

# Benetel Femtocell Mass-production Test Solution Feature Set

Benetel has developed a Femtocell Mass-production Test Solution utilising R&S SMBV100A vector signal generator and R&S FSV signal and spectrum analyser. The solution is based on our Common Test Platform which means it can be upgraded to past and future wireless test standards.

## Benetel's customers have two options:

- a) Femtocell Test Software from Benetel which has been written to control R&S test equipment and PicoChip's UMTS reference board. The software is written in National Instruments' LabVIEW and TestStand and is provided to the client as executable code. The software steps through a sequence of femtocell RF tests and records the results in HTML, Excel or CSV. When combined with a signal generator, a signal analyzer and a simple RF enclosure the system is sufficient for NPI and pilot production requirements.
- b) A full turnkey Femtocell Mass-production Test System, BTS-114RS. The system is an R&S version of our Femtocell Test Platform and features UUT through-put optimisation, self calibration functionality and Over The Air (OTA) testing. Currently up to 4 femtocells can be tested in parallel with one ATE test rack achieving world class through-put and capital utilisation.

	Features	Test Software (NPI/ Pilot Production)	BTS-114 (Volume Production)	Comment
<b>User Management</b>	GUI	✓	✓	
	Test limit management	✓	✓	
	CDMA2000 test sequencer	-	✓	
	UMTS test sequencer	✓	✓	
	HSDPA test sequencer	✓	✓	
<b>Drivers</b>	R&S SMBV100A device driver	✓	✓	
	R&S FSV device driver	✓	✓	
	PicoChip IC Device driver	✓	-	
	UUT Test Software driver	-	✓*	Customer specific
<b>Functional Tests</b>	UUT serial number	✓	✓	
	UUT Test Software version No.	✓*	✓	*With customer info.
	UUT ID	✓*	✓	*With customer info.
	Results date & time stamp	✓	✓	
	Start-up temperature	✓*	✓	*With customer info.
	Communication link verification	✓*	✓	*With customer info.
	I/O voltage levels	✓*	✓	*With customer info.
	Current consumption	✓*	✓	*With customer info.

Features		Femtocell Test Software WCDMA	BTS-110	Comment
<b>Diagnostic Tests</b>	FPGA & DSP download	-	✓	
	UUT FPGA version	-	✓	
	Test IP, Servers & Gateway	-	✓	
	Record MAC addresses	-	✓	
<b>Transmitter Tests</b>	TX, PA calibration	✓	✓	
	TX, PA Output power	✓	✓	
	TX, ACLR	✓	✓	
	TX, Rho	-	✓	
	TX, EVM	✓	✓	
	TX, PCDE	✓	✓	
	TX, Frequency Error	✓	✓	
	TX, Occupied Bandwidth	✓	-	
	TX, Spectrum Emission Mask	✓	-	
	TX, LO leakage	✓	✓	
	TX, OTA test	-	✓	
	<b>Receiver Tests</b>	RX, Calibration	-	✓
RX, Noise figure		-	✓	
RX, RSSI		✓	✓	
RX, Sensitivity		✓	✓	
<b>Other RF</b>	TCXO calibration	✓	✓	
	DC offset calibration	✓	✓	
	Receiver Listen modes	✓	✓	
	GPS tests*	-	✓	Customer specific
<b>Test Fixtures</b>	Single fixture control	✓*	✓	*With customer info.
	Parallel fixture control	-	✓	
	Self calibration functionality	-	✓	
	OTA testing capability	-	✓	
<b>Other</b>	Application code download	-	✓	
	Remote login	✓	✓	When requested
<b>System Integration</b>	Test sequence & through-put optimisation	-	✓	For parallel test fixtures utilising customer boards
	QA testing with customer boards	-	✓	
	Customer training	-	✓	In Dublin
	UUT driver development*	✓	✓	Optional cost If required
	Database*	✓	✓	Optional cost

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