



## CUSTOMER INFO PACK



## Introduction to QC

QuickCircuit (QC) has seen significant growth since 1999 and operates three manufacturing sites, two in Albany, Auckland and one in Upper Hutt, Wellington.

Employing over 100 staff over three sites and five staff in Shenzhen, China for procurement services, we have the people to deliver end to end manufacturing solutions.

Our distribution facility allows our customers to keep stock on hand for significantly reduced lead times to their end customer directly from QC.

Being flexible in our manufacturing lines and final assembly means we can take on small and large jobs and different configurations of products to meet the demands of the customer.

Maintaining our agility is part of our success with the in-house software team supporting the ever-changing requirements relating to quality, and traceability.

A secure web-portal gives customers access to a transparent and open view of their data and progression of orders.

We continue to build capacity and knowledge through great people, investment in new technologies and advancements in our quality system.

Operating since 1999

100% NZ owned and operated

110 staff over three sites - 34% of staff being in company for more than three years

Four manufacturing lines powered by Samsung pick and place machines

ISO9001:2008 and ISO14001:2004 certified

In-house IPC-A-610 qualified trainer

Second Auckland facility operates full turnkey assembly and distribution teams

Team of account managers and production engineers

Integrated IT systems providing secure web-portal monitoring for our customers

In-house written ERP and Manufacturing Control System



## Customer Support Team

Communication and access to support personal is paramount. We have dedicated account managers who can help you through your entire journey with us. They can provide information on your product at any time and are always keen for a factory tour. Communicating good information enables the process from initial quoting to delivery of product to be quicker and more streamlined.

Our support team can provide further assistance for specific purchasing requirements, quality system details, and finance.

### Key Contacts

#### Management

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## Capabilities

QC can meet the demands of our small and large customers through our flexibility to make changes easily.

With over hundreds of active customers our production line is constantly adapting to different products and customer needs, with new test jigs and programming solutions.

Our final assembly teams build product ready for delivery to end customers. We can tailor products for each end customer whether it is configurable programming, switches, cabling requirements or external casing.

The Surface Mount Technology lines are running Automated Optical Inspection to ensure high quality boards every time. Our internal systems are always looking for improvements to streamline processes.

Over the past five years, QC has invested heavily in latest generation machines allowing increased throughput as well as micro placement down to 01005 chips, with 0201 chips pick and placed regularly.

Other equipment beyond SMT, AOI and selective soldering includes, nitrogen generation and Robotic dispensing and spraying.

Our in-house software team is constantly tweaking and evolving our tailor made ERP systems including; production floor traceability, unit tracking, serialisation, part location control to aviation standards.

- Direct to end customer requirements
- Single or multiple unit configurations to customer specs
- Automated Optical Inspection
- Traceability to aviation industry requirements
- Programming and test services
- Hand assembly, wave solder, selective soldering, BGA rework station, environmental chamber
- PCBA or box-build assembly
- Code of Conformance integrated in system
- UL certified product manufacturing
- RoHS and REACH compliant
- Kanban
- Statistical Process Control

## QC working with you

QuickCircuit is experienced in a wide range of electronic manufacturing so we have the solution for you.

Whether we are working further with your engineers or come up with in-house solutions to issues; we can deliver.

Once you have confirmed a quote and issued a purchase order, we order parts and any other cabling and casings.

At any point your direct account manager can assist you with any queries or changes to the product.

Please see the following pages for information about:

[Bill of Materials](#)

[Work Instructions](#)

[Part change – ECN or Concession](#)

[Design for Manufacture](#)

[PCB](#)

[Testing](#)

[Procurement](#)

[UL Auditing](#)

[Code of Conformance](#)

[Conflict Minerals Policy – see our website under Policies or Procurement.](#)

