



T1CMR



T2CMR

PHANTOM ORDER FORM

for

Cardiac T₁/T₂-Mapping Phantoms



Part A – Information and Order Process

Please read and keep pages 1-3 for your own record.

1. Background

T1CMR (T1MES) and T2CMR phantoms, are Cardiac T₁ and T₂ Mapping standardisation tools designed by a team of experts including cardiologists, physicists, engineers and national metrology institutes, led by Prof James C Moon (University College London), Dr Peter Gatehouse (Imperial College London) and Dr Gabriella Captur (University College London).

The development of the T1CMR (T1MES) phantom was initiated and tested by Cardiovascular Magnetic Resonance (CMR) centres around the world that were engaging in the **T1 Mapping and ECV Standardisation (T1MES) Academic Programme** (PMID: 27660042). The T1MES programme aimed to provide a roadmap for developing a quality assurance medical device system for T1 mapping and has now been extensively validated and are in use in CMR centres across the world^{1,2}.

The development of the T2CMR phantom was using the collaboration and expertise gained through the T1MES programme to design a T2 mapping phantom that could be used interchangeably at both 1.5 T and 3 T, and that reflects clinically relevant native and post-GBCA T2 in myocardium across the spectrum of health and disease³.

Resonance Health Analysis Services Pty Ltd (Resonance Health) is the sole manufacturer of the T1 and T2 CMR phantoms that are made-to-order products. The T1CMR (T1MES) phantom, available for 1.5T and 3T scanners, and T2CMR phantom, will come at a unit price of **USD 7,500**.

2. Conditions

- a. Country of Origin and Manufacture: Australia, goods are manufactured by Resonance Health Analysis Services Pty Ltd (*the Seller*).
- b. Invoice: Invoice is sent to the billing contact provided in the form in Part B prior to production. A flat fee of **USD 250** for international shipping will be charged, and any import duties are to be covered by the buyer. For shipping within Australia, a flat fee of **AUD 150** will be charged.
- c. Payment: Amount is due within 7 days from the date of invoice.
- d. Availability and Shelf-life: Phantoms will be available by order with an agreed delivery date and with an expiry date of 18 months from production.
- e. Time of shipment: As soon as payment is received by Resonance Health on an agreed delivery date.
- f. Packaging: The phantoms are individually wrapped with bubble wrap, and packed in a new cardboard box filled with polystyrene packing peanuts.
- g. Insurance: Insurance to be covered by the Seller for 100% of the Invoice value covering all shipping risks.
- h. Guarantee: The products are guaranteed against any defect in material or manufacture for a period of six months from when the products are made available to the Buyer by the Seller. Repairs carried out under warranty do not extend the term of the warranty. The warranty ceases automatically if the Buyer, on his own initiative and without Seller's express agreement, uses or modifies the product in a way not provided for nor specified by the Seller.

¹Captur G, Gatehouse P, Keenan KE, Heslinga FG, Bruehl R, Prothmann M, Graves MJ, Eames RJ, Torlasco C, Benedetti G, Donovan J, Ittermann B, Boubertakh R, Bathgate A, Royet C, Pang W, Nezafat R, Salerno M, Kellman P, Moon JC. A medical device-grade T1 and ECV phantom for global T1 mapping quality assurance-the T1 Mapping and ECV Standardization in cardiovascular magnetic resonance (T1MES) program. *J Cardiovasc Magn Reson* **18**, 58 (2016). <https://doi.org/10.1186/s12968-016-0280-z>.

²Captur, G., Bhandari, A., Brühl, R. *et al.* T₁ mapping performance and measurement repeatability: results from the multi-national T₁ mapping standardization phantom program (T1MES). *J Cardiovasc Magn Reson* **22**, 31 (2020). <https://doi.org/10.1186/s12968-020-00613-3>.

³Topriceanu, CC., Fornasiero, M., Seo, H. *et al.* Developing a medical device-grade T2 phantom optimized for myocardial T2 mapping by cardiovascular magnetic resonance. *J Cardiovasc Magn Reson* **25**, 19 (2023). <https://doi.org/10.1186/s12968-023-00926-z>.

**T1CMR and T2CMR: Cardiac T₁-Mapping and Cardiac T₂-Mapping
Phantoms – Order Form**

F-266
Version: 2.0

Part B – Order Form

This part is to be completed by your organisation and sent by email to support@resonancehealth.com.

Our organisation would like to purchase:			
T1CMR Phantom:	<table border="1"> <tr> <td>____ (enter quantity) x 1.5T Phantom(s)</td> <td>____ (enter quantity) x 3T Phantom(s)</td> </tr> </table>	____ (enter quantity) x 1.5T Phantom(s)	____ (enter quantity) x 3T Phantom(s)
____ (enter quantity) x 1.5T Phantom(s)	____ (enter quantity) x 3T Phantom(s)		
T2CMR Phantom:	____ (enter quantity) Phantom(s)		
Organisation Information (Buyer)			
Site Name			
Site contact name <i>(person responsible to authorise the purchase of T1CMR- and/or T2CMR Phantom(s))</i>			
Site contact telephone			
Site contact email address			
Delivery Information			
Site/Department Name			
Delivery address <i>(please be precise e.g., floor number, building number etc.)</i>			
Delivery contact name <i>(if different from contact name above)</i>			
Delivery contact telephone			
Delivery contact email address			
Billing Information (invoice should be addressed to)			
Site name			
Billing contact name			
Billing address			
Billing contact telephone			
Billing contact email address			

I have read and understood the Terms & Conditions listed in Part A – 2, and by filling this form I agree to purchase the T1CMR and/or T2CMR Phantom(s) listed above.

Site Contact Name: _____ **Signature:** _____