

UXM TD-SCDMA/HSPA Application Feature Comparison

June 2021

For more information on the options, part numbers, configuring your UXM instrument, upgrades, and licenses, view the Keysight UXM Wireless Test Set Configuration Guide, literature number 5991-4078EN.

TD-SCDMA/HSPA fundamentals	E7529A test application	First available in revision
Fast switch with TD-SCDMA and W-CDMA ¹	Yes	1.6.1.0
Supported cells = 1	Yes	1.6.1.0
TDD test mode (non-signaling mode)	Yes	1.6.1.0
RB test mode	Yes	1.6.1.0
PS data connections	E7529A-FFP-0P1	1.6.1.0
CW mode	Yes	1.6.1.0
3GPP frequency bands 34, 39, 40, 41	Yes	1.6.1.0
Cell power	Yes	1.6.1.0
UE target power	Yes	1.6.1.0
Closed-loop power control	Yes	1.6.1.0
Channelization codes and relative levels	Yes	1.6.1.0
Dual device parallel RF test in one UXM ²	Yes	1.6.1.0
Dual IP device test in one UXM (e.g. dual-SIM) ²	E7515A-D01, E7529A-FFP-0P1	1.6.1.0
Internal applications server	E7515A-S01	1.6.1.0
Channel emulation (fading)	E7515A-C01	1.6.1.0
Wireshark protocol logging and analysis	E7515A-L01	1.6.1.0

1. Requires E7521A GSM/GPRS/EGPRS and E7523A W-CDMA/HSPA+ test application licenses.

2. Requires one UXM with two TRX sets.

TD-SCDMA/HSPA data throughput	E7529A test application	First available in revision
PS data connections	E7529A-FFP-0P1	1.6.1.0
Simultaneous services (CS voice + PS data)	E7521A-FFP-0P1	1.6.1.0
One primary PDP context	E7529A-FFP-0P1	1.6.1.0
IPv4	Yes	1.6.1.0
DL QPSK, 16QAM	Yes	1.6.1.0
UL QPSK, 16QAM	Yes	1.6.1.0
DL up to 2.8 Mbps test modes	Yes	1.6.1.0
DL up to 2.8 Mbps end-to-end data	E7529A-FFP-0P1	1.6.1.0
UL up to 2.2 Mbps test modes	Yes	1.6.1.0
UL up to 2.2 Mbps end-to-end data	E7529A-FFP-0P1	1.6.1.0
HS-DSCH UE categories 1-15, E-DCH UE categories 1-6	Yes	1.6.1.0
Data throughput monitor - IP	E7529A-FFP-0P1	1.6.1.0
Data throughput monitor - OTA	Yes	1.6.1.0
HSPA throughput results (not graphical)	Yes	1.6.1.0

TD-SCDMA/HSPA detailed network behavior	E7529A test application	First available in revision
CS voice page/release	Yes	1.6.1.0
Paging parameters	Yes	1.6.1.0
SMS (MO, MT)	Yes	1.6.1.0
Reference measurement channels (RMC)	Yes	1.6.1.0
Fixed reference channels (FRC)	Yes	1.6.1.0
User-defined DL configuration	E7529A-FFP-0P1	1.6.1.0
Variable RMC	Yes	1.6.1.0
DL configuration based on HS-SCCH detection	Yes	1.6.1.0
DL configuration based on UE reports (CQI)	Yes	1.6.1.0
Cell ID parameters (MCC, MNC, LAC, RAC, cell ID)	E7529A-FFP-0P1	1.6.1.0
Cell reselection parameters	Yes	1.6.1.0
UE timers and constants	Yes	1.6.1.0
Uplink parameters	Yes	1.6.1.0
BCCH call setup parameters	Yes	1.6.1.0
USIM preset and user-defined configurations	Yes	1.6.1.0
UE-reported information	Yes	1.6.1.0
Call status results	Yes	1.6.1.0
Automatic RRC state transitions	E7529A-FFP-0P1	1.6.1.0

TD-SCDMA/HSPA voice and connectivity	E7529A test application	First available in revision
CS voice connection	Yes	1.6.1.0
CS voice echo	Yes	1.6.1.0
CS voice loopback	Yes	1.6.1.0
Authentication and integrity	Yes	1.6.1.0