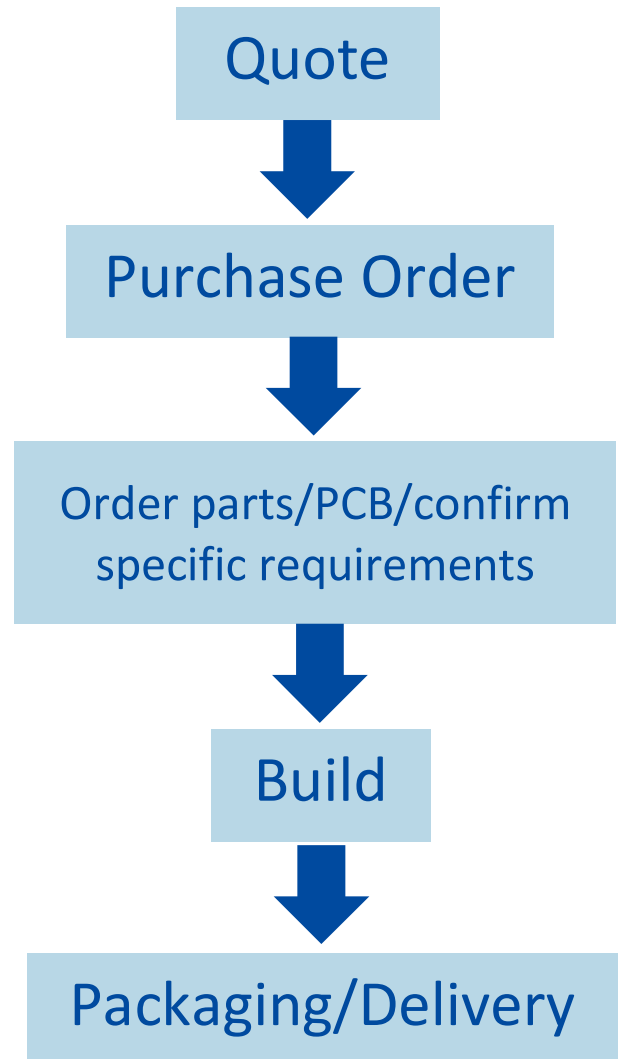
For anything that requires a full turnkey solution please talk to our account managers & distribution manager.

[Programming](#)

[Final assembly – cabling, decals, casings and more](#)

[Configurable units](#)

[Distribution](#)



## Procurement

With up to 80% of your manufacturing cost accumulated through materials, our aim is to get you the best price, best product and the shortest lead times.

Our procurement teams in Albany and Shenzhen, China are dedicated to source products from all around the world. They have many years' experience in working with suppliers globally and are also very happy to work with your own suppliers if there is a preference.

We offer multiple track & trace options if your end-users require tracking down to part level.

Our teams can source not only electrical components but also PCB's, stencils, packaging and mechanical assembly components if you require a full turnkey solution.

We also can source and supply just part of your build requirements if you have stock on hand. And if your product run is relatively small you can take advantage of our components that are bought in larger volumes at more competitive prices.

Our customer web portal allows you direct access to purchasing information for your product including product stock status, delivery schedule, liability and stock on hand reports.

## UL Certification

Our facilities are equipped to handle processes that deal with UL certified product. If you have UL certified products or are working towards UL certification please talk to us about our processes in part sourcing and buying in multiple volumes.

The New Zealand UL Auditor has worked with the QC systems so in partnership with QC is able to effectively keep your product UL certified.

## Certificate of Conformance

Our team and systems are equipped to offer a certificate of conformance for your products. We are able to track all products down to part level if this is part of your requirements.

This is particularly important with high-spec products and where safety is a non-negotiable.



# New BOM (Bill of Materials)

Supplying us a well-documented BOM will help us deliver a fast competitive quote.

At a bare minimum we require something similar to what is shown in figure A. This is a start but you can expect a heavy amount of communication to be required as we ensure we source the correct parts for the product you are building.

Type	Value	Package	Designator / Ref	QTY
RES	10K	0805	R12, R13, R22	3
CAPELE	47U / 25V	CASE B	C19, C22	2
DIODE	1N4004	AXIAL	D1, D2, D3, D4	4

Figure A

Figure B shows our preferred style of BOM .

