

Low cost field upgradeable GPRS test option for the 2935



- **Higher throughput using GPRS Test Modes**
- **GPRS Attach**
- **CS1 and CS4 Channel Coding Schemes**
- **GPRS BER and BLER Test Functions**
- **Easy to use Phonetest user interface**
- **Pre-defined and user programmable GPRS test scripts**
- **Compatible with the 2935 workshop management options**
- **Simple upgrade via the Internet**

Update Today For Tomorrow's Technology

With GPRS handset sales escalating rapidly, engineers and service technicians need the expanded capabilities provided by the 2935 with the GPRS test option 01. Building upon the established performance and speed advantages of the 2935 GSM Test Head this option provides additional signaling and test capability to quickly characterize Tx and Rx performance of GPRS mobiles operating in the GSM 850, GSM 900, GSM 1800 and GSM 1900 bands.

GPRS Call Processing and BLER/BER Test Modes

The 2935 GPRS test option 01 provides the necessary signaling and measurement features to test GPRS terminals including BCCH network parameter configuration, GPRS attach sequence and handoff control of PDTCH, TA (timing advance) and PL (power level).

The 2935 GPRS option 01 provides fast Bit Error

Rate (BER) testing using GPRS Test Mode B (Loopback) with user defined failure percentage and sample size, as well as user configurable Block Error Rate (BLER) tests.

The 2935 GPRS option 01 can measure receiver sensitivity by testing either BER or BLER using two different channel coding schemes - CS1 (which has forward error correction for robust communication) or CS4 (with no forward error correction for maximum data rate).

	Limit	Samples
BLER	10.00 %	400
BER	2.44 %	20000

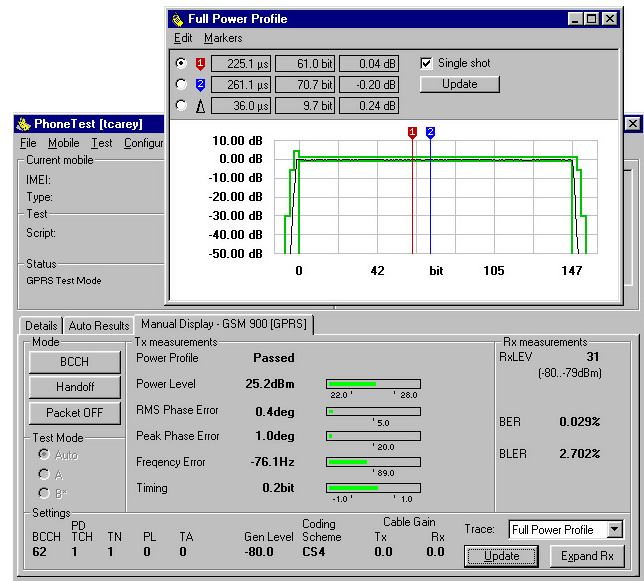
Full Configuration Capabilities with CS1 and CS4 Channel Coding Schemes

Test Features Speed GSM/GPRS Tests

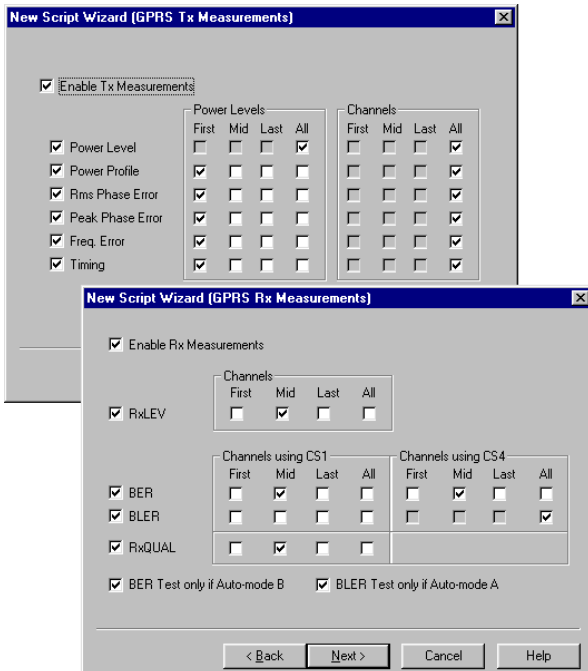
By using the GPRS mode, terminal testing can be simplified and made faster. To test a terminal in GPRS mode merely requires the user to connect it to the test set, select the appropriate test script and run the sequence. Unlike circuit switched mode, testing using a GPRS only test script requires no manual key pressing on the mobile phone itself saving valuable time. On completion of registration and GPRS attach, test mode activation is initiated allowing measurements to be made without any delay.