TD-SCDMA/HSPA handovers and InterRAT mobility	E7529A test application	First available in revision
Physical channel reconfiguration (PCR)	Yes	1.6.1.0
Cell reselection with LTE, W-CDMA, GSM1, ²	E7529A-FFP-0H1, E7529A-FFP-0P1	1.6.1.0
Cell reselection with LTE, with PDP active 1, ³	E7529A-FFP-0H1	1.6.1.0
Release with redirect to LTE ^{1,3}	E7529A-FFP-0H1, E7529A-FFP-0P1	1.6.1.0
PS-HO LTE > TD-SCDMA ^{1,3}	E7529A-FFP-0H1	1.6.1.0
CSFB-from-LTE1, ³	Yes	1.6.1.0
UE-reported RSCP	Yes	1.6.1.0
SIB11 parameters ⁴	Yes	1.6.1.0
UTRA intra-frequency neighbor cells ⁴	Yes	1.6.1.0
UTRA inter-frequency neighbor cells ⁴	Yes	1.6.1.0
GERAN neighbor cells 4	Yes	1.6.1.0

1. Requires one UXM with two TRX sets, or two UXMs, Main with two TRX sets and Auxiliary with at least one TRX set, plus interconnectivity kit E7515A-AC1. For full details see Keysight UXM Wireless Test Set Configuration Guide, literature number 5991-4078EN.

2. Requires E7530A LTE/LTE-A, E7523A W-CDMA/HSPA+, and/or E7521A GSM/GPRS/EGPRS test application(s).

3. Requires E7530A LTE/LTE-A test application with E7530A-FFP-0H1 (and E7530A-FFP-0P1 for LTE IP data).

4. SCPI access only.

TD-SCDMA/HSPA Rx and Tx Measurements	E7529A test application	First available in revision
ACP	Yes	1.6.1.0
Block error ratio (BLER)	Yes	1.6.1.0
Code domain	Yes	1.6.1.0
Data throughput monitor (TPut)	Yes	1.6.1.0
EVM	Yes	1.6.1.0
HSDPA block error ratio (HBLER)	Yes	1.6.1.0
IQ waveform	Yes	1.6.1.0
Loopback bit error ratio (LBER)	Yes	1.6.1.0
Monitor spectrum	Yes	1.6.1.0
Occupied BW	Yes	1.6.1.0
Power stat CCDF	Yes	1.6.1.0
Power vs. time	Yes	1.6.1.0
Spectrum emission mask	Yes	1.6.1.0
Transmit power	Yes	1.6.1.0

TD-SCDMA/HSPA measurements 3GPP TS 34.122		E7529A test application	First available in revision
5.2/A/AA/B	UE maximum output power	Yes	1.6.1.0
5.3	UE frequency stability	Yes	1.6.1.0
5.4.1.3	Open loop power control (OLPC)	Yes	1.6.1.0
5.4.2	Minimum output power	Yes	1.6.1.0
5.4.3	Transmit off power	Yes	1.6.1.0
5.4.4	Transmit on/off time mask	Yes	1.6.1.0
5.5.1	Occupied bandwidth	Yes	1.6.1.0
5.5.2.1/A/B	Spectrum emission mask (SEM)	Yes	1.6.1.0
5.5.2.2/A/B	Adjacent channel leakage ratio (ALCR)	Yes	1.6.1.0
5.5.3	Spurious emissions ¹	Yes	1.6.1.0
5.6	Transmit intermodulation ³	Yes	1.6.1.0
5.7.1/A/B	Error vector magnitude (EVM)	Yes	1.6.1.0
5.7.2	Peak code domain error	Yes	1.6.1.0
6.2	Reference sensitivity level	Yes	1.6.1.0
6.3	Maximum input level	Yes	1.6.1.0
6.3A	Maximum input level for HS-PDSCH reception (16QAM)	Yes	1.6.1.0
6.4	Adjacent channel selectivity ²	Yes	1.6.1.0
6.5	Blocking characteristics ²	Yes	1.6.1.0
6.6	Spurious response ³	Yes	1.6.1.0
6.7	Intermodulation characteristics ²	Yes	1.6.1.0
6.8	Spurious emissions ¹	Yes	1.6.1.0
7.2.1	Demodulation of DCH	Yes	1.6.1.0
7.3.1	Demodulation of DCH in multipath fading conditions case 1	E7515A-C01	1.6.1.0
7.3.2	Demodulation of DCH in multipath fading conditions case 2	E7515A-C01	1.6.1.0
7.3.3	Demodulation of DCH in multipath fading conditions case 3	E7515A-C01	1.6.1.0
7.3A	Demodulation of DCH in high-speed train conditions	E7515A-C01	1.6.1.0
7.7	Demodulation of DCH in moving conditions	E7515A-C01	1.6.1.0
7.8	Demodulation of DCH in birth-death conditions	E7515A-C01	1.6.1.0

1. Requires external signal analyzer.
2. Requires external signal generator.
3. Use cell 2 for CW interferer.

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