P/N	Description	Ref	Qty	Mfg	Mfg P/N	Package	Comments
ERU101	CAP ELECTROLYTIC CASE F 220U 20% 35V	C1	1	PANASONIC	EEVFK1V221P	CASE F	
ERU101	CAP ELECTROLYTIC CASE F 220U 20% 35V	C2	1	PANASONIC	EEVFK1V221P	CASE F	
ERU102	CAP NPO 0805 1N5 10% 50V	C3	1	AVX	08055A152JAT2A	0805	OTHER EQUIVALENT BRANDS OK
ERU103	CAP X7R 0603 1N 10% 50V	C4	1	AVX	06035C102KAT2A	0603	OTHER EQUIVALENT BRANDS OK
ERU104	DIODE 1PS76SB10 SCHOTTKY BARRIER SOD323	D1	1	NXP	1PS76SB10,115	SOD323	
ERU105	IC 74HC02D QUAD NOR GATE SO14	IC1	1	TEXAS INST	SN74HC02D	SO14	ALTERNATIVE FAIRCHILD MM74HC02M
ERU106	IC PIC12F675-I/SN MICRO SO8	IC2	1	MICROCHIP	PIC12F675-I/SN	SO8	
ERU107	LED 0805 GREEN DIFFUSED	D2	1	AVAGO	HSMG-C170	0805	
ERU107	LED 0805 GREEN DIFFUSED	D3	1	AVAGO	HSMG-C170	0805	
ERU108	RES 0805 4K22 1%	R1	1	YAGEO	RC0805FR-074K22L	0805	OTHER EQUIVALENT BRANDS OK
ERU108	RES 0805 4K22 1%	R2	1	YAGEO	RC0805FR-074K22L	0805	OTHER EQUIVALENT BRANDS OK
ERU109	RES 0805 200R 1%	R3	1	YAGEO	RC0805FR-07200RL	0805	OTHER EQUIVALENT BRANDS OK

Figure B

The key differences between figure A and figure B are:

- Your part number (**P/N**) – this will be imported into our system and helps when matching future BOMs
- A highly detailed description the part including any specific voltage and tolerance values.
- Single reference / designator per line this speeds up the process of importing the BOM into our systems.
- The manufacturer of the part and the manufacturer's part number. This reduces the confusion over what part you are specifically asking for. If manufactures part numbers aren't easily attainable, it also helps if you have a digi-key, element 14 etc. part number which we can use as a reference.
- The package type; again this helps when cross checking the part we are ordering with the size of the component you believe it to be.
- Finally the additional comments area where you can add any extra information which you think may be helpful. Information such as whether alternatives are allowable can help to reduce your minimum pack quantities and lead times.

The time invested in a good BOM is well worth it. Potentially you can reduce cost, liability and lead time. It also allows QC to get a quote back to you more promptly.

## Overlays, Photos, Samples

A picture enables us to truly see the complexities and processes which are required in producing your product. Below (figure C) you can see an example of good board diagram which clearly shows us the reference designators and orientation of any part which has a specific polarity.

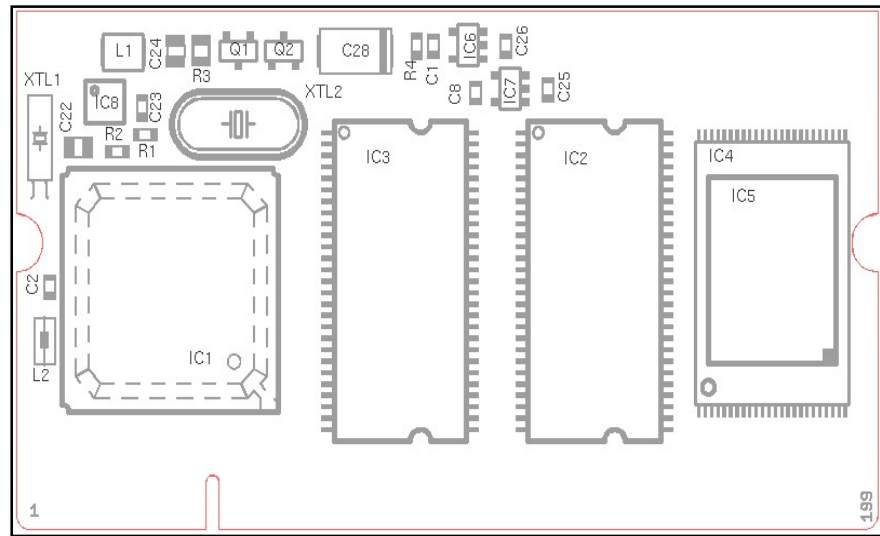


Figure C

Photos and a sample of the product can also be very helpful as they provide another level of product detail.





## Work Instructions

Standard electronic manufacturing processes such as surface mount technology or wave solder do not normally require any specific instructions. However, final assembly and test stages which are unique to your product will require some level of documentation regarding how they are to be assembled and what testing is required.

Good work instructions detail the 3M's – Man, Material and Method. They are step by step, with pictures and photos detailing any special instructions which are required. Instructions such as marking, labels, glue and packaging are all vital to ensure it is manufactured to your specification. They should also include any special tools or jigs which are going to be required.