User Programmable Test Scripting

Specific GPRS BER and BLER test parameters can be incorporated along with other test parameters into fully user programmable test scripts using the scripting wizard function of the 2935 PhoneTest software. GPRS test cases can be programmed independently of voice call test cases thus maximizing the degree of flexibility available and enabling GPRS only test scripts to be utilized to save time and effort. Where applicable GPRS test cases are performed following completion of normal voice call tests. This minimizes the change to any previously written script. A variety of standard GPRS test scripts prepared by IFR are supplied. These range from simple GPRS only single band RF tests to multi-band GSM and GPRS fully comprehensive sequences.



GPRS Manual Test mode operation



GPRS Script Wizard

Manual Mode

During manual mode testing, graphical displays including Tx power and phase error information can be selected and overlaid with the GPRS Tx and Rx measurements. At all times the user retains the ability to modify TX power level, timeslot number and PDTCH ARFCN from the same display screen.

Specification

2935 GPRS Option 01 Specification

For details of the full measurement and feature capability of the 2935 please also refer to the 2935 data sheet.

Supported Features

Controllable Parameters - GPRS

BCCH ARFCN; PDTCH ARFCN; PDTCH TN & PL;
RAC (Routing Area Code); RA Color (Routing Area Color); MIN LEVEL FOR ACCESS; MS TIMING ADVANCE; RF GENERATOR LEVEL;
PROTOCOL TIMEOUT PERIODS;
BER/BLER MEASUREMENT SAMPLES;
POWER, FREQUENCY ERROR AND PHASE ERROR MEASUREMENT SAMPLES
Coding scheme CS1 and CS4

PROTOCOL FUNCTIONS

GPRS Attach
GPRS Test mode activation and loop-back mode selection

TX MEASUREMENTS

POWER LEVEL
POWER PROFILE
RMS PHASE ERROR
PEAK PHASE ERROR
FREQUENCY ERROR
TIMING ADVANCE

RX MEASUREMENTS

BLER and Test Mode B BER
RX QUAL (CS1 only)
RX LEV (CS1 and CS4)

BLER/BER METER

Types

BER - Test Mode B
Range 0 to 100%
Resolution 0.001%
Adjustable sample size to 10,000,000
Duration and % settled indication

BLER
Range 0 to 100%
Resolution 0.001%
Adjustable sample size to 30,000
Duration and % settled indication

Versions and Accessories

When ordering please quote the full ordering number information.

New instrument sales

Order as: 2935 with GPRS option 01

Upgrades to existing instruments:-

Existing units can be upgraded in the field or at an authorized IFR service facility dependent upon the instrument serial number.

Instruments with serial number from 293503/000^{note 2} can be upgraded in the field.

Instruments with serial numbers below 293503/000^{note 1 & 2} must be returned to IFR service for upgrade.

Field Upgrade: **RTROPT01A/2935**

Return to Service Upgrade: **RTROPT01B/2935**
plus service option **MODFTG01/2935**

Notes

Note 1 : Customers who have already taken advantage of having the RAM upgrade can have these units updated in the field by ordering RTROP-T01A/2935 instead. At the time of ordering you will need to provide the instrument serial number and request credit against the RAM upgrade.

Note 2 : GPRS option 01 requires 2935 firmware version 2.0 (or greater) and PhoneTest application version 2.0 (or greater), both of which are supplied with the upgrade options and are available for download from the IFR website www.ifrsys.com.

IFR - "Working together to create solutions for the world of communications."

IFR is a world leader in developing leading edge test and measurement equipment. The priority at IFR is to understand your communications test needs and respond to them. IFR has the flexibility and expertise to create just the right test solution for you. We understand that just as you are the expert in designing wireless products, we are expert in wireless test.

Combining the quality of our test products with their reliability, excellent price/performance ratio and minimal requirements for maintenance, every IFR test system represents an outstanding lifetime value.

IFR - "Working together with our customers to be flexible and innovative in providing effective test solutions for the rapid design, manufacture and maintenance of communications systems."

The added value IFR includes with each and every test set we sell will make you more productive. We offer a two-year standard warranty on all products and we will continue to support your product for five years beyond its final production. Our outstanding Customer Service Department offers calibration, out-of warranty repairs and consulting. Our Sales and Training Departments offer clear and concise product information with realistic performance specifications, technology training and application training. Our experienced engineers will help you develop application software and through continuous improvement programs, upgrades are always available.

IFR will continue to build upon our technology resources with an aggressive commitment that will enable you to excel in some of the world's most dynamic, high growth markets.

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