be billed.

## Sample UniqueWare Data Structures

### SAMPLE 1: ETHERNET NODE ADDRESS Figure 1a

(unused)	CRC16		Company ID Value		Extension ID Value		Project ID		Length
	MSB	LSB	MSB	LSB	MSB	LSB	MSB	LSB	
19 bytes FFh	2 bytes		3 bytes constant assigned by IEEE		3 bytes serialization		4 bytes constant		1 byte 0Ah

high address

low address

### PHYSICAL ADDRESS AND DATA MAPPING Figure 1b

ADDRESS	0C	0B	0A	09	08	07	06	05	04	03	02	01	00
DATA	xx	xx	ch	cm	cl	hh	mm	ll	00	00	pp	pp	0A

xx xx = inverted CRC16, value depends on actual data

ch cm cl = high, medium and low byte of the IEEE assigned "Company ID"

hh mm ll = high, medium and low byte of the "Extension ID" or serialization

pp pp = Project ID assigned by Maxim

**SAMPLE 2: EUI-64 FireWire™ NODE ADDRESS Figure 2a**

(unused)	CRC16		Company ID Value		Extension ID Value		Project ID		Length
	MSB	LSB	MSB	LSB	MSB	LSB	MSB	LSB	
17 bytes FFh	2 bytes		3 bytes constant assigned by IEEE		5 bytes serialization		4 bytes constant		1 byte 0Ch

high address

low address

**PHYSICAL ADDRESS AND DATA MAPPING Figure 2b**

ADDRESS	0E	0D	0C	0B	0A	09	08	07	06	05	04	03	02	01	00
DATA	xx	xx	ch	cm	cl	hh	hm	mm	ml	ll	00	00	pp	pp	0C

xx xx = inverted CRC16, value depends on actual data

ch cm cl = high, medium and low byte of the IEEE assigned "Company ID"

hh hm mm ml ll = high, medium and low byte of the "Extension ID" or serialization

pp pp = Project ID assigned by Maxim

The examples shown here use the Default Data Structure. This format is also known as UDP (universal data packet) and is commonly used in 1-Wire APIs. Therefore, if using one of those APIs one can call a high level function to read and verify the inverted CRC16. The UDP is defined in Application Note 114, [1-Wire File Structure](#), and the APIs can be found in the [1-Wire Software Development Kits](#).

**REVISION HISTORY**

<b>REVISION DATE</b>	<b>DESCRIPTION</b>	<b>PAGES CHANGED</b>
12/09	Changed the Ordering Information to lead free.	2
	Removed the DS2506U.	1, 2
	Removed instructions on how to set up a UniqueWare project (no new projects).	2
	Added MOQ, tape and reel size, and shipment quantity information.	2
	Emphasized that the 16-bit CRC is inverted.	2, 3
	Included an explanation of "Default Data Structure."	3
	Changed notation of hexadecimal numbers from H to h.	1, 2, 3