Work instructions are vital to ensure that we meet your specification. If you do not have any work instructions, QC's team of engineers will work with you to help outline the required steps.

### Change Requests (ECNs)

Generally all products change over time whether this is a major change or something subtle. For every alteration we need to document the specific changes in a controlled manner. QC does this via the ECN process.

If in doubt send an ECN. Emails and phone calls with specified changes can be made but this will simply result in an ECN form being sent to you to confirm the process, so using the ECN form directly is the fastest, safest way to implement your product changes. Email [ecn@quickcircuit.co.nz](mailto:ecn@quickcircuit.co.nz)

## Design for Manufacture

The sooner you engage manufacturing input to your design the better the final product will be. Often simple changes to the BOM and layout can result in substantial saving. A Design for Manufacture review is a free on-going service at QC. We highly recommend that before you commit to any design you send your gerber files and BOM through to us so we can point out any potential issues which may arise.

## Printed Circuit Boards

The PCB is a critical custom component of every design. When ordering this item there is a check list we work through as there is a huge range of potential PCB options. Some PCBs are simple single-side boards with large tracks and clearances; others are very high density multi-layer boards with carefully controlled layer stack ups with controlled impedances.

When supplying PCB data to QC, please use the “*PCB Specification.pdf*” document. This will help when placing orders to our PCB fabricators.

*PCB Specification.pdf* can be found inside this customer information pack.

## Testing

Depending on the level of sophistication required, QC can directly assist or work with specialised third parties in developing test solutions. In most cases it is you, the customer, who has the detailed knowledge and can develop testing for the specifics of your own product.

Typical test solutions in use at QC are, AOI (Automatic Optical Inspection), Electrical tests via Custom bed-of-nails jigs, Specific Functional Tests and various combinations of the above. We can also offer IT support to record test results by each unit tested if required.

If you are not experienced in developing test solutions we strongly suggest talking to us about your approach before confirming the way forward.

## Label Requirements

### Information required

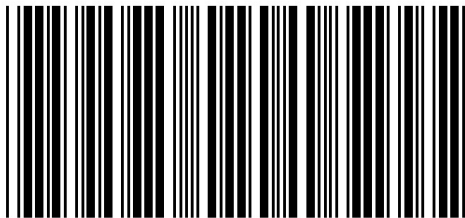
Paper or polypropylene (UL Certification)  
Logo or other image  
Size of font/Type of font  
Address  
Product number  
Other specifications or data

Type of barcode



12345678

2D Datamatrix barcode



12345678

### QC Preferences

Including our 5 digit product code on each of the labels is preferred. The benefits are for both us and you our customer is the ease of tracking each board that leaves the factory.  
Please talk to our account managers if you seek more information.

## Certifications

QuickCircuit invests heavily in our Quality Management System and runs at the core of everything we do.

Our QMS is currently certified to ISO9001:2015 and ISO14001:2015 with future planning for other certifications well underway to meet the needs of end customers.

We also have an in-house IPC-A-610 Qualified Trainer and are progressively training our staff in IPC standards.



Quality  
ISO 9001



Environment  
ISO 14001



## Distribution & Warehousing

QC's distribution and warehousing site is located 200m from our existing factory and houses our Stores, Final Assembly, Distribution and Warehousing.

If you are after services for cabling, casing, decals and membranes after PCBA, we offer multiple options depending on your requirements.

We can supply unique builds as to your end customer's specifications on small or large runs.

Final packaging and shipping is also available to send to local or international customers.

The benefits are:

- Warehouse space that you are not paying for
- Shipping and packing so less staff
- You can focus on design and sales



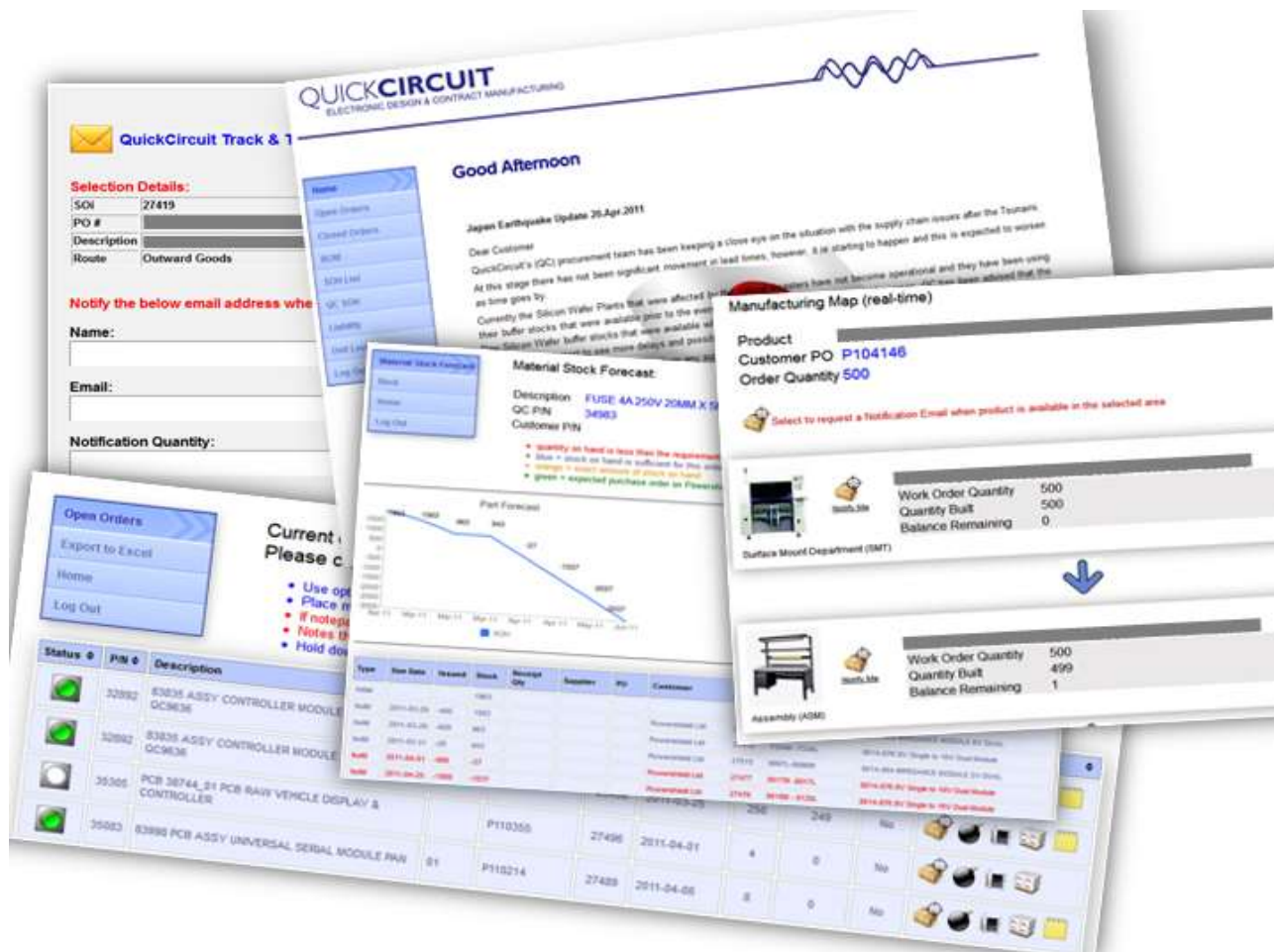
## Web Portal

Our customers are provided with a secure login to our Web-portal which enables you to check the progression of your order through production. Our system offers a lot of transparency that enables you, the customer, to see as much as possible about your products' journey through QC.

QC provides a free web portal tool which enables the customer to easily and quickly view all details regarding their products and production with us.

Some of these features include:

- Real time reporting • ECN & concession information • Open and Closed order visibility • Order stock status and part forecast • Bill of materials for each product • Customer stock on hand details • Liability reporting • Track and trace production through factory • Traceability to aviation standards





## Engineering Support

The engineering team works constantly with our account managers so that everyone has all the information needed to make your production process go smoothly.

The QC production engineering team can assist in PCB panel & stencil designs and also carry out incoming inspection of components against set AQL parameters. They can also assist in providing detailed design for manufacturing reports to help increase the production efficiency and quality of the end product.

Their services include, but are not limited to:

- PCB Panelisation
- Design for Manufacture Reporting (DFM)
- Engineering Change Notices
- Work Instruction Documentation
- Non Conformance reporting
- Manufacturing files error checking
- Web-Portal Support

## Policies

All QuickCircuit policies and certifications can be found on our website [www.quickcircuit.co.nz](http://www.quickcircuit.co.nz)